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Olive Germplasm

Italian Catalogue of Olive Varieties

Authored by Innocenzo Muzzalupo

OLIVE GERMPLASM – ITALIAN CATALOGUE OF OLIVE VARIETIES

Edited by **Innocenzo Muzzalupo**

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http://dx.doi.org/10.5772/54437
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First published in Croatia, 2012 by INTECH d.o.o.
eBook (PDF) Published by IN TECH d.o.o.
Place and year of publication of eBook (PDF): Rijeka, 2019.
IntechOpen is the global imprint of IN TECH d.o.o.
Printed in Croatia

Legal deposit, Croatia: National and University Library in Zagreb

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Olive Germplasm - Italian Catalogue of Olive Varieties
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p. cm.

Print ISBN 978-953-51-0884-9

eBook (PDF) ISBN 978-953-51-5342-9

Meet the author

Innocenzo Muzzalupo is a researcher of science and food technology in the Consiglio per la Ricerca e la sperimentazione in Agricoltura – centro di ricerca per l'olivicoltura e l'industria olearia (Agricultural Research Council - olive growing and oil industry research centre, CRA-OLI) in Italy. He received a degree in Biological Science from the University of Calabria in 1993. He received his PhD (1997) in Chemistry from the University of "La Sapienza" Rome. After he received his PhD degree, he was appointed as Post-Doctoral in Food Science at the University of Calabria. Between 1999 and 2008 he had a contract as professor of Botany at the University of Calabria. Following eight years of extensive research on olive characterization, in 2008 he was appointed as a researcher at the CRA. His research areas include olive germplasm characterization, olive genes characterization, and analytical methods for olive oil traceability and olive oil quality.

Contents

Preface

Among cultivated plants, the olive (*Olea europaea* L.) is the sixth most important oil crop in the world, presently spreading from the Mediterranean region of origin to new production areas, due to the beneficial nutritional properties of olive oil and to its high economic value. Olive oil has favourable nutritional properties, and consequently, its consumption, which was traditionally restricted to the Mediterranean area (77% of the world production area), is increasing worldwide (mainly the United States, Canada, Australia and Japan). Some olive varieties are cultivated specifically for table consumption, but the majority are used for oil extraction. Based on estimates by the FAO 2010, Plant Production and Protection Division Olive Germplasm, the world's olive germplasm contains more than 2,629 different varieties, with many local varieties and ecotypes contributing to this wealth.

Olive growing in Italy is very important, but there is still a high degree of confusion regarding the genetic identity of olive cultivars. The problem of characterizing the olive tree germplasm is complicated not only by the wealth of its genetic patrimony, but also by the absence of reference standards and a well defined system of nomenclature that is free from homonymy and synonymy. Only recently, some Italian research projects (*i.e.* COLLEZIONI; CERTOLIO; GERMOLI; OLEA; OLVIVA; RGV-FAO and RIOM projects) have raised the issue of the "standard reference variety" are trying to achieve a "standard certificate" for each variety present in different Italian regions. The extent of this diversity has important implications for both the adaptation of varieties to their local environment and for the optimization of the agronomical performance of these varieties under a given set of environmental conditions. For example, every initiative promoting olive cultivation should consider the potential repercussions of such action on any local olive varieties. Every region should preserve its own plant material in order to safeguard both the adaptation and productivity of the species and the unique characteristics of the region's olive oil. However, the study of intra-varietal polymorphisms is important since they may have traits that, although not considered important in the past, might be important to meet the challenges of modern olive growing (*i.e.* resistance to low temperatures, salinity tolerance, etc.).

The systematic collection of Italian olive varieties for deposit into specific catalogue fields began in Italy in the 1980s. A similar international collection was started in 1997 by the Consiglio per la Ricerca e la sperimentazione in Agricoltura – centro di ricerca

per l'OLIvicoltura e l'industria olearia (Agricultural Research Council - Agricultural Research Council - Olive Growing and Oil Industry Research Centre, CRA-OLI) in Italy. Collection entailed the following steps: a survey of the territory, individuation, basic characterization, and introduction into the germplasm field. To date, roughly 500 varieties have been introduced into the CRA-OLI collection, and this list has been published (web site http://apps3.fao.org/wiews/olive/olcoll2.jsp).

A useful olive germplasm collection also requires an organizational system devoid of homonymy, synonymy and mislabeling so that a reliable classification of all varieties can be achieved without unnecessary confusion. Recent research has focused on using morphological, bio-agronomical and molecular markers to characterize and identify olive varieties. The identification of varieties by using molecular markers is a crucial aim of modern horticulture, because such a technique would greatly facilitate breeding programmers and germplasm collection management.

The book "Olive Germplasm" was born from the idea of gathering and evaluating research results obtained on the growing of olive trees in the CRA-OLI collection field. In fact, after more than 20 years from the planting of the olive trees in the collection field, a quantity of validated data was obtained which was considered to be sufficient for the realization of this work which contains the results of innovative research on its main products such as olive oil and table olives.

The book is divided into two parts: ***I***) *the olive cultivation, table olive and olive oil industry in Italy* and ***II***) *Italian catalogue of olive varieties*.

This book highlights the importance of studying the distribution, characterization and valorization of genetic diversity for better exploitation of olive resources and for the design of breeding programs. In addition, it reports some important aspects about the current state of the art in the chemistry, analysis and quality assessment of table olives and of olive oil and its minor constituents, extraction of olive oil from the fruits, water treatment, and innovative approaches for the production of olive oil based products. It also discusses bioavailability, pharmacological and other properties of bioactive ingredients in the light of new evidence on the composition of olive oil and table olives. Furthermore, it addresses some aspects related to biotechnology and other technologies to retain optimum levels of such bioactive ingredients in the various olive oil forms and to protect the environment from olive mill waste products.

The purpose of this book is to provide a glimpse into the table olive and olive oil industry by presenting the thoughts of some of the scientists who are engaged in the development of new tools and ideas used to improve the quality of products, often from very different perspectives.

I hope and trust that the information in this report will be used as the basis for policy and technical decisions to strengthen national efforts to conserve and utilize the treasures incorporated in the world's plant genetic resources to address the urgent problems faced by agriculture today and tomorrow.

I would like to express my deepest gratitude to all the authors who contributed to this book by sharing their valuable works with us. A special thanks to the reviewers who have used their valuable time in the improvement of the chapters. Finally, thanks to the publishing house that provided me with great professionalism in the realization of the book.

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Olive Germplasm – Italian Catalogue of Olive Varieties

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Additional information is available at the end of the chapter

http://dx.doi.org/10.5772/51719

1. Introduction

It is of great importance to evaluate and characterize the existing genetic diversity of the crop species, mainly for those, such as the case of olive, which still have a well preserved great cultivar patrimony, in spite of the disturbance of the environments where they are cultivated. This issue is of particular importance in areas where a number of varieties show adaptation to the difficult local environmental conditions.

The genetic patrimony of the Mediterranean Basin's olive trees are very rich and is characterised by an abundance of varieties. Based on estimates by the FAO Plant Production and Protection Division Olive Germplasm (FAO, 2010), the world's olive germplasm contains more than 2.629 different varieties, with many local varieties and ecotypes contributing to this richness.

The problem of olive germplasm classification is not only complicated by the richness of its genetic patrimony, but also by the absence of reference standards and by the confusion regarding the cultivar names, with numerous cases of homonymy (one denomination for several genotypes) and synonymy (one genotype with several denominations).

The Italian olive germplasm is estimated to include about 800 cultivars, most of them landraces vegetatively propagated at a farm level since ancient times. The number is probably underestimated because of the scarce information on minor local varieties widespread in the different olive growing areas. The study of these less-common cultivars is important because they may have traits not considered important in the past but necessary to meet the challenges of modern olive growing. Low vigour, resistance to low temperatures, salinity tolerance, adaptability to low pruning systems, late ripening and fatty-acid content are important traits for olive or olive oil quality. Additionally,

morphological characters are sometime correlated or associated with disease susceptibility and can be used as markers in breeding.

The largest olive collection (accounting for 17 percent of the total olive trees with more than 500 varieties) is held by Agricultural Research Council - Olive growing and oil industry research centre (CRA-OLI) in Italy, followed by the collections of the Centro de Investigación y Formación Agroalimentaria Córdoba (CIFACOR) in Spain. The systematic collection of Italian olive varieties for deposit into specific catalogue fields began in Italy in the 1980s. A similar international collection was begun in 1997 by CRA-OLI of Rende, Italy. Collection entailed the following steps: a survey of the territory, individuation, basic characterization, and introduction into the gene bank field. Material identified by other international scientific institutions (International Treaty on Plant Genetic Resources for Food and Agriculture - Plant Genetic Resources RGV-FAO Projects) was also included. To date, roughly 500 varieties have been introduced into the CRA-OLI collection, and this list has been published (web site http://apps3.fao.org/wiews/olive/oliv.jsp). The goal of such collections is to safeguard all cultivars, and particularly the minor ones, to avoid a loss in genetic diversity and to offer an interesting genetic basis for breeding programs. Knowledge of genetic diversity in a crop species is fundamental to its improvement. A variety of molecular, chemical and morphological descriptors are used to characterize the genetic diversity among and within crop species.

Morphological and biological characters have been widely used for descriptive purposes and are commonly used to distinguish olive cultivars. Agronomic characterization also allowed the classification of different olive cultivars. Different molecular markers have recently been used to characterize and distinguish the olive cultivars.

Management of the CRA-OLI collection includes a description of its genetic diversity for a reliable characterization of all accessions since several cases of mislabelling, homonymy and synonymy could exist.

In the present work, we used morphological characterization and molecular markers and to characterize all accessions present in the CRA-OLI collection, to build a first molecular and morphological data-base and to analyze the genetic relationships between cultivars.

We used SSR markers for genotyping the complete collection of the olive germplasm. The experimental approach was based on using the parameters as recommended by International Olive Council (COI) for characterization and the bio-agronomic observations concerned the morphological characteristic of the trees, leaves, fruit and inflorescence and the flowering period. The fruits were examined for their morphology and oil composition and for endocarp characteristics.

Over 200 elaiographic cards with colour photos, graphs and tables and with full details relating to the identification the olive varieties growing in the CRA-OLI olive germplasm collection in Calabria, Italy were reported in annex. Additional information about agronomic behaviour of the plants, and the organoleptic oil values, as determined by a *panel test*, were also recorded.

2. Materials and methods

The passport data of the olive cultivars has permitted the unequivocal classification and location of all identified genotypes. The information provided in the passport data has the aim of integrating the morphological, agronomic, and molecular data of the olive genetic resources; this information has been complemented by the photographic documentation of each accession recovered.

The elaiographical cards were made up according to the International Union for the Protection of New Varieties of Plants - UPOV method and the biometric and morphological parameters evaluated for each of the accessions were as follows: trees, leaves; inflorescences; fruits and stones.

The agronomic characteristics have been evaluated on the observations of 4-5 trees over a period of 4-5 years. Additional information about cold and agronomic behaviour of the plants, and the organoleptic oil values, as determined by a *panel test*, were also recorded. All the olives varieties analysed were growing in the CRA-OLI olive germplasm collection at Mirto-Crosia (Cosenza, Italy).

2.1. Morphological characterization

The systematic utilization of descriptive morphological characters of the tree and various tree organs has enabled the characterization and discriminatory identification of varieties. The methodology used for describing the olive biodiversity recovered has considered a set of 24 morphological characters (tree: 3 characters; leaf: 3; inflorescence: 2; fruit: 8; endocarp: 8).

2.1.1. Characters of the tree

Three qualitative characters (vigour, growth habit, and canopy-density) are considered.

2.1.1.1. Plant vigour

This refers to both the size of the tree and the intrinsic ability of the scaffold branches and shoots to grow in length and width. It is divided into the following categories:

a. *Weak.* Tree whose growth is modest even under optimal agronomic conditions. When mature, the trunk and the area projected by the canopy of the tree are distinctly less than what is expected of a specimen of this species.
b. *Medium.* Tree which, in each area and when normal cultural practices areapplied, displays the average development expected of an olive tree.
c. *Strong.* Tree which, in each area and when normal cultural practices areapplied, displays strong growth, marked trunk and canopy development in terms of both height and volume, and vigorous, long branches.

2.1.1.2. Growth habit

This character describes the natural distribution of the scaffold branches and shoots before there is interference from the training shape adopted and when vigour exerts little influence. Growth habit is divided into three categories (Figure 1):

a. *Drooping.* Natural growth habit that can be characterized by plagiotropic branching, i.e. by shoots and limbs which are small in diameter and bend downwards from the outset.
b. *Spreading.* Characterized by initial orthotropic branching. The weight of the canopy and/or of the crop subsequently forces the limb to bend down and turn in the direction in which the greatest amount of light and space is available. The canopy thus becomes hemispherical in shape (even when the olive has several trunks, they always remain quite distinct from each other).
c. *Erect.* Habit characteristic of certain cultivars whose branches tend to grow vertically and have a strong apical dominance. The tree acquires a fairly pronounced conical shape which becomes cylindrical on reaching maturity. As a rule, cultivars which have an erect growth habit are also vigorous although there are some major exceptions.

a *b* *c*

Figure 1. Categories of growth habit of the olive trees

2.1.1.3. Growth habit

Indicates the extent of canopy vegetation and can be measured by the possibility of light penetration. Result of the interaction between the length of the internodes, the number and vigour of the shoots and the size of the leaves. It is classified into three categories:

a. *Sparse.* This is normally associated with fast-growing cultivars with long internodes. From any point "space" is observed through which light can penetrate.
b. *Medium.* Density typical of the species. Vegetation is abundant but internode length and growth always leave internal space which produce a shading effect.
c. *Dense.* This is characteristic of cultivars with short internodes, abundant branching and heavy foliage. The canopy displays a compact surface, the inner section of which is shaded.

2.1.2. Characters of the leaf

Three quantitative characters (length, width, and shape) are considered. Observed in samples of about 100 adult leaves and taken from the middle section of 8-10 one year old shoots chosen from the most representative shoots on the south facing side of the tree at shoulder level.

2.1.2.1. Blade length

Observed in samples of about 100 adult leaves taken from the middle section of 8-10 one year old shoots chosen from the most representative shoots on the south facing side of the tree at shoulder level.

Blade length (L) is classified into three categories:

a. *Short* (< at 5 cm)
b. *Medium* (from 5 to 7 cm)
c. *Long* (> at 7 cm)

2.1.2.2. Blade width

Observed in samples of about 100 adult leaves taken from the middle section of 8-10 one year old shoots chosen from the most representative shoots on the south facing side of the tree at shoulder level. Blade width (W) is classified into three categories:

a. *Narrow* (< at 1 cm)
b. *Medium* (from 1 to 1.5 cm)
c. *Broad* (> 1.5 cm)

2.1.2.3. Shape

This is determined by the ratio between the length and width. Shape is divided into three categories:

a- Elliptic (<4) *b- Elliptic-Lanceolate (4 ↔ 6)* *c- Lanceolate (> 6)*

2.1.3. Characters of the inflorescence

Two quantitative characters (length and number of flowers for inflorescence) are considered (Figure 2).

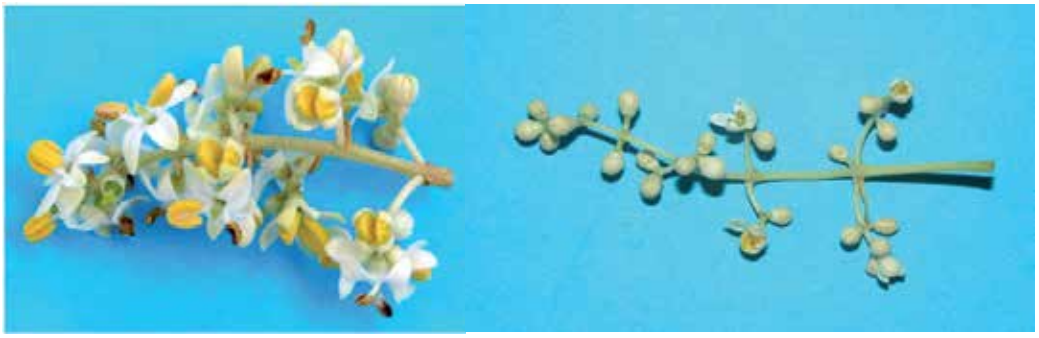

Figure 2. Two different inflorescences

2.1.3.1. Length

Observed in samples of about 100 inflorescence at bud stage, taken from the middle section of 8-10 fruiting shoots chosen from the most representative shoots on the south facing side of the tree. It is classified into three categories:

a. *Short* (< at 2.5 cm)
b. *Medium* (from 2.5 to 3.5 cm)
c. *Long* (> at 35 cm)

2.1.3.2. Number of flowers for inflorescence

Observed in samples of about 100 inflorescence at bud stage, taken from the middle section of 8-10 fruiting shoots chosen from the most representative shoots on the south facing side of the tree. It is classified into three categories:

a. *Low* (< at 18 flowers)
b. *Medium* (from 18 to 25 flowers)
c. *High* (> 25 flowers)

2.1.4. Characters of the fruits

Two quantitative characters (weight and shape) and six qualitative characters (symmetry, position of maximum transverse diameter, apex, base, nipple, and lenticels) are considered. Some characters refer to two positions:

Position A in which the fruit generally displays the greatest asymmetry when held by either and between the index finger and thumb.

Position B is reached by turning 90° from *position A.*

2.1.4.1. Weight

Determined in a sample of 100 fruits taken from the middle section of fruiting shoots chosen from the most representative shoots on the south facing side of the tree. It is classified into four categories:

a. *Low* (< at 2 g)
b. *Medium* (from 2 to 4 g)
c. *High* (from 4 to 6 g)
d. *Very high* (> at 6)

2.1.4.2. Shape (position A)

Ratio between the length and width of fruits. Determined in a sample of 100 fruits taken from the middle section of fruiting shoots chosen from the most representative shoots on the south facing side of the tree. Shape is classified into three categories:

a-Spherical (< 1.25)

b- Ovoid (1.25 ↔ 1.45)

c- Elongated (>1.45)

2.1.4.3. Symmetry (position A)

Extent to which the two longitudinal halves match. Determined in a sample of 100 fruits taken from the middle section of fruiting shoots chosen from the most representative shoots on the south facing side of the tree. It is classified into three categories:

a- Symmetric

b- Slightly asymmetric

c- Asymmetric

2.1.4.4. Position of maximum transverse diameter (position B)

According to its location. Determined in a sample of 100 fruits taken from the middle section of fruiting shoots chosen from the most representative shoots on the south facing side of the tree. It is classified into three categories:

a- Towards base

b- Central

c- Towards apex

2.1.4.5. Apex (position A)

Determined in a sample of 100 fruits taken from the middle section of fruiting shoots chosen from the most representative shoots on the south facing side of the tree. It is classified into two categories:

a- Pointed

b- Rounded

2.1.4.6. Base (position A)

Determined in a sample of 100 fruits taken from the middle section of fruiting shoots chosen from the most representative shoots on the south facing side of the tree. It is classified into two categories:

a- Truncate

b- Rounded

2.1.4.7. Nipple

Determined in a sample of 100 fruits taken from the middle section of fruiting shoots chosen from the most representative shoots on the south facing side of the tree. This characteristic of the tip of the fruit style is:

a- Absent *b- Tenuous* *c- Obvious*

2.1.4.8. Lenticelles

When the fruit is still green.Determined in a sample of 100 fruits taken from the middle section of fruiting shoots chosen from the most representative shoots on the south facing side of the tree. It is classified into the following categories:

a. *few* or *many*
b. *small* or *large*

a- Few and *large* *b- Many* and *small*

2.1.5. Characters of the endocarp (stone)

The endocarp is the internal, woody part ofthe fruit that encloses the seed. Three quantitative characters (weight, shape, and number of grooves) and five qualitative characters (symmetry, position of maximum transverse diameter, apex, base, and surface) are considered. These are evaluated in the afore-mentioned sample of 100 fruits. As in the case of the fruit, some characters also refer to two positions. *Position A* is normally the position of maximum asymmetry and is that in which the carpel suture faces the observer. *Position B* is reached by turning 90° from *position A.*

2.1.5.1. Weight

The weight is evaluated on the afore-mentioned sample of 100 fruits. It is classified into four categories:

a. *Low* (< at 0.3 g)
b. *Medium* (from 0.3 to 0.45 g)
c. *High* (from 0.45 to 0.7 g)
d. *Very high* (> at 0.7)

2.1.5.2. Shape

Ratio between the length and width of endocarps. Shape is classified into four categories:

a- Spherical *b- Ovoid* *c- Elliptic* *d- Elongated*

2.1.5.3. Symmetry (position A)

Extent to which the two longitudinal halves match. It is classified into three categories:

a- Symmetric *b- Slightly asymmetric* *c- Asymmetric*

2.1.5.4. Position of maximum transverse diameter (position B)

According to its location. It is classified into three categories:

a- Towards base *b- Central apex* *c- Towards apex*

2.1.5.5. Apex (position A)

The apex is classified into two categories:

a- Pointed

b-Rounded

2.1.5.6. Base (position A)

The base is classified into three categories:

a- Truncate

b- Pointed

c- Rounded

2.1.5.7. Surface (position A)

Based on depth and abundance of fibrovascular bundles. It is classified into three categories:

a- Smooth

b- Rugose

c- Scabrous

2.1.5.8. Number of grooves

Number of grooves that can be seen from the stalk insertion point. It is classified into three categories:

a. *Low* (< at 7)
b. *Medium* (from 7 at 10)
c. *High* (> at 10)

2.2. Pomological characterization and oil quality

To complete the description of the varieties recovered a methodology has also been adopted for the secondary characterization (pomological and oil quality) of the varieties held in the CRA-OLI collections; this characterization had the aim of providing reliable data on the pomological value of the varieties identified and a common method has been used, the object being to unify the criteria for evaluating these parameters. This will help to minimize the differences that the use of different methods of study could cause in the characterization of world germplasm.

2.2.1. Average fresh weight of fruit

This parameter is calculated from 100 olives harvested at the black stage of maturation. The following categories have been established.

a. *Very low* (< at 2 g)
b. *Low* (from 2 at 4 g)
c. *Medium* (from 4 at 6 g)
d. *High* (from 6 at 8 g)
e. *Very high* (> at 8 g)

2.2.2. Average fresh weight of stone

This parameter is calculated from 100 stones obtained from the fruit and after removing the flesh. The following categories have been established.

a. *Very low* (< at 0.2 g)
b. *Low* (from 0.2 at 0.4 g)
c. *Medium* (from 0.4 at 0.6 g)
d. *High* (from 0.6 at 0.8 g)
e. *Very high* (> at 0.8 g)

2.2.3. Flesh/Stone ratio of the fruit

This parameter is calculated from the fruit and stone weight data obtained from samples. The following categories have been established.

a. *Low* (< at 5.0)
b. *Medium* (from 5.0 at 7.5)
c. *High* (from 7.5 at 10.0)
d. *Very high* (> at 10.0)

2.2.4. Percentage of oil in the fruit

This parameter is calculated from 0.3 kg paste olive samples that was milled for 1 min (standardized time to obtain a homogeneous sample and to minimize heating of the olive

paste) in a small hammer mill. For oil content determination, the sample was analyzed using a Fourier Transform Near-InfraRed instrument (MPA Multi Purpose AnalyzerFT-NIR spectrometer system (Bruker Optics, Milan,Italy), according to Bendini *et al.*, 2007. The following categories have been established.

a. *Very low* (< at 30 %)
b. *Low* (from 30 at 40 %)
c. *Medium* (from 40 at 50 %)
d. *High* (from 50 at 60 %)
e. *Very high* (> at 60%)

2.2.5. Olive oil extraction

For each sample 5 kg of olives were picked from five trees grown in the CRA-OLI germplasm collection, and then milled in a laboratory scale hammer mill (Oliomio, Toscana Enologica Mori, Tavernelle Val di Pesa, Italy). After 30 minutes of malaxation at room temperature the oil was separated by centrifugation in the same operative conditions (Figure 3). Then the oil was filtered and stored in the dark at 8 °C until analysis.

Figure 3. Decanter and disc stack centrifuges

2.2.6. Oil determinations

The quality of the oil has been determined according to its fatty acid composition (Muzzalupo *et al.*, 2011). Expressed as a percentage and determined according to the official method of European Community (Commission Regulation No 61/2011).

2.2.7. Sensory analysis

Quantitative descriptive analysis was carried out by a total of 9 assessors, members of staff of the CRA-OLI of Rende (CS), using the procedure reported in a later chapter ("*sensory*

properties of virgin olive oils"). The assessors had experience in Qualitative Data Analysis - QDA (Stone and Sidel, 2004) and virgin olive oil sensory evaluation in accordance with the current UE Regulation (N. 61/2011).

Virgin olive oil samples (15 g) were served to the assessors in clear glass tumblers (100 mL), covered with watch glasses at room temperature (approximately 28 °C). The samples were presented in duplicate, in balanced order to each assessor.

For a description of the virgin olive oils, the following terms were used: yellow, yellow-green, intense green, musk-green to describe the virgin olive oil colour; fruity, cut-grass, floral, hay-like, almond, apple, and artichoke for the virgin olive oil olfactory profile; pungent, bitter, greasy, and sweet to define the virgin olive oil taste notes.

The intensity of those sensations was graded using a line scale and thus converted into a numerical score by measuring the position of the placed mark along a 10 cm line. The results were calculated as the medianamong assessor sensory scores.

2.3. Molecular markers

The total genomic DNA was isolated from fresh, young leaves following a CTAB protocol originally developed by Murry and Tompson (1980) and further modified by Muzzalupo and Perri (2002). The olive trees were genotyped at 11 nuclear microsatellite loci, selected among those available in literature and proved to be suitable for the characterization and

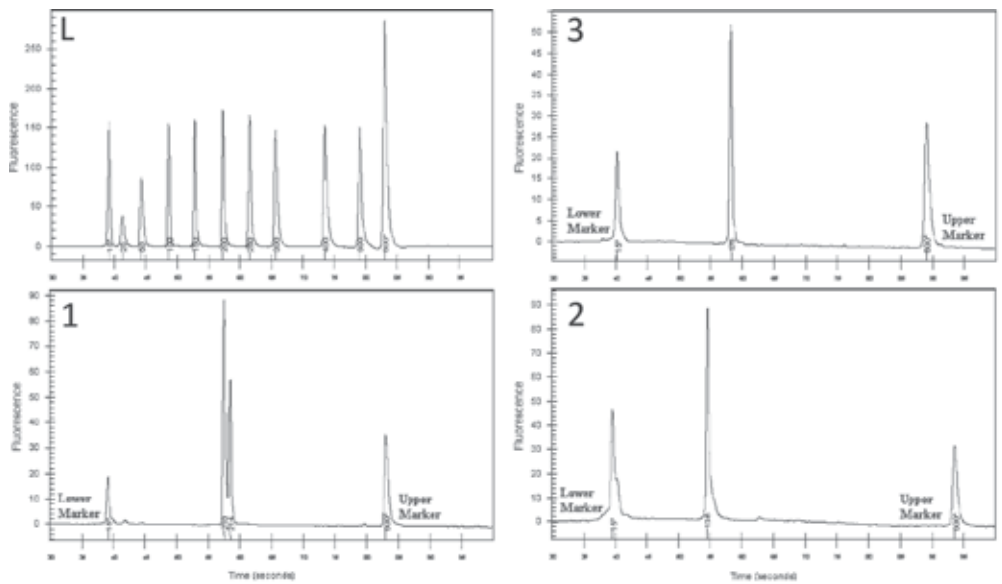

Figure 4. SSR profile of olive cultivar. The electropherograms were obtained using the 2100 Bioanalyzer running DNA 500 LabChips. DNA extracted from leaf. GAPU71A (**1**), UDO03 (**2**), UDO 39 (**3**), and Ladder (**L**). The horizontal axis represents migration time of DNA fragments in seconds, and the vertical axis represents fluorescence. Upper and lower peaks in the electropherogram represent the internal DNA markers at 15 and 600 bp, which were used to size and quantify the PCR products

identification of olive varieties in previous papers (Baldoni *et al.*, 2009; Muzzalupo *et al.*, 2009). The loci used were four (GAPU59, GAPU71A, GAPU71B and GAPU103A) among those described by Carriero *et al.* (2002) five (UDO01, UDO03, UDO12, UDO28 and UDO39) among those described by Cipriani *et al.* (2002) and two (DCA9 and DCA18) among those described by Sefc *et al.* (2000). Four loci of the selected markers (GAPU71B, GAPU103A, DCA9 and DCA18) were chosen from the common list reported by Baldoni *et al.* (2009) for use in a future comparison of data, while others (Gapu59, GAPU71A, UDO01, UDO03, UDO12, UDO28 and UDO39) were chosen as in other recent studies they were found to be very suitable for Italian intra-cultivars characterization and for characterization of olive germplasm collections (Muzzalupo *et al.*, 2009; Muzzalupo *et al.*, 2010). Electrophoresis and detection of PCR products were carried out according to Muzzalupo *et al.*(2007).

3. Conclusion

The morphological and molecular characterizations (elaiographic cards) are efficient for olive germplasm management, including the characterisation of varieties and the establishment of relationships between cultivars in the CRA-OLI olive collection. Beyond this identification, we constructed a data base that can be used to make a reference collection of Italian olive germplasm by comparing the morphological and molecular pattern of each identified varieties with samples from different areas.

Introducing new accessions by prospecting in different Mediterranean areas is currently in progress. The choice of which new varieties enter into the CRA-OLI collection can now take into account our results, both by avoiding duplicates and also by maximising genetic diversity.

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Acknowledgement

The elaiographic cards annex has been possible thanks to the contribution of time, energy and expertise by many individuals of CRA-OLI. The author would like to take this opportunity to acknowledge their generosity. The author thank the Projects: CERTOLIO, GERMOLI, OLIOPIU' and RGV-FAO for financial support.

Annex - Elaiographic Cards

Many CRA-OLI staff members and consultants have provided specific contributions to annexes:

- Alessandrino Maria, Boccuti Alfonso, Briccoli-Bati Caterina, Ciliberti Agostino, Cruceli Giuseppe, Godino Gianluca, Iannotta Nino, Lombardo Nicola, Madeo Alfreo, Muzzalupo Innocenzo, Pellegrino Massimiliano, Toscano Pietro, Turco Domenico, and Zaffina Francesco who contributed to the collection field;
- Alessandrino Maria, Boccuti Alfonso, Ciliberti Agostino, Cruceli Giuseppe, Godino Gianluca, Lombardo Nicola, Madeo Alfreo, Muzzalupo Innocenzo, Pellegrino Massimiliano, Turco Domenico, and Zaffina Francesco who contributed to the morpho-bioagronomic analysis;
- Fiorita Antonio, Longo Domenico, Parise Attilio, Ripoli Antonio, and Tucci Paolo who contributed to the extractionof monovarietal olive oil;
- Benincasa Cinzia, Muzzalupo Innocenzo, Parise Attilio, Patarino Alba, Pellegrino Massimiliano, and Perri Enzo who contributed to the biochemical analysis;
- Benincasa Cinzia, Godino Gianluca, Miranda Osvaldo, Muzzalupo Innocenzo, Pellegrino Massimiliano, Perri Enzo, Ripoli Antonio, Rizzuti Biagio, and Zaffina Francesco who contributed to the sensory analysis of monovarietal olive oil;
- Muzzalupo Innocenzo and Pellegrino Massimiliano who contributed to the molecular analysis;
- Alessandrino Maria and Muzzalupo Innocenzo who supported the preparation of design of the elaiografic card.
- Alessandrino Maria, Gianluca Godino, and Muzzalupo Innocenzo who provided photos of the olive varieties.

List of olive varieties

1. Abunara
2. Arnasca
3. Ascolana dura
4. Ascolana semitenera
5. Ascolana tenera
6. Augellina
7. Aurina
8. Bianchera
9. Borgese
10. Borgiona
11. Bosana
12. Brandofino
13. Buscionetto
14. Cacaredda
15. Calatina
16. Canino
17. Carboncella
18. Carbonchia
19. Cariasina
20. Carmelitana
21. Carolea
22. Carpinetana
23. Castiglionese
24. Castricianella rapparina
25. Cavalieri
26. Cazzinicchio
27. Cellina di Nardò
28. Cellina di Rotello
29. Cerasuola
30. Ciciariello
31. Cima di Melfi
32. Colombina
33. Coratina
34. Corneglia
35. Cornia
36. Corniola
37. Corniolo
38. Coroncina
39. Corsicana da olio
40. Crognalegna
41. Cucca
42. Dolce Agogia
43. Dolce d'Andria
44. Dolce di Cassano
45. Dolce di Rossano
46. Dritta
47. Erbano
48. Faresana
49. Favarol
50. Fecciaro
51. Feglina
52. Fosco
53. Frangivento
54. Frantoio
55. Gaggiolo
56. Gentile di Chieti
57. Gentile di Larino
58. Gentile nera di Colletorto
59. Geracese
60. Giarfara
61. Giarraffa
62. Giusta
63. Gnagnaro
64. Grappolo
65. Grignan
66. Grossa di Cassano
67. Grossa di Spagna
68. Grossa di Venafro
69. Grossale
70. I 77
71. Imperiale
72. Intosso
73. Itrana
74. Laurina
75. Lavagnina
76. Leccino
77. Lezze
78. Lumiaru
79. Maiatica di Ferrandina
80. Marina
81. Marzio
82. Mignola
83. Mignolo
84. Minna di vacca
85. Monaca
86. Mora
87. Moraiolo "T. Corsini"
88. Moraiolo
89. Morchiaio
90. Moresca
91. Morinello
92. Nasitana frutto grosso
93. Nebba
94. Nebbia
95. Nebbio di Chieti
96. Nebbio di Pescara
97. Negrera
98. Nera di Cantinella
99. Nera di Gonnos
100. Nocellara del Belice
101. Nocellara etnea
102. Nocellara messinese
103. Nociara
104. Nolca
105. Nostrale di Fiano Romano
106. Nostrale di Rigali
107. Nostrana di Brisighella
108. Ogliara
109. Ogliarola barese
110. Ogliarola del Vulture
111. Ogliarola messinese
112. Ogliastro grande
113. Olivago
114. Olivastra seggianese
115. Olivastro di Bucchianico
116. Olivastro frentano
117. Olivo da olio
118. Olivo da salare
119. Olivo della Madonna
120. Orbetana
121. Ortice
122. Ortolana
123. Ottobratica
124. Ottobrina
125. Paesana bianca
126. Paesana nera
127. Palmarola
128. Pasola
129. Passulunara
130. Pennulara
131. Peranzana
132. Perciasacchi
133. Piangente
134. Piantone di Falerone
135. Piantone di Mogliano
136. Pidicuddara
137. Pignola
138. Pisciottana
139. Pizzè' carroga
140. Pizzutella
141. Posola
142. Posolella
143. Provenzale
144. Puntella
145. Racioppa
146. Racioppella
147. Raggiola
148. Raja sabina
149. Ravece
150. Raza
151. Razzo
152. Razzola
153. Riminino
154. Ritonnella
155. Rizzitella
156. Romanella molisana
157. Rosciola Coltodino
158. Rosciola di Rotello
159. Rosciola di Venafro
160. Rosciola
161. Rotondella di Sanza
162. Salvia
163. Sammartinara
164. Sammartinenga
165. San Benedetto
166. San Francesco
167. Santa Caterina
168. Santa Maria
169. Sant'Agatese
170. Sant'Agostino
171. Santomauro
172. Sargano di Fermo
173. Sargano di San Benedetto
174. Scarpetta
175. Semidana
176. Sessana
177. Simona
178. Sinopolese
179. Sirole
180. Sperone di gallo
181. Termite di Bitetto
182. Terza grande
183. Tombarello
184. Tonda di Alife
185. Tonda di Filadelfia
186. Tonda di Filogaso
187. Tonda di Strongoli
188. Tonda dolce di Partanna
189. Tonda iblea
190. Tondina
191. Tortiglione
192. Toscanina
193. Tunnulidda
194. Vaddara
195. Vallanella
196. Verdello
197. Vocio
198. Zaituna
199. Zimbimbo
200. Zinzifarica

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" Abunara "

(synonymy: Marsalesa, Marsalese, Marsalisa, Nuciddara, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (7,18 ± 0,85)**
Oil content (%): **medium (44,06 ± 3,11)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,36 ± 0,54)**
Blade width (cm): **medium (1,46 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,62 ± 0,88)**
Number of flowers: **low (16,31 ± 1,66)**

Fruit characters
Fresh weight of 100 fruits (g): **very high (6,28 ± 0,45)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **very high (0,77 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

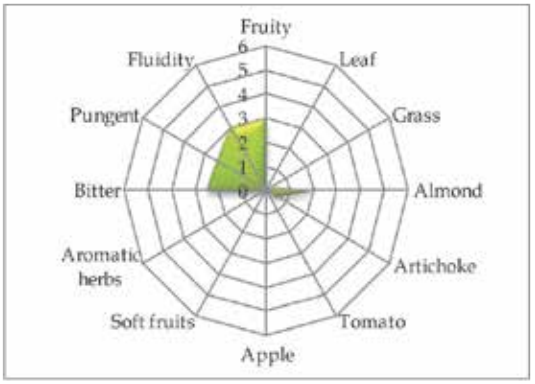
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**8,42 ± 0,14**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**13,26 ± 0,25**	Linolenic acid (ω3)	**0,75 ± 0,03**		
Palmitoleic acid	**1,30 ± 1,13**	Arachic acid	**0,26 ± 0,05**	Unsat./satured	**5,55 ± 0,14**
Stearic acid	**1,62 ± 0,10**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**11,23 ± 0,67**
Oleic acid	**73,13 ± 0,47**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-light, with taste of almond. Balanced taste sensation with medium-light bitter and spicy. Medium-light fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 162	**179 - 181**	**208 - 212**	**210 - 210**	**124 - 124**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 177**	**182 - 182**	**108 - 108**	

References:

1 - Bottari V., Spina P. In: *Le varietà di olivo coltivate in Sicilia*, Ann. Sper. Agr. (1953), 7: pp. 937-1004.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience,* (2009), 44: pp. 582-588.

" Arnasca "

(synonymy: Pignola di Arnasco)

Areal distribution or origin area: **Liguria**
Flesh/pit weight ratio: **medium (5,12 ± 1,13)**
Oil content (%): **medium (41,79 ± 1,16)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **drooping**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,38 ± 0,56)**
Blade width (cm): **medium (1,42 ± 0,11)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,20 ± 1,35)**
Number of flowers: **medium (19,76 ± 2,96)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,09 ± 0,52)**
Shape (length/width): **ovoid**
Symmetry: **slightly**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **medium (0,34 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

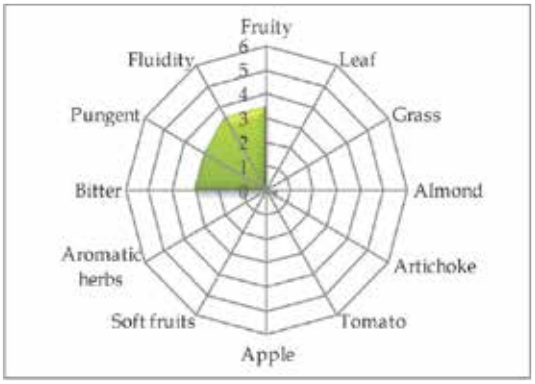
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**7,28 ± 0,01**	Lignoceric acid	**0,06 ± 0,03**
Palmitic acid	**13,08 ± 0,17**	Linolenic acid (ω3)	**0,50 ± 0,04**		
Palmitoleic acid	**1,47 ± 0,00**	Arachic acid	**0,31 ± 0,16**	Unsat./satured	**5,39 ± 0,03**
Stearic acid	**2,04 ± 0,11**	Eicosenoic acid	**0,33 ± 0,05**	ω6/ω3	**14,59 ± 1,24**
Oleic acid	**73,52 ± 0,52**	Behenic acid	**0,11 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 176	**177 - 179**	**212 - 212**	**214 - 218**	**130 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 135**	**164 - 177**	**161 - 205**	**213 - 232**	

References:

1 - Cimato A., Cantini C., Sani G. In: *Atti 4° Convegno Nazionale sulla Biodiversità,* Alghero (2000), pp. 497-500.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Ascolana dura "

(synonymy: Ascolana semidura, Gentile, Oliva di San Francesco, etc.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **medium (6,79 ± 0,24)**
Oil content (%): **medium (46,31 ± 0,13)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,19 ± 0,37)**
Blade width (cm): **medium (1,18 ± 0,10)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,87 ± 0,50)**
Number of flowers: **low (14,72 ± 0,52)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,15 ± 0,60)**
Shape (length/width): **spherical**
Simmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,67± 0,09)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Simmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

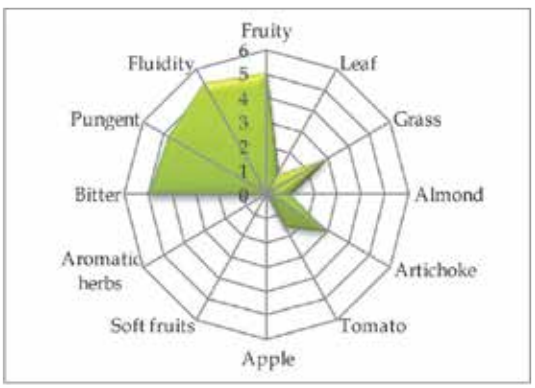
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,92 ± 0,04**	Lignoceric acid	**0,05 ± 0,01**
Palmitic acid	**15,05 ± 0,02**	Linolenic acid (ω3)	**0,78 ± 0,01**		
Palmitoleic acid	**3,07 ± 0,04**	Arachic acid	**0,19 ± 0,01**	Unsat./satured	**4,76 ± 0,03**
Stearic acid	**1,64 ± 0,04**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**14,00 ± 0,30**
Oleic acid	**65,48 ± 0,52**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with good sensation of grass, artichoke and tomato. Balanced in flavours, with hints of bitter and spicy medium-high intensity. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**177 - 181**	**214 - 222**	**214 - 224**	**124 - 130**	**136 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 166**	**182 - 210**	**200 - 200**	

References:

1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche*, ASSAM (2001), pp. 13-16.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Ascolana semitenera "

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **medium (5,91 ± 0,21)**
Oil content (%): **medium (45,27 ± 1,48)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,20 ± 0,34)**
Blade width (cm): **medium (1,20 ± 0,01)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,54 ± 2,20)**
Number of flowers: **medium (18,81 ± 0,53)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,74 ± 0,33)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,68± 0,08)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

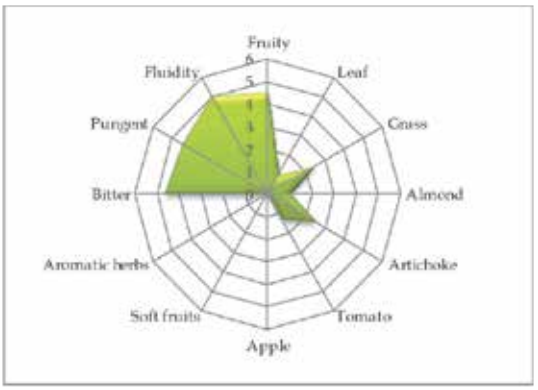
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,77 ± 0,09**	Lignoceric acid	**0,04 ± 0,01**
Palmitic acid	**12,13 ± 0,24**	Linolenic acid (ω3)	**0,79 ± 0,02**		
Palmitoleic acid	**3,52 ± 0,22**	Arachic acid	**0,22 ± 0,06**	Unsat./satured	**5,93 ± 0,09**
Stearic acid	**1,61 ± 0,11**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**12,35 ± 0,50**
Oleic acid	**68,59 ± 0,10**	Behenic acid	**0,08 ± 0,00**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with good sensation of grass, artichoke and tomato. Balanced in flavors, with hints of bitter and spicy medium-high intensity. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**177 - 181**	**214 - 222**	**214 - 224**	**124 - 130**	**136 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 135**	**166 - 166**	**182 - 210**	**200 - 232**	

References:

1 - Jacoboni N., Fontanazza G. In: *Le Cultivar*, Ed. Reda l'Olivo (1981), pp. 9-52.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Ascolana tenera "

(synonymy: Noce, Oliva noce, Oliva grossa, etc.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **high (9,30 ± 0,16)**
Oil content (%): **medium (43,22 ± 1,96)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,79 ± 0,53)**
Blade width (cm): **medium (1,42 ± 0,19)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,49 ± 1,86)**
Number of flowers: **low (16,76 ± 1,01)**

Fruit characters
Fresh weight of 100 fruits (g): **very high (7,04 ± 1,27)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,66 ± 0,14)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **high**

Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**4,98 ± 0,64**	Lignoceric acid	**0,07 ± 0,01**
Palmitic acid	**10,65 ± 1,00**	Linolenic acid (ω3)	**0,66 ± 0,04**		
Palmitoleic acid	**1,51 ± 0,16**	Arachic acid	**0,03 ± 0,01**	Unsat./satured	**6,81 ± 0,82**
Stearic acid	**1,79 ± 0,16**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**7,55 ± 0,15**
Oleic acid	**78,94 ± 1,06**	Behenic acid	**0,06 ± 0,03**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **medium fruity , with good sensation of grass, less almond and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**177 - 179**	**214 - 222**	**214 - 224**	**126 - 144**	**136 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 166**	**150 - 161**	**200 - 200**	

References:

1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche,* ASSAM (2001), pp. 17-20.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Augellina "

(synonymy: Agnellina, Cellina, etc.)

Areal distribution or origin area: **Basilicata**
Flesh/pit weight ratio: **high (7,82 ± 0,82)**
Oil content (%): **medium (41,14 ± 2,43)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,84 ± 0,55)**
Blade width (cm): **broad (1,55 ± 0,16)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,65 ± 1,76)**
Number of flowers: **medium (20,83 ± 4,39)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,64 ± 0,29)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,64 ± 0,05)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **high**

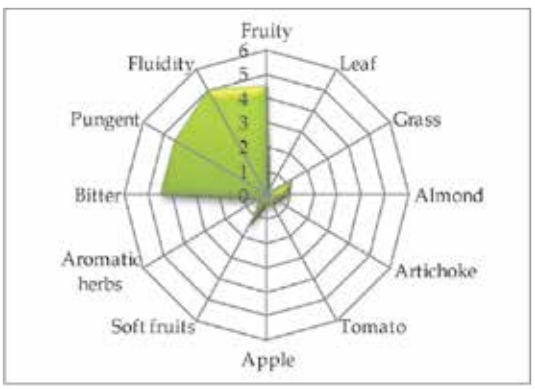
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,79 ± 0,70**	Lignoceric acid	**0,07 ± 0,02**
Palmitic acid	**15,17 ± 0,61**	Linolenic acid (ω3)	**0,81 ± 0,08**		
Palmitoleic acid	**1,25 ± 0,06**	Arachic acid	**0,24 ± 0,04**	Unsat./satured	**4,93 ± 0,18**
Stearic acid	**1,46 ± 0,04**	Eicosenoic acid	**0,24 ± 0,15**	ω6/ω3	**10,85 ± 0,10**
Oleic acid	**71,66 ± 0,69**	Behenic acid	**0,10 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of soft fruits and read sensations of almond and grass. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 198	**177 - 181**	**208 - 208**	**210 - 210**	**124 - 126**	**157 - 203**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**164 - 166**	**150 - 150**	**205 - 205**	

References:

1 - Rotundo A., Marone E. In: *Il germoplasma olivicolo lucano*, Olita-Potenza (2002), pp. 53-65.
2 - Rotundo A., Perri E.,Muzzalupo I., *et al.* In: *Il germoplasma olivicolo meridionale*, (2012 in press).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Aurina "

(synonymy: Aurina di Venafro, Liciniana, Oliva di Venafro, etc.)

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **low (3,92 ± 0,49)**
Oil content (%): **medium (42,50 ± 1,69)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,02 ± 0,61)**
Blade width (cm): **broad (1,62 ± 0,26)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,69 ± 1,11)**
Number of flowers: **medium (21,28 ± 2,72)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,28 ± 0,15)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,26 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

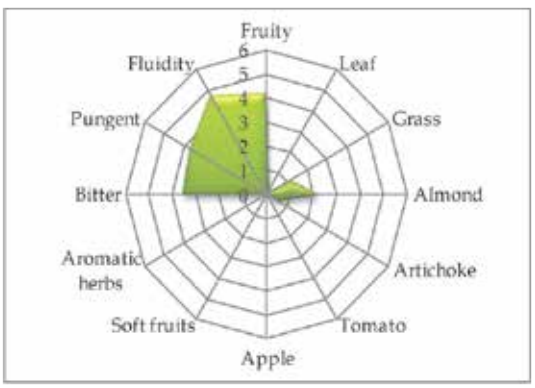
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**7,92 ± 0,62**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**16,03 ± 1,22**	Linolenic acid (ω3)	**0,80 ± 0,05**		
Palmitoleic acid	**1,90 ± 0,24**	Arachic acid	**0,28 ± 0,21**	Unsat./satured	**4,41 ± 0,39**
Stearic acid	**2,00 ± 0,21**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**9,98 ± 1,45**
Oleic acid	**69,27 ± 1,16**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 206	**173 - 175**	**222 - 222**	**210 - 214**	**124 - 144**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 177**	**154 - 205**	**213 - 213**	

References:

1 - Macrì T., Picone G., La Porta G. In : *Olivo e Olio,* (1988), 5: pp. 34-41.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo,* University of Bari (in press), ISBN 978-88-88793-97-9.

" Bianchera "

(synonymy: Belica, Bellica, Bianca istriana, Biancara, etc.)

Areal distribution or origin area: **Friuli**
Flesh/pit weight ratio: **very high (8,10 ± 1,00)**
Oil content (%): **medium (50,21 ± 0,84)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **short (4,58 ± 0,49)**
Blade width (cm): **medium (1,25 ± 0,17)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,47 ± 0,26)**
Number of flowers: **low (14,83 ± 0,98)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,37 ± 0,08)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,41 ± 0,07)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **scabrous**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**8,26 ± 0,01**	Lignoceric acid	**0,05 ± 0,02**
Palmitic acid	**11,47 ± 0,73**	Linolenic acid (ω3)	**0,96 ± 0,03**		
Palmitoleic acid	**1,18 ± 0,43**	Arachic acid	**0,30 ± 0,00**	Unsat./satured	**6,13 ± 0,11**
Stearic acid	**2,14 ± 0,84**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**8,61 ± 0,24**
Oleic acid	**74,60 ± 0,66**	Behenic acid	**0,10 ± 0,04**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with good sensation of grass, artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium-high intensity. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 182	**177 - 185**	**214 - 214**	**214 - 224**	**130 - 130**	**136 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**166 - 193**	**182 - 205**	**213 - 232**	

References:

1 - Consiglio Oleicolo Internazionale. In: *Catalogo Mondiale delle Varietà di Olivo,* COI (2003).
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Borgese "

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **medium (6,90 ± 1,07)**
Oil content (%): **medium (49,13 ± 2,04)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **long (7,53 ± 0,71)**
Blade width (cm): **broad (1,68 ± 0,09)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,19 ± 3,20)**
Number of flowers: **medium (6,90 ± 1,07)**

Fruit characters
Fresh weight of 100 fruits (g): **very high (6,13 ± 1,69)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,61 ± 0,10)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

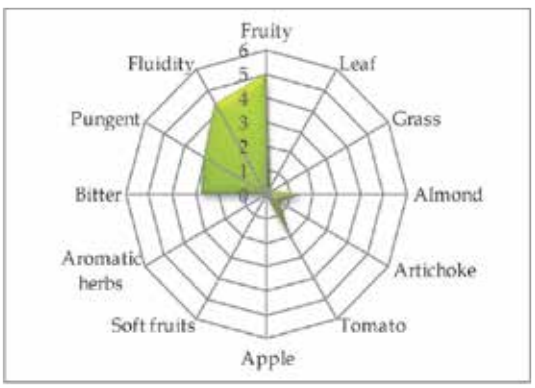
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**7,81 ± 0,93**	Lignoceric acid	**0,05 ± 0,04**
Palmitic acid	**8,57 ± 0,15**	Linolenic acid (ω3)	**0,80 ± 0,31**		
Palmitoleic acid	**0,45 ± 0,03**	Arachic acid	**0,35± 0,07**	Unsat./satured	**7,93 ± 0,30**
Stearic acid	**2,33 ± 0,21**	Eicosenoic acid	**0,14 ± 0,21**	ω6/ω3	**11,58 ± 7,00**
Oleic acid	**79,28 ± 0,84**	Behenic acid	**0,10 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and tomato, read sensations of grass and leaves. Balanced taste sensation with a light bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**179 - 179**	**212 - 222**	**214 - 214**	**130 - 144**	**150 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**143 - 205**	**200 - 220**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp. 19.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Borgiona "

(synonymy: Basciona, Borgiana, Borsciona, Morcona, etc.)

Areal distribution or origin area: **Umbria**
Flesh/pit weight ratio: **medium (6,41 ± 0,68)**
Oil content (%): **medium (45,46 ± 0,73)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,25 ± 0,53)**
Blade width (cm): **medium (1,18 ± 0,14)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,74 ± 1,65)**
Number of flowers: **medium (18,04 ± 2,69)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,52 ± 0,35)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,48 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

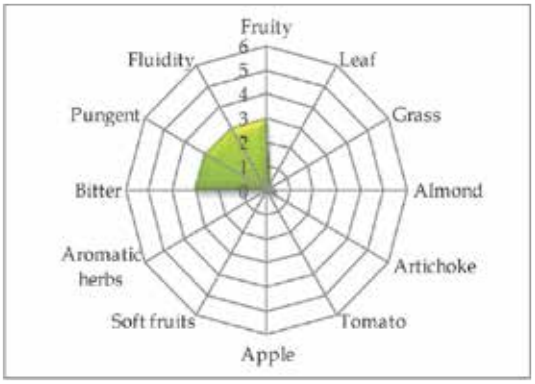
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**7,56 ± 0,05**	Lignoceric acid	**0,02 ± 0,00**
Palmitic acid	**11,05 ± 0,07**	Linolenic acid (ω3)	**0,94 ± 0,06**		
Palmitoleic acid	**1,01 ± 0,32**	Arachic acid	**0,28 ± 0,06**	Unsat./satured	**6,27 ± 0,17**
Stearic acid	**2,36 ± 0,39**	Eicosenoic acid	**0,03 ± 0,02**	ω6/ω3	**8,10 ± 0,50**
Oleic acid	**75,57 ± 0,76**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and artichoke. Balanced taste sensation with a medium-light bitter and spicy. Medium-light fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
166 - 198	**177 - 181**	**214 - 222**	**214 - 224**	**130 - 144**	**157 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 193**	**150 - 210**	**200 - 200**	

References:

1 - Pannelli G., Alfei B., D' Ambrosio A., *et al.* In: *Varietà di olivo in Umbria*, Ed. Pliniana (2000), pp. 1-6.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Bosana "

(synonymy: Bosana a scopa, Bosana pendula, Olia de ozzu, etc.)

Areal distribution or origin area: **Sardegna**
Flesh/pit weight ratio: **medium (5,29 ± 0,23)**
Oil content (%): **medium (40,99 ± 1,96)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,38 ± 0,29)**
Blade width (cm): **broad (1,61 ± 0,15)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,81 ± 1,51)**
Number of flowers: **medium (20,32 ± 1,26)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,19 ± 0,25)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (5,29 ± 0,23)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

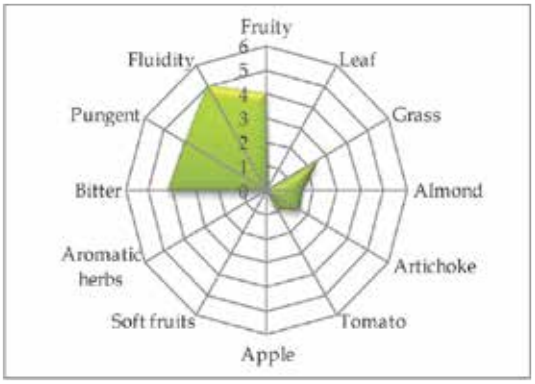
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,00**	Linoleic acid (ω6)	**6,34 ± 1,94**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**9,71 ± 1,46**	Linolenic acid (ω3)	**0,89 ± 0,03**		
Palmitoleic acid	**0,43 ± 0,07**	Arachic acid	**0,26 ± 0,02**	Unsat./satured	**7,14 ± 0,99**
Stearic acid	**2,45 ± 0,13**	Eicosenoic acid	**0,08 ± 0,04**	ω6/ω3	**7,07 ± 1,94**
Oleic acid	**79,43 ± 0,18**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **medium fruity , with good sensation of grass, less almond and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 198	**181 - 185**	**214 - 222**	**214 - 218**	**130 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**135 - 135**	**177 - 193**	**161 - 205**	**205 - 205**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Brandofino "

(synonymy: Mantonica, Nostrale, Randazzese, Randazzisa, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **very high (14,33 ± 0,60)**
Oil content (%): **medium (49,24 ± 2,49)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,71 ± 0,46)**
Blade width (cm): **medium (1,42 ± 0,19)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,37 ± 0,87)**
Number of flowers: **low (12,47 ± 2,37)**

Fruit characters
Fresh weight of 100 fruits (g): **very high (7,92 ± 1,40)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,60 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **high**

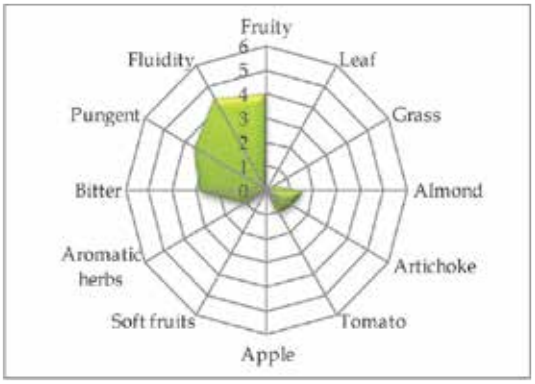
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,47 ± 0,05**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**12,71 ± 1,00**	Linolenic acid (ω3)	**0,91 ± 0,03**		
Palmitoleic acid	**1,33 ± 0,65**	Arachic acid	**0,21 ± 0,05**	Unsat./satured	**5,87 ± 0,67**
Stearic acid	**1,54 ± 0,32**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**11,51 ± 0,42**
Oleic acid	**71,32 ± 2,67**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-light, with taste of almond, read sensations of tomato and aromatic herbs. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 206	**179 - 179**	**208 - 212**	**210 - 214**	**126 - 144**	**136 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**143 - 143**	**213 - 232**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 82-86.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Buscionetto "

(synonymy: Biancolilla, Caltabellottese, Ianculidda, Oliva di Caltabellotta, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (7,03 ± 0,74)**
Oil content (%): **medium (49,66 ± 2,79)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **short (3,44 ± 0,38)**
Blade width (cm): **medium (1,38 ± 0,20)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,06 ± 0,68)**
Number of flowers: **low (12,90 ± 2,93)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,91 ± 1,23)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (7,03 ± 0,74)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

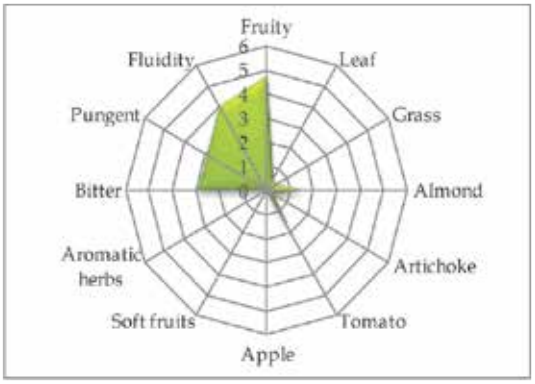
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,65 ± 0,63**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**12,93 ± 0,08**	Linolenic acid (ω3)	**0,82 ± 0,04**		
Palmitoleic acid	**1,07 ± 0,49**	Arachic acid	**0,21 ± 0,03**	Unsat./satured	**5,64 ± 0,24**
Stearic acid	**1,80 ± 0,53**	Eicosenoic acid	**0,04 ± 0,01**	ω6/ω3	**8,25 ± 6,05**
Oleic acid	**75,46 ± 1,20**	Behenic acid	**0,06 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and tomato, read sensations of grass and leaves. Balanced taste sensation with a light bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 198	**181 - 181**	**212 - 212**	**210 - 214**	**124 - 126**	**136 - 150**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**166 - 193**	**154 - 154**	**213 - 213**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 29-34.

2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Cacaredda "

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (6,57 ± 0,50)**
Oil content (%): **medium (48,89 ± 1,18)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,48 ± 0,39)**
Blade width (cm): **medium (1,35 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,73 ± 1,01)**
Number of flowers: **low (14,09 ± 0,39)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,74 ± 0,11)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,50 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Simmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

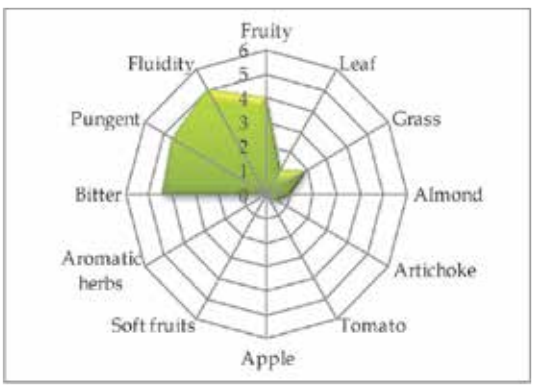
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,01 ± 1,21**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**7,58 ± 0,03**	Linolenic acid (ω3)	**0,89 ± 0,06**		
Palmitoleic acid	**0,59 ± 0,24**	Arachic acid	**0,21 ± 0,00**	Unsat./satured	**9,80 ± 0,09**
Stearic acid	**1,44 ± 0,08**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**11,27 ± 0,62**
Oleic acid	**78,99 ± 1,55**	Behenic acid	**0,06 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of grass, read sensations of almond, artichoke and leaves. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 206	**181 - 181**	**208 - 212**	**210 - 210**	**124 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**182 - 182**	**205 - 205**	

References:

1 - Tucci A., Mule' R., Fodale A. S. In: *Indagini sul germoplasma olivicolo in Sicilia*, Sviluppo Agricolo (1995), 1/2: pp. 55-64.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci*. 2008, 22(2): pp. 142-148.

" Calatina "

(synonymy: Galatina, Montagna, Montagna Calatina, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (5,35 ± 0,42)**
Oil content (%): **medium (45,39 ± 2,10)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,26 ± 0,16)**
Blade width (cm): **medium (1,27 ± 0,14)**
Shape (length/width): **elliptic - lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,12 ± 0,02)**
Number of flowers: **medium (23,25 ± 2,52)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,54 ± 0,82)**
Shape (length/width): **elongated**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,40 ± 0,11)**
Shape (length/width): **elongated**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

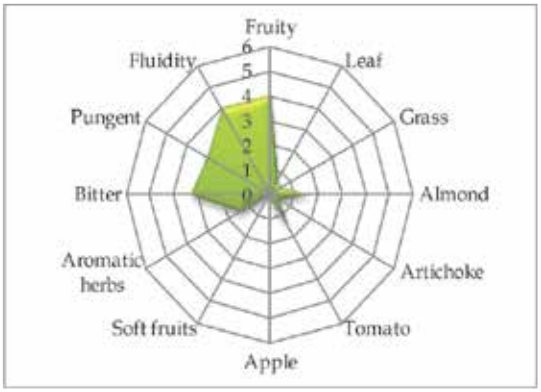
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,40 ± 0,01**	Lignoceric acid	**0,07 ± 0,01**
Palmitic acid	**9,27 ± 0,02**	Linolenic acid (ω3)	**0,71 ± 0,03**		
Palmitoleic acid	**0,41 ± 0,00**	Arachic acid	**0,20 ± 0,03**	Unsat./satured	**7,56 ± 0,03**
Stearic acid	**2,14 ± 0,01**	Eicosenoic acid	**0,36 ± 0,02**	ω6/ω3	**11,85 ± 0,44**
Oleic acid	**77,91 ± 0,07**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of almond and tomato, read sensations of aromatic herbs, grass and leaves. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 182	**175 - 179**	**212 - 222**	**210 - 214**	**124 - 126**	**136 - 136**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 177**	**143 - 182**	**205 - 205**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 88-92.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 142-148.

" Canino "

(synonymy: Caninese, Canino blasi,Cornino, Montignoso, etc.)

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **low (4,22 ± 0,07)**
Oil content (%): **medium (45,75 ± 2,77)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect-spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,77 ± 0,44)**
Blade width (cm): **medium (1,21 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,70 ± 1,00)**
Number of flowers: **low (15,81 ± 3,01)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,26 ± 0,13)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,25 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **tenuous**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

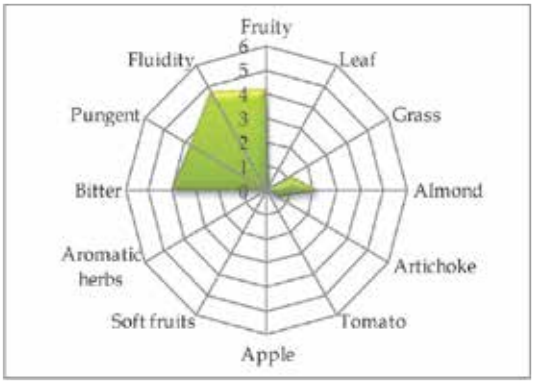
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**7,81 ± 0,89**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**13,52 ± 1,75**	Linolenic acid (ω3)	**0,84 ± 0,08**		
Palmitoleic acid	**1,18 ± 0,31**	Arachic acid	**0,37 ± 0,13**	Unsat./satured	**5,26± 0,60**
Stearic acid	**2,10 ± 0,38**	Eicosenoic acid	**0,84 ± 0,08**	ω6/ω3	**9,38 ± 1,40**
Oleic acid	**72,94 ± 1,71**	Behenic acid	**0,11 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**173 - 189**	**212 - 222**	**214 - 221**	**126 - 144**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**135 - 135**	**166 - 182**	**143 - 154**	**213 - 232**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Carboncella "

(synonymy: Carboncella Pianacce A, Carboncella Pianacce B, Carboncella Sabina, etc.)

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **medium (5,30 ± 1,26)**
Oil content (%): **medium (48,19 ± 2,81)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,23 ± 0,31)**
Blade width (cm): **medium (1,45 ± 0,15)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,71 ± 5,02)**
Number of flowers: **medium (1,60 ± 2,84)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,05 ± 0,40)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,34 ± 0,13)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Siymmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

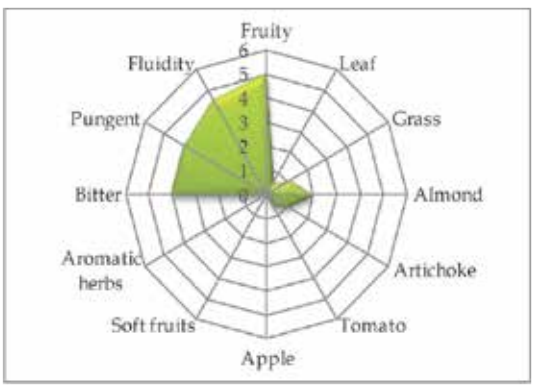
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,11 ± 0,93**	Lignoceric acid	**0,06 ± 0,01**
Palmitic acid	**13,02 ± 1,23**	Linolenic acid (ω3)	**0,84 ± 0,05**		
Palmitoleic acid	**1,38 ± 0,02**	Arachic acid	**0,49 ± 0,04**	Unsat./satured	**5,36 ± 0,53**
Stearic acid	**2,16 ± 0,03**	Eicosenoic acid	**0,40 ± 0,01**	ω6/ω3	**12,16 ± 1,84**
Oleic acid	**70,12 ± 0,38**	Behenic acid	**0,14 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
166 - 194	**177 - 181**	**208 - 212**	**214 - 224**	**124 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**182 - 210**	**213 - 213**	

References:

1 - Parlati M.V., Pandolfi S. In: *Catalogo delle principali varietà di olivo del Lazio,* Ist. Sper. Olivic. (2003), pp. 25-26.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*. University of Bari (in press), ISBN 978-88-88793-97-9.

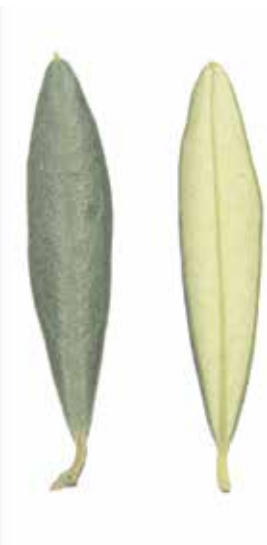
" Carbonchia "

(synonymy: Carboncella, Carbonella, etc.)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **medium (6,08 ± 0,38)**
Oil content (%): **medium (44,63 ± 1,50)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect-spreading**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium 5,28 ± 0,59)**
Blade width (cm): **medium (1,42 ± 0,22)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **short (2,42 ± 0,80)**
Number of flowers: **low (12,25 ± 1,00)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,02 ± 0,17)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,29 ± 0,04)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **high**

Biochemical Characters

Fatty Acid Composition

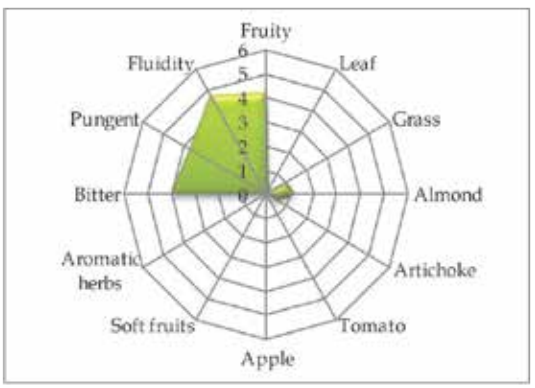
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**15,88 ± 0,25**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**16,00 ± 0,35**	Linolenic acid (ω3)	**0,84 ± 0,05**		
Palmitoleic acid	**2,65 ± 0,05**	Arachic acid	**0,29 ± 0,03**	Unsat./satured	**4,40 ± 0,10**
Stearic acid	**1,85 ± 0,08**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**19,04 ± 1,44**
Oleic acid	**59,86 ± 0,13**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond, read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 210	**181 - 185**	**212 - 218**	**214 - 214**	**124 - 124**	**150 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**177 - 193**	**154 - 205**	**213 - 213**	

References:
1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 28-29.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Cariasina "

(synonymy: Cariascinu, Cariasina di Dorgali, Cerasina, Ciriegia, etc.)

Areal distribution or origin area: **Sardegna**
Flesh/pit weight ratio: **medium (6,46 ± 1,11)**
Oil content (%): **low (41,48 ± 0,08)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **long (7,18 ± 0,72)**
Blade width (cm): **broad (1,57 ± 0,21)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,96 ± 0,24)**
Number of flowers: **low (15,62 ± 1,02)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,87 ± 1,60)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle:**absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (0,51 ± 0,17)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **truncate**
Surface: **rugose**
Number of grooves: **medium**

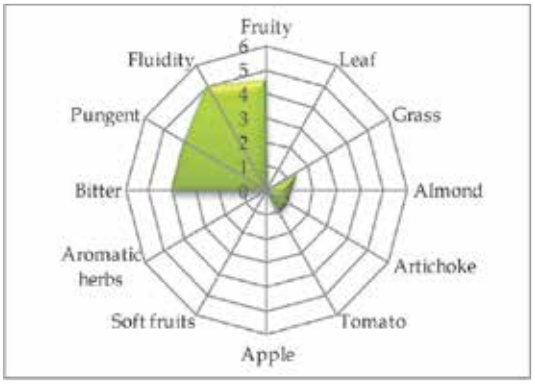
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**7,81 ± 0,85**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**12,32 ± 0,47**	Linolenic acid (ω3)	**0,80 ± 0,07**		
Palmitoleic acid	**0,92 ± 0,10**	Arachic acid	**0,25 ± 0,06**	Unsat./satured	**5,94 ± 0,29**
Stearic acid	**1,83 ± 0,05**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**9,74 ± 0,18**
Oleic acid	**75,28 ± 1,53**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of grass, almond and artichoke. Balanced taste sensation with a medium-light bitter and spicy. Medium-light fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 172	**179 - 181**	**214 - 214**	**214 - 218**	**130 - 144**	**136 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**143 - 143**	**166 - 193**	**150 - 161**	**205 - 205**	

References:

1 - Bandino G., Sedda P., Moro C., *et al.* In: *Atti 4° Convegno Nazionale sulla Biodiversità,* Alghero (2000), pp 243-246.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Carmelitana "

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (5,47 ± 0,01)**
Oil content (%): **medium (47,94 ± 2,47)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,23 ± 0,52)**
Blade width (cm): **broad (1,54 ± 0,16)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,56 ± 0,74)**
Number of flowers: **medium (15,90 ± 1,36)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,60 ± 0,82)**
Shape (length/width): **elongated**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **truncate**
Niplle: **obvious**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **very high (0,71 ± 0,08)**
Shape (length/width): **elongated**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

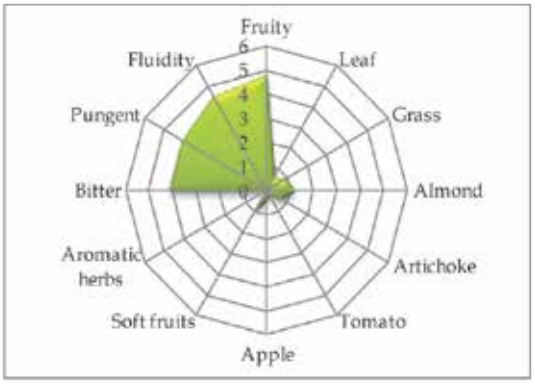
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**11,55 ± 0,10**	Lignoceric acid	**0,07 ± 0,01**
Palmitic acid	**14,87 ± 1,29**	Linolenic acid (ω3)	**0,46 ± 0,08**		
Palmitoleic acid	**1,72 ± 0,34**	Arachic acid	**0,52 ± 0,05**	Unsat./satured	**4,74 ± 0,35**
Stearic acid	**1,91 ± 0,03**	Eicosenoic acid	**0,41 ± 0,02**	ω6/ω3	**25,21 ± 4,05**
Oleic acid	**66,83 ± 0,38**	Behenic acid	**0,14 ± 0,06**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond, read sensations of grass, soft fruits, and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 198	**179 - 181**	**208 - 208**	**214 - 224**	**124 - 126**	**136 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**182 - 182**	**185 - 185**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 29-32.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Carolea "

(synonymy: Becco di Corvo, Borgese, Catanzarese, Cumignana, Olivona, etc.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **high (7,66 ± 1,16)**
Oil content (%): **hig (51,44 ± 1,52)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,46 ± 0,83)**
Blade width (cm): **medium (1,34 ± 0,14)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,56 ± 3,63)**
Number of flowers: **low (13,20 ± 4,30)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (5,41 ± 1,51)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Nipple: **obvious**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (0,62 ± 0,15)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

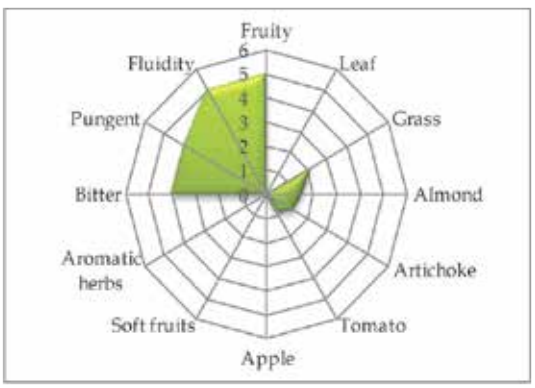
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**6,04 ± 0,35**	Lignoceric acid	**0,08 ± 0,03**
Palmitic acid	**14,83 ± 0,91**	Linolenic acid (ω3)	**0,46 ± 0,16**		
Palmitoleic acid	**1,70 ± 0,22**	Arachic acid	**0,40 ± 0,08**	Unsat./satured	**4,59 ± 0,26**
Stearic acid	**2,81 ± 0,46**	Eicosenoic acid	**0,20 ± 0,12**	ω6/ω3	**14.09 ± 3,85**
Oleic acid	**72,85 ± 0,70**	Behenic acid	**0,12 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **medium-high fruity, with good sensation of grass, less almond and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**179 - 185**	**212 - 222**	**214 - 214**	**121 - 130**	**136 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**154 - 205**	**200 - 200**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 3-4.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al. Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

" Carpinetana "

(synonymy: Femminina, Nebbio di montagna, Pizzutella, Posolella, etc.)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **medium (5,50 ± 0,27)**
Oil content (%): **medium (46,26 ± 1,37)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,02 ± 0,30)**
Blade width (cm): **medium (1,46 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,95 ± 0,18)**
Number of flowers: **medium (20,09 ± 1,82)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,57 ± 0,37)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **medium (0,55 ± 0,04)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

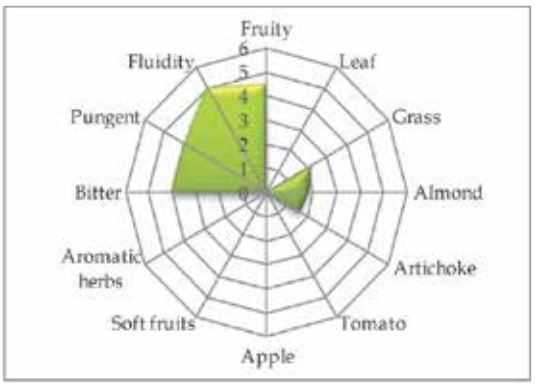
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,75 ± 1,04**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**11,64 ± 1,91**	Linolenic acid (ω3)	**0,93 ± 0,02**		
Palmitoleic acid	**0,74 ± 0,42**	Arachic acid	**0,32 ± 0,13**	Unsat./satured	**6,26 ± 0,87**
Stearic acid	**1,94 ± 0,21**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**12,57 ± 0,82**
Oleic acid	**72,14 ± 0,26**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-hight, with good sensation of grass, artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium-high intensity. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
166 - 206	**177 - 181**	**212 - 222**	**214 - 214**	**126 - 144**	**184 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 193**	**154 - 210**	**205 - 205**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 30-31.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 129-135.

" Castiglionese "

(synonymy: Dritta, Oliva di San Francesco)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **medium (5,88 ± 0,30)**
Oil content (%): **medium (40,21 ± 1,21)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,54 ± 0,54)**
Blade width (cm): **medium (1,30 ± 0,16)**
Shape (length/width): **elliptic - lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,57 ± 0,58)**
Number of flowers: **medium (18,86 ± 3,38)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,09 ± 0,09)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,31 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **high**

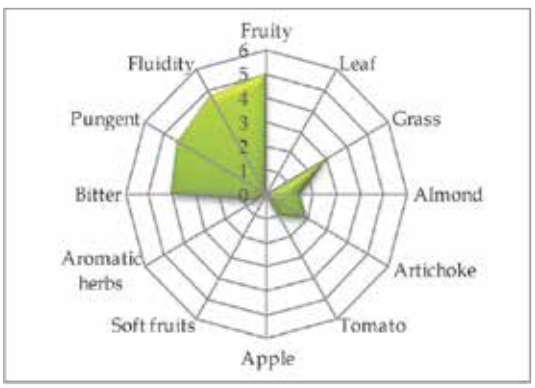
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,25 ± 0,38**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**0,02 ± 0,01**	Linolenic acid (ω3)	**0,80 ± 0,09**		
Palmitoleic acid	**1,51 ± 0,64**	Arachic acid	**0,30 ± 0,14**	Unsat./satured	**5,20 ± 0,01**
Stearic acid	**1,62 ± 0,04**	Eicosenoic acid	**0,44 ± 0,06**	ω6/ω3	**14,27 ± 2,13**
Oleic acid	**69,03 ± 0,24**	Behenic acid	**0,10 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of grass and artichoke, read sensations of almond. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**163 - 181**	**208 - 212**	**210 - 214**	**126 - 126**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**154 - 210**	**205 - 232**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 32-33.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

" Castricianella Rapparina "

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (6,66 ± 3,76)**
Oil content (%): **medium (46,10 ± 1,80)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect-spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,30 ± 0,55)**
Blade width (cm): **medium (1,27 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,94 ± 0,90)**
Number of flowers: **medium (21,32 ± 1,63)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,20 ± 0,90)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,30 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

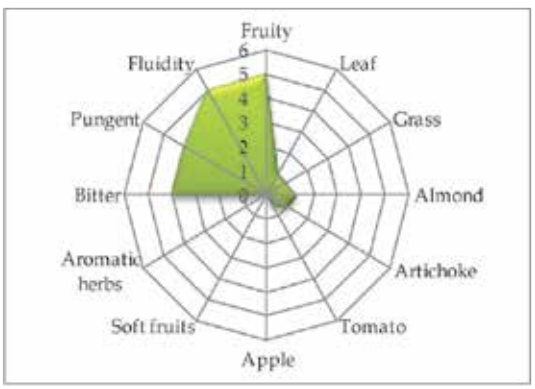
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**10,14 ± 0,15**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**13,44 ± 0,77**	Linolenic acid (ω3)	**0,62 ± 0,07**		
Palmitoleic acid	**1,45 ± 0,02**	Arachic acid	**0,24 ± 0,03**	Unsat./satured	**4,74 ± 0,10**
Stearic acid	**3,53 ± 0,51**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**16,46 ± 2,16**
Oleic acid	**68,87 ± 0,35**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**179 - 179**	**208 - 222**	**210 - 214**	**124 - 130**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 177**	**154 - 205**	**170 - 213**	

References:

1 - Lombardo N. In: *Le risorse genetiche vegetali presso gli* IRSA, MIPAF (2001), 1: pp. 361-405.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: 582-588.

" Cavalieri "

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (7,06 ± 1,59)**
Oil content (%): **medium (48,12 ± 1,37)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading-drooping**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,66 ± 0,44)**
Blade width (cm): **narrow (0,99 ± 0,12)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,72 ± 1,33)**
Number of flowers: **medium (18,04 ± 2,69)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,71 ± 0,26)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,34 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **tenuous**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

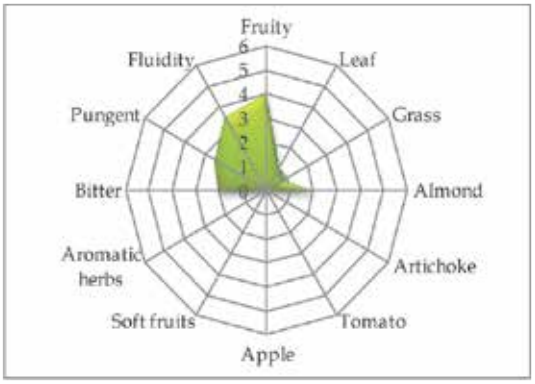
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**8,65 ± 0,71**	Lignoceric acid	**0,04 ± 0,01**
Palmitic acid	**12,60 ± 0,86**	Linolenic acid (ω3)	**0,89 ± 0,10**		
Palmitoleic acid	**1,78 ± 0,22**	Arachic acid	**0,30 ± 0,01**	Unsat./satured	**5,71± 0,41**
Stearic acid	**1,91 ± 0,07**	Eicosenoic acid	**0,02± 0,01**	ω6/ω3	**9,76 ± 0,33**
Oleic acid	**72,13 ± 0,22**	Behenic acid	**0,05 ± 0,05**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of almond. Balanced taste sensation with medium-light bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 162	**177 - 185**	**212 - 222**	**210 - 210**	**124 - 144**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 193**	**154 - 154**	**108 - 108**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 146-150.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Cazzinicchio "

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (5,69 ± 0,05)**
Oil content (%): **medium (43,83 ± 0,88)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,22 ± 1,66)**
Blade width (cm): **broad (1,66 ± 0,18)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,36 ± 0,67)**
Number of flowers: **medium (18,69 ± 3,71)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,34 ± 0,55)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **medium (0,42 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

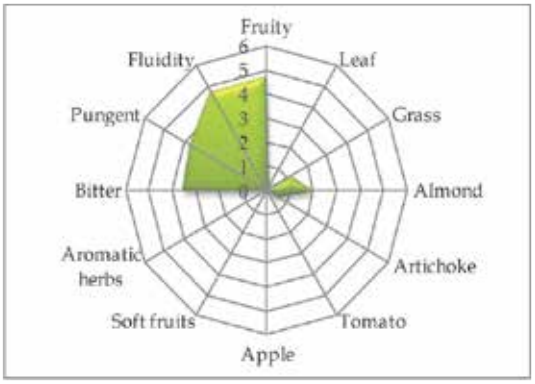
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**11,87 ± 1,25**	Lignoceric acid	**0,06 ± 0,00**
Palmitic acid	**12,50 ± 1,97**	Linolenic acid (ω3)	**0,93 ± 0,06**		
Palmitoleic acid	**3,14 ± 0,30**	Arachic acid	**0,52 ± 0,45**	Unsat./satured	**5,89 ± 0,86**
Stearic acid	**1,40 ± 0,03**	Eicosenoic acid	**0,35 ± 0,08**	ω6/ω3	**12,75 ± 0,57**
Oleic acid	**66,35 ± 1,98**	Behenic acid	**0,11 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 198	**181 - 181**	**212 - 212**	**210 - 214**	**124 - 126**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 193**	**143 - 205**	**108 - 205**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Istituto Sperimentale per l'Olivicoltura (2004), pp. 33-36.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Cellina di Nardo' "

(synonymy: Cafarella, Leccese, Oliva di Nardo', Saracena, Vosciola, etc.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **low (3,34 ± 0,01)**
Oil content (%): **low (36,23 ± 1,55)**
Purpose: **oil**

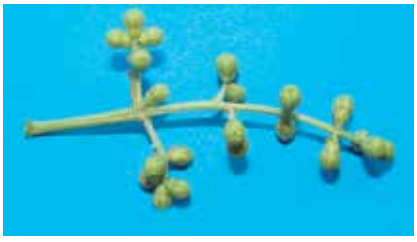
Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **erect-spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,36 ± 0,56)**
Blade width (cm): **broad (1,60 ± 0,25)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,40 ± 0,72)**
Number of flowers: **medium (17,83 ± 2,52)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,39 ± 0,35)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **few and small**



Pit characters
Weight of 100 pits (g): **medium (0,32 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

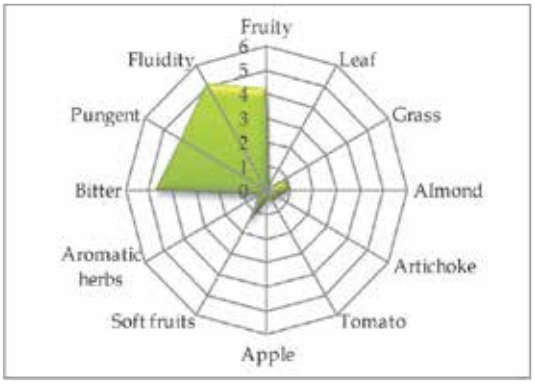
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,36 ± 1,04**	Lignoceric acid	**0,04 ± 0,02**
Palmitic acid	**12,96 ± 1,22**	Linolenic acid (ω3)	**0,91 ± 0,09**		
Palmitoleic acid	**1,53 ± 0,13**	Arachic acid	**0,30 ± 0,06**	Unsat./satured	**5,49 ± 0,40**
Stearic acid	**2,04 ± 0,32**	Eicosenoic acid	**0,14 ± 0,14**	ω6/ω3	**11,41 ± 0,23**
Oleic acid	**70,22 ± 2,01**	Behenic acid	**0,07 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of soft fruits and read sensations of almond, grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 198	**177 - 177**	**208 - 222**	**214 - 228**	**124 - 126**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 166**	**182 - 205**	**108 - 213**	

References:
1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasmaolivicolo pugliese*, Ist. Sper. Olivic. (2004), pp. 41-44.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Cellina di Rotello "

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **low (3,05 ± 0,18)**
Oil content (%): **low (37,04 ± 1,32)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,59 ± 0,45)**
Blade width (cm): **broad (1,58 ± 0,11)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,76 ± 0,99)**
Number of flowers: **medium (18,49 ± 1,85)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,49 ± 0,11)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,61 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **tenuous**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

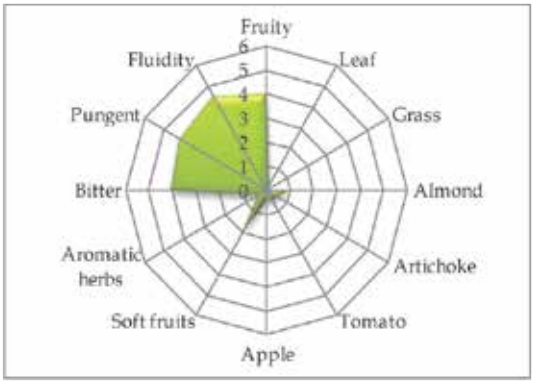
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**13,89 ± 1,06**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**15,94 ± 1,15**	Linolenic acid (ω3)	**0,97 ± 0,05**		
Palmitoleic acid	**1,61 ± 0,03**	Arachic acid	**0,26 ± 0,04**	Unsat./satured	**4,50 ± 0,33**
Stearic acid	**1,77 ± 0,01**	Eicosenoic acid	**0,03 ± 0,02**	ω6/ω3	**14,25 ± 0,40**
Oleic acid	**63,82 ± 0,63**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of soft fruits and read sensations of almond and tomato. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 206	**177 - 181**	**222 - 222**	**210 - 214**	**124 - 126**	**150 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**202 - 202**	**177 - 193**	**154 - 210**	**170 - 213**	

References:

1 - Ente regionale di sviluppo agricolo per il Molise. In: *Il germoplasma dell'olivo nel Molise*, Quaderno divulgativo dell'ERSA (2000), n° 5.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 129-135.

" Cerasuola "

(synonymy: Allora, Cerasara, Grappusa, Nocellara, Ogliarola, Ugghiara, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (8,27 ± 0,20)**
Oil content (%): **medium (47,89 ± 1,15)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,13 ± 0,64)**
Blade width (cm): **medium (1,48 ± 0,16)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,26 ± 0,57)**
Number of flowers: **low (16,28 ± 1,45)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,10 ± 0,16)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,35 ± 0,00)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **high**

Biochemical Characters

Fatty Acid Composition

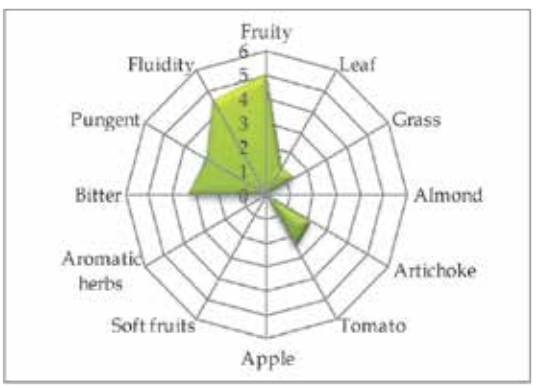
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,83 ± 0,31**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**10,60 ± 2,01**	Linolenic acid (ω3)	**0,99 ± 0,12**		
Palmitoleic acid	**0,54 ± 0,30**	Arachic acid	**0,28 ± 0,01**	Unsat./satured	**6,77 ± 1,24**
Stearic acid	**2,13 ± 0,03**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**10,99 ± 1,63**
Oleic acid	**73,92 ± 2,76**	Behenic acid	**0,08 ± 0,00**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity high, with taste of artichoke and tomato, read sensations of grass and leaves. Balanced taste sensation with a intense bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 206	**177 - 181**	**208 - 212**	**210 - 214**	**124 - 144**	**150 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 166**	**154 - 154**	**213 - 213**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università di Palermo (2007), pp. 36–40.

2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Ciciariello "

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **low (4,18 ± 0,52)**
Oil content (%): **medium (44,94 ± 3,51)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,16 ± 0,46)**
Blade width (cm): **medium (1,16 ± 0,17)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,64 ± 0,26)**
Number of flowers: **medium (20,39 ± 2,77)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,86 ± 0,46)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,36 ± 0,07)**
Shape (length/width): **ovoid**
Mucron: **tenuous**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

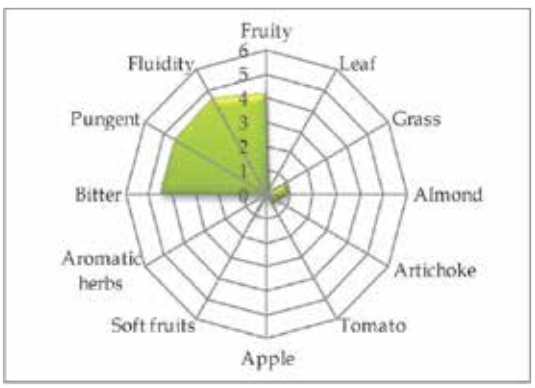
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**5,61 ± 0,66**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**11,99 ± 0,64**	Linolenic acid (ω3)	**0,70 ± 0,05**		
Palmitoleic acid	**1,00 ± 0,20**	Arachic acid	**0,41 ± 0,05**	Unsat./satured	**5,74 ± 0,29**
Stearic acid	**2,40 ± 0,13**	Eicosenoic acid	**0,15 ± 0,16**	ω6/ω3	**7,91 ± 0,98**
Oleic acid	**76,84 ± 1,39**	Behenic acid	**0,12 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of almond, grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 198	**177 - 177**	**212 - 212**	**212 - 212**	**124 - 124**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 193**	**143 - 143**	**205 - 205**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 20.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Cima di Melfi "

Areal distribution or origin area: **Basilicata**
Flesh/pit weight ratio: **medium (5,55 ± 1,14)**
Oil content (%): **medium (42,84 ± 2,01)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,08 ± 0,59)**
Blade width (cm): **medium (1,49 ± 0,17)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,24 ± 0,53)**
Number of flowers: **low (14,53 ± 2,35)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,60 ± 0,33)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,42 ± 0,08)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

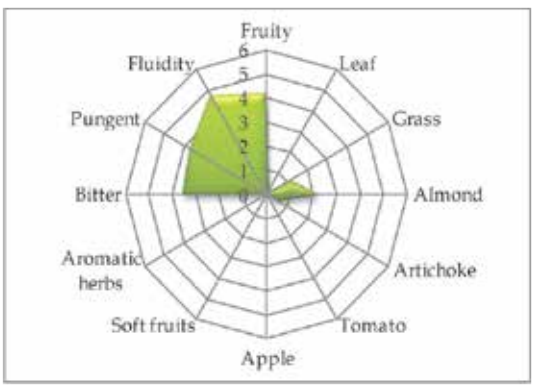
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**7,06 ± 0,01**	Lignoceric acid	**0,06 ± 0,02**
Palmitic acid	**12,25 ± 1,19**	Linolenic acid (ω3)	**0,76 ± 0,00**		
Palmitoleic acid	**0,53 ± 0,46**	Arachic acid	**0,35 ± 0,14**	Unsat./satured	**5,70 ± 0,36**
Stearic acid	**2,17 ± 0,46**	Eicosenoic acid	**0,28 ± 0,15**	ω6/ω3	**9,29 ± 1,20**
Oleic acid	**76,15 ± 0,82**	Behenic acid	**0,09 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium - light bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 194	**181 - 181**	**212 - 222**	**210 - 224**	**124 - 144**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**154 - 210**	**170 - 213**	

References:

1 - Rotundo A., Marone E. In: *Il germoplasma olivicolo lucano*, Olita-Potenza (2002), pp. 99-102.
2 - Rotundo A., Perri E.,Muzzalupo I., *et al.* In: *Il germoplasma olivicolo meridionale*, (2012 in press).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Colombina "

(synonymy: Colombina 17, Colombina lunga.)

Areal distribution or origin area: **Emilia**
Flesh/pit weight ratio: **medium (5,60 ± 0,43)**
Oil content (%): **low (35,63 ± 0,99)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,78 ± 0,46)**
Blade width (cm): **medium (1,40 ± 0,17)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,12 ± 1,13)**
Number of flowers: **medium (18,97 ± 1,19)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,05 ± 0,25)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,31 ± 0,02)**
Shape (length/width): **elongated**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

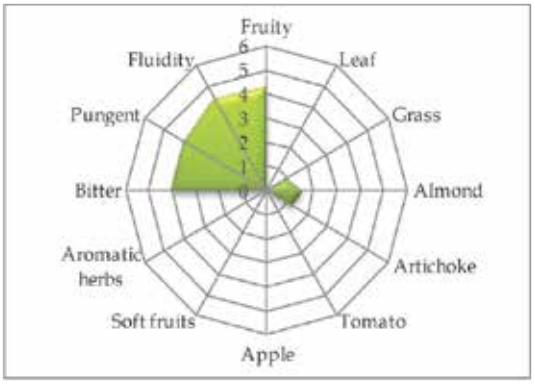
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,38 ± 0,13**	Lignoceric acid	0,04 **± 0,02**
Palmitic acid	**10,73 ± 0,35**	Linolenic acid (ω3)	**0,96 ± 0,02**		
Palmitoleic acid	**0,39 ± 0,09**	Arachic acid	**0,26 ± 0,04**	Unsat./satured	**6,84 ± 0,18**
Stearic acid	**1,76 ± 0,17**	Eicosenoic acid	**0,28 ± 0,22**	ω6/ω3	**10,81 ± 0,15**
Oleic acid	**74,85 ± 0,68**	Behenic acid	**0,09 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and artichoke, read sensations of grass. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 206	**179 - 179**	**212 - 222**	**218 - 224**	**144 - 144**	**184 - 203**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**166 - 193**	**182 - 182**	**213 - 213**	

References:

1 - Cristoferi G., Rotondi A., Magli M. In: *Il germoplasma dell'olivo in Emilia Romagna*, ISTEA CNR (1997).
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Coratina "

(synonymy: Cima di Corato, Olivo a grappoli, Racemo, Racioppa, etc.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (3,95 ± 0,05)**
Oil content (%): **high (50,48 ± 2,81)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,24 ± 0,59)**
Blade width (cm): **medium (1,33 ± 0,20)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,04 ± 0,59)**
Number of flowers: **medium (17,19 ± 1,75)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,05 ± 0,60)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,63 ± 0,08)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **high**

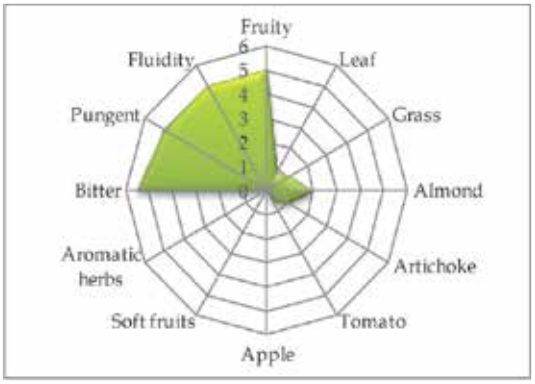
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**7,72 ± 1,60**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**10,88 ± 2,26**	Linolenic acid (ω3)	**0,81 ± 0,11**		
Palmitoleic acid	**0,55 ± 0,29**	Arachic acid	**0,34 ± 0,10**	Unsat./satured	**6,72 ± 1,32**
Stearic acid	**2,08 ± 0,33**	Eicosenoic acid	**0,21 ± 0,18**	ω6/ω3	**9,67 ± 1,15**
Oleic acid	**77,14 ± 0,08**	Behenic acid	**0,11 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 194	**181 - 181**	**212 - 212**	**210 - 224**	**124 - 144**	**136 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 166**	**166 - 193**	**143 - 210**	**170 - 170**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Istituto Sperimentale per l'Olivicoltura, (2004), pp. 45-48.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Corneglia "

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **low (4,83 ± 0,65)**
Oil content (%): **medium (42,95 ± 0,29)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,72 ± 0,43)**
Blade width (cm): **medium (1,47 ± 0,13)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,12 ± 1,56)**
Number of flowers: **low (16,31 ± 1,54)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,27 ± 0,12)**
Shape (length/width): **elongated**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,57 ± 0,05)**
Shape (length/width): **elongated**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

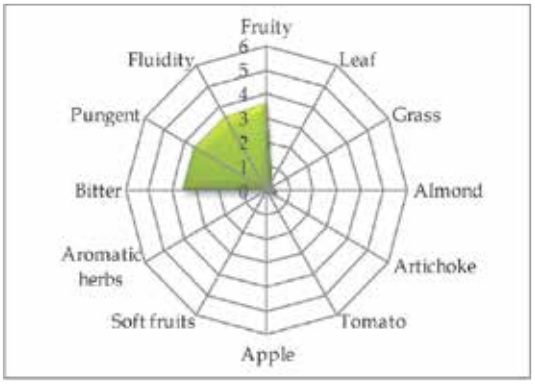
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**8,83 ± 0,55**	Lignoceric acid	**0,07 ± 0,03**
Palmitic acid	**14,42 ± 0,25**	Linolenic acid (ω3)	**0,77 ± 0,05**		
Palmitoleic acid	**1,45 ± 0,17**	Arachic acid	**0,49 ± 0,06**	Unsat./satured	**4,45 ± 0,01**
Stearic acid	**3,29 ± 0,21**	Eicosenoic acid	**0,11 ± 0,14**	ω6/ω3	**11,50 ± 0,04**
Oleic acid	**69,09 ± 0,52**	Behenic acid	**0,13 ± 0,03**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of almond and leaves. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 198	**181 - 181**	**218 - 222**	**214 - 224**	**126 - 126**	**136 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 177**	**154 - 182**	**213 - 220**	

References:
1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Cornia "

(synonymy: Corniola)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **low (3,06 ± 0,05)**
Oil content (%): **medium (42,70 ± 0,13)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (6,48 ± 0,56)**
Blade width (cm): **medium (1,42 ± 0,17)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,80 ± 2,50)**
Number of flowers: **low (10,34 ± 1,32)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,19 ± 0,38)**
Shape (length/width): **elongated**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **basente**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,41 ± 0,09)**
Shape (length/width): **elliptic**
Mucron: **tenuous**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

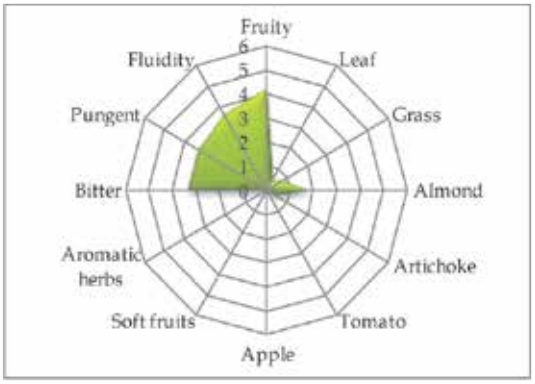
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**3,81 ± 0,40**	Lignoceric acid	**0,05 ± 0,02**
Palmitic acid	**11,89 ± 0,56**	Linolenic acid (ω3)	**0,89 ± 0,06**		
Palmitoleic acid	**1,54 ± 0,22**	Arachic acid	**0,35 ± 0,19**	Unsat./satured	**6,24 ± 0,29**
Stearic acid	**1,50 ± 0,19**	Eicosenoic acid	**0,25 ± 0,20**	ω6/ω3	**4,29 ± 0,27**
Oleic acid	**78,32 ± 1,26**	Behenic acid	**0,08 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 198	**181 - 181**	**214 - 218**	**218 - 218**	**130 - 134**	**184 - 197**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**164 - 177**	**143 - 154**	**164 - 213**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Corniola "

(synonymy: Cornale, Corniola Villapiana, Farisana, etc.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **medium (5,65 ± 0,50)**
Oil content (%): **medium (44,12 ± 1,25)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,25 ± 0,43)**
Blade width (cm): **medium (1,28 ± 0,09)**
Shape (blade length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,52 ± 1,22)**
Number of flowers: **medium (18,24 ± 1,96)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,83 ± 0,28)**
Shape (length/width): **elongated**
Position of maximum transverse diameter: **towards apex**
Symmetry: **asymmetric**
Apex: **rounded**
Base: **rounded**
Nipple: **tenuous**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **medium (0,42 ± 0,07)**
Shape (length/width): **elongated**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

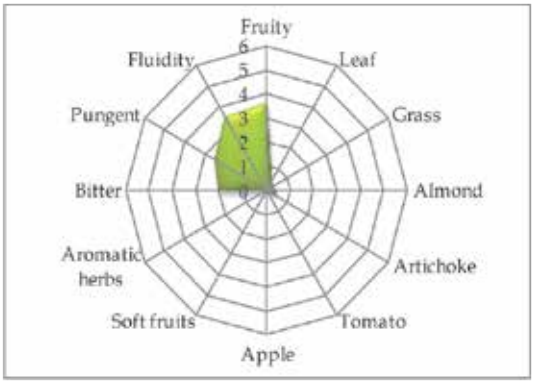
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,00 ± 0.00**	Linoleic acid (ω6)	**18,40 ± 1,46**	Lignoceric acid	**0,08 ± 0,01**
Palmitic acid	**20,52 ± 1,14**	Linolenic acid (ω3)	**0,80 ± 0,07**		
Palmitoleic acid	**2,79 ± 0,48**	Arachic acid	**0,37 ± 0,06**	Unsat./satured	**3,34 ± 0,19**
Stearic acid	**2,25 ± 0,13**	Eicosenoic acid	**0,23 ± 0,05**	ω6/ω3	**23,26 ± 3,85**
Oleic acid	**55,65 ± 2,79**	Behenic acid	**0,11 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond. Balanced taste sensation with a medium-light bitter and medium-high spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**177 - 179**	**208 - 212**	**212 - 212**	**124 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 193**	**143 - 205**	**200 - 200**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 20.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: 582-588.

" Corniolo "

(synonymy: Corgniola, Corgnolo, Coriola, Cornigliola, etc.)

Areal distribution or origin area: **Umbria**
Flesh/pit weight ratio: **medium (5,33 ± 1,17)**
Oil content (%): **medium (43,61 ± 0,88)**
Purpose: **oil**

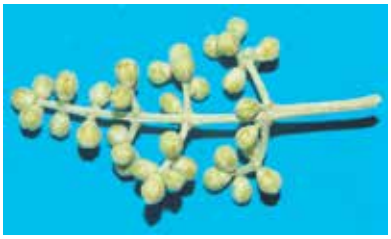
Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,04 ± 0,46)**
Blade width (cm): **medium (1,42 ± 0,16)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (4,05 ± 1,08)**
Number of flowers: **high (30,24 ± 1,44)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,23 ± 0,35)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**



Pit characters
Weight of 100 pits (g): **medium (0,36 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

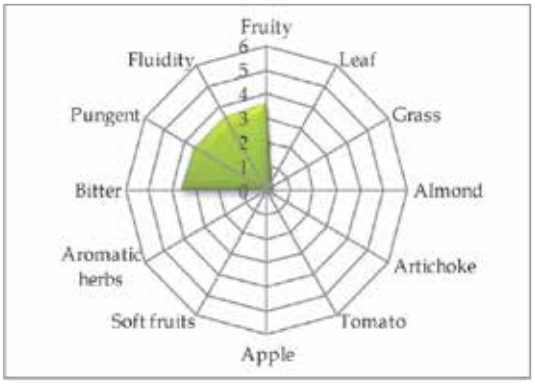
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,19 ± 0,29**	Lignoceric acid	**0,04 ± 0,03**
Palmitic acid	**14,85 ± 0,85**	Linolenic acid (ω3)	**0,37 ± 0,02**		
Palmitoleic acid	**1,09 ± 0,26**	Arachic acid	**0,43 ± 0,28**	Unsat./satured	**4,87 ± 0,15**
Stearic acid	**1,78 ± 0,32**	Eicosenoic acid	**0,19 ± 0,25**	ω6/ω3	**27,95 ± 0,82**
Oleic acid	**70,09 ± 0,90**	Behenic acid	**0,08 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond, leaf, and artichoke. Balanced taste sensation with a medium bitter and medium-high spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**179 - 181**	**214 - 222**	**214 - 214**	**130 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 143**	**177 - 193**	**161 - 205**	**205 - 205**	

References:

1 - Lombardo N. In: *Le risorse genetiche vegetali presso gli* IRSA, MIPAF (2001), 1: pp. 361-405.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Coroncina "

(synonymy: Corallina, Corona, Coronella, ect.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **medium (5,57 ± 0,33)**
Oil content (%): **medium (44,34 ± 1,96)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,88 ± 0,47)**
Blade width (cm): **medium (1,44 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,23 ± 1,41)**
Number of flowers: **medium (24,79 ± 0,88)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,01 ± 0,19)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,52 ± 0,06)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

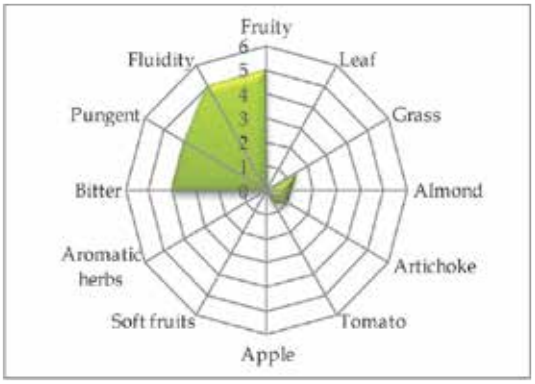
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,00 ± 0,00**	Linoleic acid (ω6)	**9,89 ± 0,10**	Lignoceric acid	**0,06 ± 0,05**
Palmitic acid	**14,09 ± 0,17**	Linolenic acid (ω3)	**0,91 ± 0,03**		
Palmitoleic acid	**0,92 ± 0,02**	Arachic acid	**0,40 ± 0,23**	Unsat./satured	**4,93 ± 0,12**
Stearic acid	**2,25 ± 0,30**	Eicosenoic acid	**0,21 ± 0,26**	ω6/ω3	**10,84 ± 0,49**
Oleic acid	**70,06 ± 0,71**	Behenic acid	**0,12 ± 0,08**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of grass, almond and artichoke. Balanced taste sensation with a medium-light bitter and spicy. Medium-light fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 194	**181 - 185**	**212 - 222**	**212 - 214**	**130 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**135 - 135**	**177 - 193**	**161 - 182**	**200 - 200**	

References:
1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche.* ASSAM (2001), pp. 37-40.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.

" Corsicana da olio "

Areal distribution or origin area: **Sardegna**
Flesh/pit weight ratio: **low (4,29 ± 0,08)**
Oil content (%): **medium (44,35 ± 3,34)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreadinf-erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,02 ± 0,46)**
Blade width (cm): **medium (1,44 ± 0,20)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,55 ± 0,43)**
Number of flowers: **low (17,55 ± 1,72)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,65 ± 0,06)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,51 ± 0,01)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

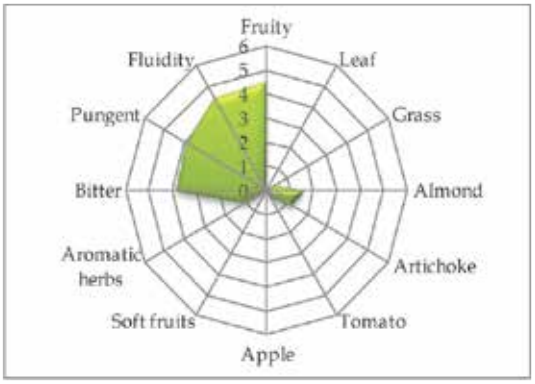
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**9,58 ± 0,36**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**12,92 ± 0,15**	Linolenic acid (ω3)	**0,56 ± 0,23**		
Palmitoleic acid	**0,70 ± 0,03**	Arachic acid	**0,25 ± 0,06**	Unsat./satured	**5,26 ± 0,05**
Stearic acid	**2,83 ± 0,09**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**12,76 ± 0,21**
Oleic acid	**72,38 ± 0,33**	Behenic acid	**0,06 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of almond, read sensations of artichoke and aromatic herbs. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 198	**181 - 185**	**212 - 222**	**214 - 224**	**126 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**143 - 143**	**177 - 182**	**182 - 210**	**185 - 185**	

References:

1 - Bandino G., Sedda P., Moro C., *et al*. In: *Atti Convegno Nazionale Biodiversità*, Ed. Delfino (2000), pp. 243-246.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Crognalegna "

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **low (4,84 ± 0,09)**
Oil content (%): **medium (44,16 ± 2,09)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **short (4,45 ± 0,38)**
Blade width (cm): **medium (1,16 ± 0,14)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,06 ± 0,97)**
Number of flowers: **medium (16,54 ± 2,23)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,37 ± 0,61)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,42 ± 0,13)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Simmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **high**

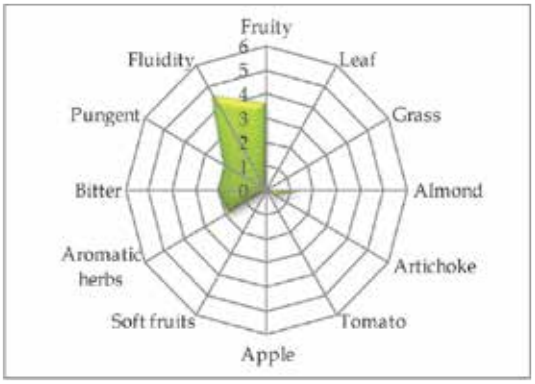
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**12,38 ± 0,42**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**12,46 ± 0,23**	Linolenic acid (ω3)	**0,63 ± 0,04**		
Palmitoleic acid	**1,12 ± 0,17**	Arachic acid	**0,10 ± 0,03**	Unsat./satured	**5,89 ± 0,09**
Stearic acid	**1,85 ± 0,09**	Eicosenoic acid	**0,04 ± 0,01**	ω6/ω3	**19,65 ± 0,59**
Oleic acid	**70,60 ± 0,35**	Behenic acid	**0,02 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-light, with taste of artichoke and aromatic herbs, read sensations of almond. Balanced taste sensation with medium-light bitter and spicy. Medium -high.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 198	**179 - 181**	**214 - 222**	**218– 224**	**124 - 144**	**157 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**150 - 150**	**177 - 182**	**182 - 210**	**164 - 164**	

References:
1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 32-33.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Cucca "

(synonymy: Cucco, Oliva da indolcire, Olivone etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **low (4,22 ± 0,40)**
Oil content (%): **low (37,51± 0,08)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,13 ± 0,82)**
Blade width (cm): **medium (1,23 ± 0,17)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,93 ± 2,81)**
Number of flowers: **medium (17,95 ± 2,10)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,51± 0,29)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,45 ± 0,13)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

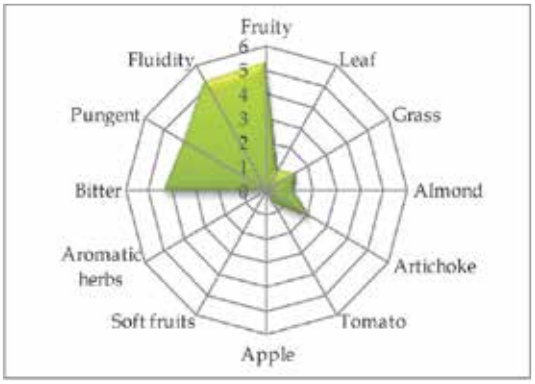
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**4,16 ± 0,26**	Lignoceric acid	**0,05 ± 0,01**
Palmitic acid	**11,73 ± 0,34**	Linolenic acid (ω3)	**0,99 ± 0,01**		
Palmitoleic acid	**1,67 ± 0,07**	Arachic acid	**0,32 ± 0,00**	Unsat./satured	**6,32 ± 0,16**
Stearic acid	**1,66 ± 0,06**	Eicosenoic acid	**0,03 ± 0,00**	ω6/ω3	**4,18 ± 0,23**
Oleic acid	**80,15 ± 0,04**	Behenic acid	**0,09 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of artichoke and read sensations of grass and almond. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**179 - 181**	**208 - 212**	**214 - 214**	**124 - 144**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 193**	**182 - 182**	**213 - 213**	

References:

1 - Cimato A., Cantini C., Sani G. In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Dolce Agogia "

(synonymy: Agogia, Dolce, Nerello, Olivella.)

Areal distribution or origin area: **Umbria**
Flesh/pit weight ratio: **low (4,98 ± 0,06)**
Oil content (%): **medium (44,30 ± 1,80)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,95 ± 0,55)**
Blade width (cm): **medium(1,21 ± 0,10)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,90 ± 1,50)**
Number of flowers: **low (15,36 ± 1,30)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,12 ± 0,28)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,32 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **high**

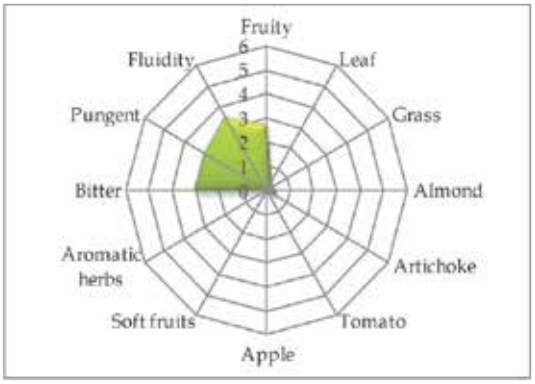
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,00 ± 0,00**	Linoleic acid (ω6)	**7,26 ± 0,26**	Lignoceric acid	**0,05 ± 0,02**
Palmitic acid	**12,33 ± 0,33**	Linolenic acid (ω3)	**0,77 ± 0,03**		
Palmitoleic acid	**1,84 ± 0,27**	Arachic acid	**0,27 ± 0,02**	Unsat./satured	**5,82 ± 0,09**
Stearic acid	**1,82 ± 0,39**	Eicosenoic acid	**0,10 ± 0,12**	ω6/ω3	**9,43 ± 0,02**
Oleic acid	**73,55 ± 1,31**	Behenic acid	**0,08 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and leaves. Balanced taste sensation with a medium bitter and medium-light spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**179 - 181**	**212 - 218**	**218 - 218**	**124 - 124**	**184 - 197**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**177 - 193**	**143 - 143**	**185 - 213**	

References:

1 - Pannelli G., Alfei B., Rosati S., *et al.* In: *Varietà di olivo in Umbria.* Ed. Pliniana (2000), pp.13-18.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.

" Dolce d'Andria "

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (6,62 ± 1,29)**
Oil content (%): **low (36,97 ± 0,08)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,76 ± 0,73)**
Blade width (cm): **medium (1,49 ± 0,32)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,60 ± 2,40)**
Number of flowers: **low (15,20 ± 0,78)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,86 ± 0,33)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,52 ± 0,13)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

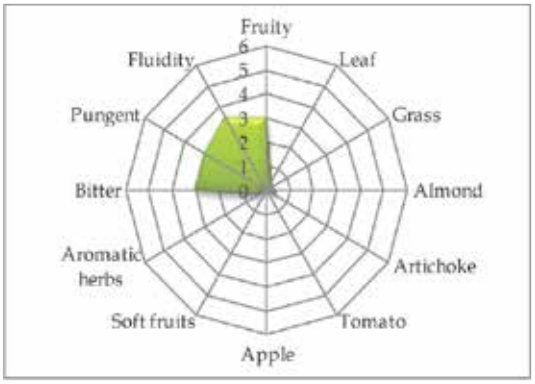
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,69 ± 0,57**	Lignoceric acid	**0,08 ± 0,08**
Palmitic acid	**17,92 ± 1,15**	Linolenic acid (ω3)	**0,93 ± 0,07**		
Palmitoleic acid	**5,44 ± 0,08**	Arachic acid	**0,21 ± 0,11**	Unsat./satured	**3,87 ± 0,38**
Stearic acid	**1,24 ± 0,10**	Eicosenoic acid	**0,18 ± 0,22**	ω6/ω3	**11,52 ± 0,23**
Oleic acid	**57,70 ± 2,24**	Behenic acid	**0,10 ± 0,06**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and leaves. Balanced taste sensation with a medium bitter and medium-light spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 194	**177 - 177**	**208 - 218**	**214 - 214**	**124 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 182**	**143 - 205**	**108 - 170**	

References:

1 - Russo G. In: *Atti Convegno Nazionale di Olivicoltura*, Ist. Sper. Olivic. Spoleto (2002), pp. 423-426.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Dolce di Cassano "

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (5,18 ± 0,03)**
Oil content (%): **medium (42,33 ± 1,71)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,63 ± 0,55)**
Blade width (cm): **broad (1,87 ± 0,25)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **short (1,98 ± 0,34)**
Number of flowers: **low (11,86 ± 0,91)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,50 ± 0,63)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **very hygh (0,73 ± 0,08)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

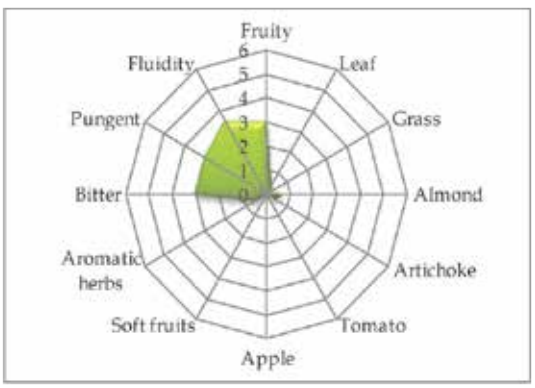
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**14,35 ± 1,15**	Lignoceric acid	**0,01 ± 0,00**
Palmitic acid	**9,47 ± 1,69**	Linolenic acid (ω3)	**0,67 ± 0,03**		
Palmitoleic acid	**0,60 ± 0,05**	Arachic acid	**0,08 ± 0,09**	Unsat./satured	**8,54 ± 1,32**
Stearic acid	**0,95 ± 0,23**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**21,47 ± 2,63**
Oleic acid	**73,13 ± 2,46**	Behenic acid	**0,03 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of almond and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**181 - 181**	**208 - 208**	**214 - 224**	**130 - 130**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 177**	**182 - 205**	**108 - 170**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 49-52.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Dolce di Rossano "

(synonymy: Dolce, Rossanese, etc.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **high (5,20 ± 0,29)**
Oil content (%): **medium (48,50 ± 0,53)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,41 ± 0,54)**
Blade width (cm): **medium (1,37 ± 0,17)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,98 ± 1,78)**
Number of flowers: **medium (22,11 ± 5,65)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,93 ± 0,33)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,30 ± 0,04)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

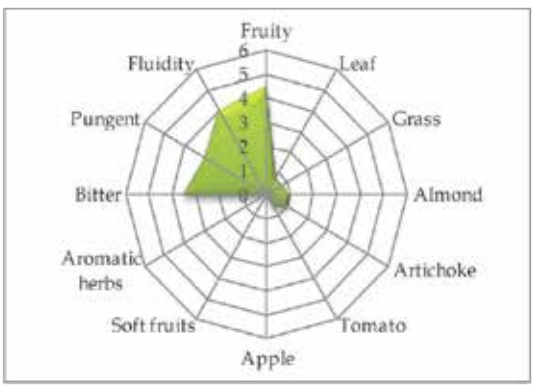
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,32 ± 1,66**	Lignoceric acid	**0,06 ± 0,03**
Palmitic acid	**15,33 ± 1,77**	Linolenic acid (ω3)	**0,69 ± 0,18**		
Palmitoleic acid	**1,50 ± 0,44**	Arachic acid	**0,32 ± 0,08**	Unsat./satured	**4,69 ± 0,86**
Stearic acid	**2,08 ± 0,32**	Eicosenoic acid	**0,15 ± 0,12**	ω6/ω3	**12,99 ± 3,92**
Oleic acid	**71,20 ± 3,06**	Behenic acid	**0,09 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**177 - 179**	**212 - 212**	**214 - 214**	**130 - 144**	**150 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 177**	**154 - 182**	**205 - 205**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp. 5-6.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Dritta "

(synonymy: Dolce San Felice, Dritta di Loreto, Dritta di Moscufo, San Felice, etc.)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **high (7,77 ± 0,44)**
Oil content (%): **medium (47,49 ± 3,03)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreding**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,60 ± 0,63)**
Blade width (cm): **medium (1,35 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,95 ± 0,73)**
Number of flowers: **low (16,14 ± 1,18)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,27 ± 0,04)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,31 ± 0,07)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

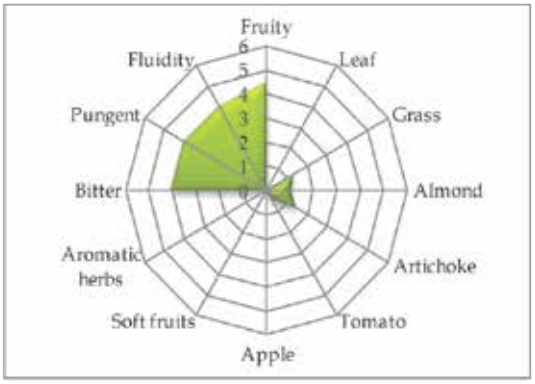
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,26 ± 0,06**	Lignoceric acid	**0,07 ± 0,08**
Palmitic acid	**13,88 ± 1,19**	Linolenic acid (ω3)	**0,64 ± 0,02**		
Palmitoleic acid	**1,12 ± 0,03**	Arachic acid	**0,03 ± 0,03**	Unsat./satured	**5,13 ± 0,26**
Stearic acid	**2,61 ± 0,03**	Eicosenoic acid	**0,08 ± 0,09**	ω6/ω3	**14,17 ± 0,59**
Oleic acid	**71,61 ± 0,03**	Behenic acid	**0,09 ± 0,11**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of grass and artichoke, read sensations of almond. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 176	**169 - 179**	**208 - 212**	**214 - 214**	**124 - 130**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 193**	**182 - 182**	**220 - 220**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 38-39.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Erbano "

(synonymy: Ebanu, Erbanu.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **low (3,73 ± 0,10)**
Oil content (%): **low (41,36 ± 0,04)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,72 ± 0,64)**
Blade width (cm): **medium (1,31 ± 0,20)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,57 ± 1,83)**
Number of flowers: **low (17,66 ± 2,40)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,97 ± 0,22)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,40 ± 0,01)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

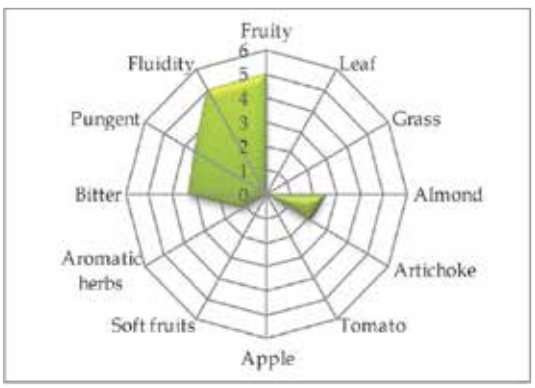
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**73,04 ± 0,08**	Lignoceric acid	**0,06 ± 0,02**
Palmitic acid	**11,67 ± 0,45**	Linolenic acid (ω3)	**9,15 ± 0,25**		
Palmitoleic acid	**1,25 ± 0,01**	Arachic acid	**0,82 ± 0,08**	Unsat./satured	**6,08 ± 0,23**
Stearic acid	**1,95 ± 0,08**	Eicosenoic acid	**0,31 ± 0,08**	ω6/ω3	**11,23 ± 1,47**
Oleic acid	**±**	Behenic acid	**0,37 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of almond and artichoke, with read sensations of aromatic herbs. Balanced taste sensation with medium bitter and spicy. Medium-high.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**173 - 177**	**212 - 212**	**210 - 212**	**124 - 144**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**177 - 193**	**182 - 182**	**108 - 108**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 152-156.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Faresana "

(synonymy: Baresana, Cellara, Farasano, Pierasana, Varesana etc.)

Areal distribution or origin area: **Basilicata**
Flesh/pit weight ratio: **medium (5,59 ± 0,28)**
Oil content (%): **medium (40,87 ± 1,49)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,44 ± 0,50)**
Blade width (cm): **medium (1,45 ± 0,17)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (4,41 ± 1,70)**
Number of flowers: **medium (21,79 ± 1,64)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,64 ± 1,04)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **large and few**

Pit characters
Weight of 100 pits (g): **high (0,59 ± 0,05)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

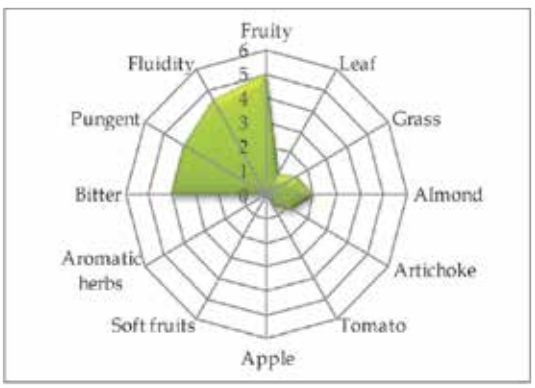
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,86 ± 2,58**	Lignoceric acid	**0,04 ± 0,02**
Palmitic acid	**10,40 ± 0,30**	Linolenic acid (ω3)	**0,96 ± 0,09**		
Palmitoleic acid	**0,63 ± 0,05**	Arachic acid	**0,07 ± 0,02**	Unsat./satured	**6,98 ± 0,06**
Stearic acid	**1,78 ± 0,20**	Eicosenoic acid	**0,17 ± 0,22**	ω6/ω3	**9,38 ± 3,53**
Oleic acid	**75,68 ± 2,35**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 182	**179 - 181**	**212 - 212**	**214 - 214**	**124 - 126**	**159 - 1184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**166 - 177**	**150 - 150**	**205 - 205**	

References:
1 - Rotundo A., Marone E. In: *Il germoplasma olivicolo lucano*, Olita-Potenza (2002), pp. 81-84.
2 - Rotundo A., Perri E.,Muzzalupo I., *et al.* In: *Il germoplasma olivicolo meridionale*, (2012 in press).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Favarol "

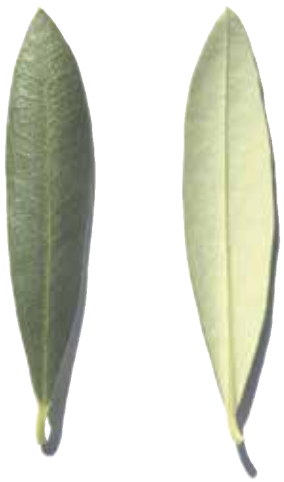
(synonymy: Favar, Favera, Perlarol, etc.)

Areal distribution or origin area: **Veneto**
Flesh/pit weight ratio: **low (4,95 ± 0,75)**
Oil content (%): **medium (49,05 ± 1,07)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **erect-spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **short (4,71 ± 0,25)**
Blade width (cm): **medium (1,40 ± 0,11)**
Shape (length/width): **elliptic**



Inflorescence characters
Inflorescence length (cm): **medium (3,39 ± 0,41)**
Number of flowers: **medium (23,17 ± 1,45)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,20 ± 0,33)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,37 ± 0,03)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

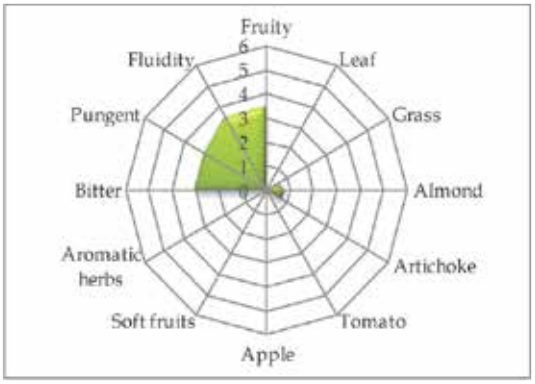
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,36 ± 0,99**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**13,02 ± 0,89**	Linolenic acid (ω3)	**0,76 ± 0,05**		
Palmitoleic acid	**0,94 ± 0,20**	Arachic acid	**0,29 ± 0,05**	Unsat./satured	**5,40 ± 0,53**
Stearic acid	**2,30 ± 0,45**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**12,42 ± 2,18**
Oleic acid	**72,30 ± 1,73**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of artichoke and almond. Balanced in flavors, with hints of bitter and spicy medium intensity. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**177 - 177**	**208 - 208**	**214 - 214**	**126 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**166 - 177**	**154 - 210**	**185 - 185**	

References:

1 - Carocci Buzi C. In: *Annali Istituto Sperimentale per l'Olivicoltura e l'Oleificio*, Ed. Bracco Imperia (1965), pp. 1-31.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Fecciaro "

(synonymy: Pallottona, Raggio bastardo, etc.)

Areal distribution or origin area: **Umbria**
Flesh/pit weight ratio: **medium (5,62 ± 0,63)**
Oil content (%): **low (31,95 ± 0,08)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,18 ± 0,45)**
Blade width (cm): **broad (1,62 ± 0,16)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (5,04 ± 1,72)**
Number of flowers: **high (32,78 ± 1,55)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,19 ± 0,59)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,64 ± 0,12)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

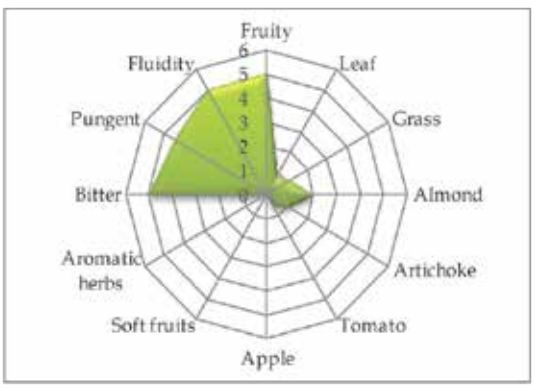
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,33 ± 0,10**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**14,15 ± 0,07**	Linolenic acid (ω3)	**0,85 ± 0,03**		
Palmitoleic acid	**0,97 ± 0,00**	Arachic acid	**0,21 ± 0,03**	Unsat./satured	**5,12 ± 0,03**
Stearic acid	**1,94 ± 0,04**	Eicosenoic acid	**0,03 ± 0,00**	ω6/ω3	**13,33 ± 0,55**
Oleic acid	**69,84 ± 0,37**	Behenic acid	**0,04 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 198	**179 - 181**	**214 - 222**	**214 - 221**	**124 - 130**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 177**	**143 - 182**	**205 - 205**	

References:

1 - Pannelli G., Alfei B., D' Ambrosio A., *et al.* In: *Varietà di olivo in Umbria*, Ed. Pliniana (2000), pp.79-84.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Fosco "

(synonymy: Carbonella, Morellino, Morello, Nostrale, Oliva Tonda, etc.)

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **medium (5,00 ± 0,15)**
Oil content (%): **medium (48,31 ± 1,23)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,74 ± 0,49)**
Blade width (cm): **medium (1,37 ± 0,11)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,86 ± 0,71)**
Number of flowers: **medium (24,59 ± 2,31)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,62 ± 0,03)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,29 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

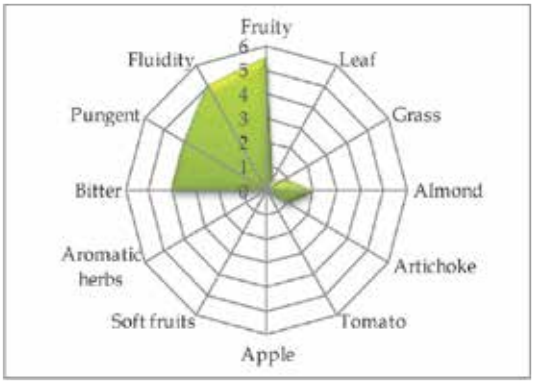
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,83 ± 1,70**	Lignoceric acid	**0,02 ± 0,00**
Palmitic acid	**14,98 ± 0,17**	Linolenic acid (ω3)	**0,83 ± 0,12**		
Palmitoleic acid	**1,40 ± 0,10**	Arachic acid	**0,22 ± 0,01**	Unsat./satured	**4,90 ± 0,12**
Stearic acid	**1,60 ± 0,13**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**11,87 ± 0,37**
Oleic acid	**69,82 ± 1,43**	Behenic acid	**0,06 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 194	**179 - 181**	**208 - 212**	**214 - 224**	**124 - 144**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 177**	**182 - 210**	**205 - 205**	

References:

1 - Consiglio Oleicolo Internazionale. In: *Catalogo Mondiale delle Varietà di Olivo,* COI (2003).
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Frangivento "

(synonymy: Cipressino, Franjivento, Olivo Cipressino, Olivo di Pietrafitta, etc.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (5,80 ± 0,81)**
Oil content (%): **medium (42,19 ± 1,23)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,32 ± 0,56)**
Blade width (cm): **medium (1,22 ± 0,13)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (4,36 ± 0,76)**
Number of flowers: **high (32,90 ± 5,01)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,12 ± 0,42)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,34 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

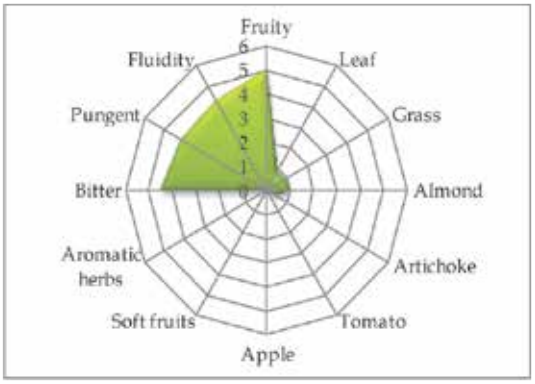
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**12,22 ± 0,02**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**0,01 ± 0,01**	Linolenic acid (ω3)	**0,31 ± 0,04**		
Palmitoleic acid	**15,00 ± 0,15**	Arachic acid	**0,27 ± 0,02**	Unsat./satured	**4,71 ± 0,49**
Stearic acid	**2,06 ± 0,04**	Eicosenoic acid	**0,01 ± 0,00**	ω6/ω3	**39,42± 0,08**
Oleic acid	**66,37 ± 0,09**	Behenic acid	**0,05 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 176	**179 - 185**	**208 - 208**	**214 - 214**	**124 - 130**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 166**	**177 - 177**	**154 - 205**	**205 - 232**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Istituto Sperimentale per l'Olivicoltura (2004), pp. 53-56.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Frangivento "

(synonymy: Cipressino, Franjivento, Olivo Cipressino, Olivo di Pietrafitta, etc.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (5,80 ± 0,81)**
Oil content (%): **medium (42,19 ± 1,23)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,32 ± 0,56)**
Blade width (cm): **medium (1,22 ± 0,13)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (4,36 ± 0,76)**
Number of flowers: **high (32,90 ± 5,01)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,12 ± 0,42)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,34 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

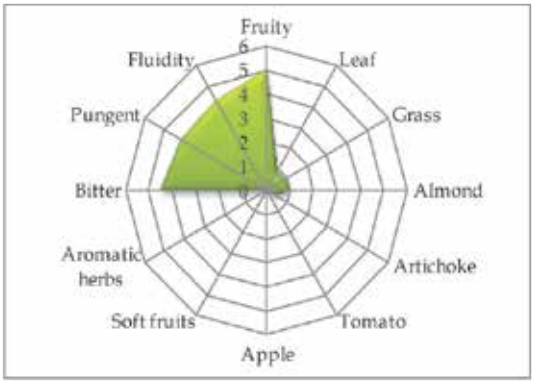
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**12,22 ± 0,02**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**0,01 ± 0,01**	Linolenic acid (ω3)	**0,31 ± 0,04**		
Palmitoleic acid	**15,00 ± 0,15**	Arachic acid	**0,27 ± 0,02**	Unsat./satured	**4,71 ± 0,49**
Stearic acid	**2,06 ± 0,04**	Eicosenoic acid	**0,01 ± 0,00**	ω6/ω3	**39,42± 0,08**
Oleic acid	**66,37 ± 0,09**	Behenic acid	**0,05 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 176	**179 - 185**	**208 - 208**	**214 - 214**	**124 - 130**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 166**	**177 - 177**	**154 - 205**	**205 - 232**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Istituto Sperimentale per l'Olivicoltura (2004), pp. 53-56.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Frantoio "

(synonymy: Comune, Correggiolo, Gentile, Larcianese, Razzo, etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **medium (5,92 ± 1,12)**
Oil content (%): **medium (44,87 ± 2,89)**
Purpose: **oil**

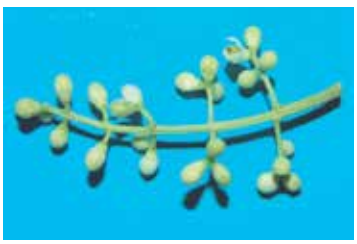
Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,15 ± 0,54)**
Blade width (cm): **broad (1,58 ± 0,22)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,67 ± 0,70)**
Number of flowers: **medium (19,16 ± 2,80)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,56 ± 0,40)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**



Pit characters
Weight of 100 pits (g): **medium (0,42 ± 0,05)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

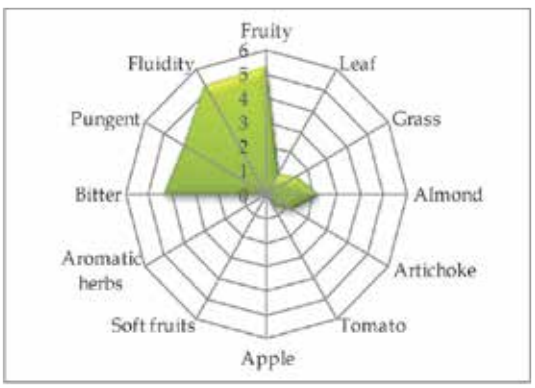
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**6,70 ± 1,58**	Lignoceric acid	**0,03 ± 0,02**
Palmitic acid	**13,39 ± 1,67**	Linolenic acid (ω3)	**0,79 ± 0,05**		
Palmitoleic acid	**1,03 ± 0,30**	Arachic acid	**0,33 ± 0,12**	Unsat./satured	**5,42 ± 0,58**
Stearic acid	**1,90 ± 0,11**	Eicosenoic acid	**0,11 ± 0,17**	ω6/ω3	**8,49 ± 1,96**
Oleic acid	**74,83 ± 2,28**	Behenic acid	**0,08 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 194	**179 - 181**	**208 - 212**	**214 - 224**	**124 - 144**	**159 - 179**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 182**	**182 - 205**	**205 - 205**	

References:

1 - Pannelli G., Alfei B., D' Ambrosio A., *et al.* In: *Varietà di olivo in Umbria*, Ed. Pliniana (2000), pp. 19-24.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.

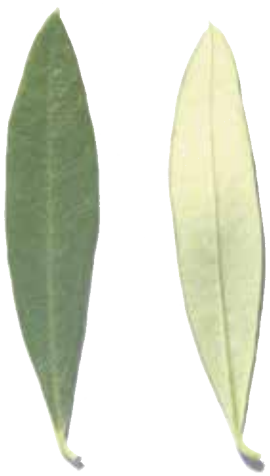
" Gaggiolo "

(synonymy: Cornella, Corno, Crignola, Giaggiola, Lunga, etc.)

Areal distribution or origin area: **Lombardia**
Flesh/pit weight ratio: **low (4,32± 0,08)**
Oil content (%): **medium (44,50 ± 0,43)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **dense**



Leaf characters
Blade length (cm): **medium (6,05 ± 0,47)**
Blade width (cm): **broad (1,52 ± 0,20)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,40 ± 0,78)**
Number of flowers: **medium (18,51 ± 1,82)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,43 ± 0,17)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,48 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

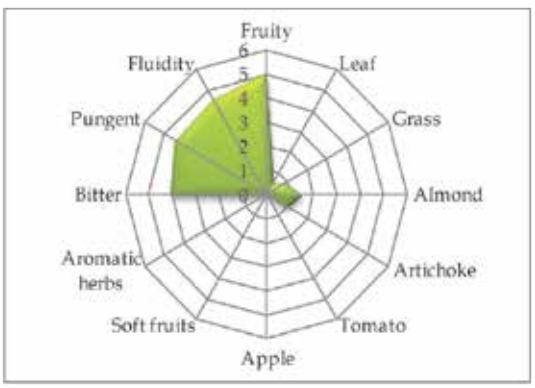
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,93 ± 0,92**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**12,03 ± 0,53**	Linolenic acid (ω3)	**0,63 ± 0,09**		
Palmitoleic acid	**1,22 ± 0,02**	Arachic acid	**0,28 ± 0,05**	Unsat./satured	**5,90 ± 0,42**
Stearic acid	**2,15 ± 0,24**	Eicosenoic acid	**0,01 ± 0,00**	ω6/ω3	**11,08 ± 0,14**
Oleic acid	**75,80 ± 0,23**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**179 - 179**	**214 - 222**	**214 - 224**	**126 - 144**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**177 - 182**	**182 - 205**	**185 - 185**	

References:

1 - Carocci Buzi C. In: *Annali Istituto Sperimentale per l'Olivicoltura e l'Oleificio*, Ed. Bracco (1965), pp. 1-31.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Gentile di Chieti "

(synonymy: Gentile, Nostrana, Olivastro.)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **medium (5,30 ± 0,25)**
Oil content (%): **medium (41,98 ± 2,15)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **erect-spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,53 ± 0,57)**
Blade width (cm): **medium (1,48 ± 0,23)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,93 ± 2,88)**
Number of flowers: **medium (19,16 ± 2,07)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,61 ± 0,44)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,9 ± 0,00)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **high**

Biochemical Characters

Fatty Acid Composition

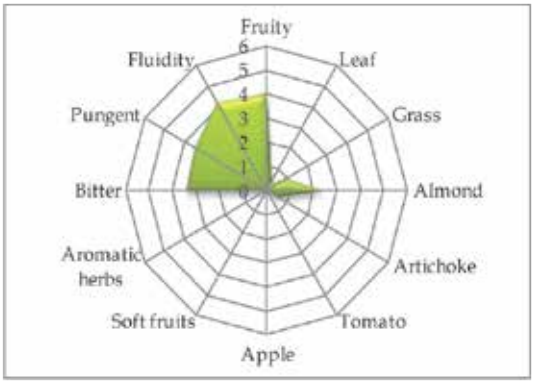
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**16,01 ± 0,11**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**15,61 ± 0,49**	Linolenic acid (ω3)	**0,83 ± 0,04**		
Palmitoleic acid	**1,42 ± 0,04**	Arachic acid	**0,32 ± 0,03**	Unsat./satured	**4,47 ± 0,16**
Stearic acid	**2,21 ± 0,04**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**19,35 ± 1,17**
Oleic acid	**62,20 ± 0,57**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium - light bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 172	**169 - 179**	**208 - 212**	**210 - 214**	**124 - 130**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 193**	**154 - 205**	**213 - 213**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 42-43.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Gentile di Larino "

(synonymy: Gentile di Trivento, Olivacchione, etc.)

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **medium (6,45 ± 0,36)**
Oil content (%): **medium (44,75± 0,77)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,49 ± 0,56)**
Blade width (cm): **medium (1,17 ± 0,16)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,21 ± 2,49)**
Number of flowers: **low (17,16 ± 0,73)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,31 ± 0,10)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,31 ± 0,03)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **low**

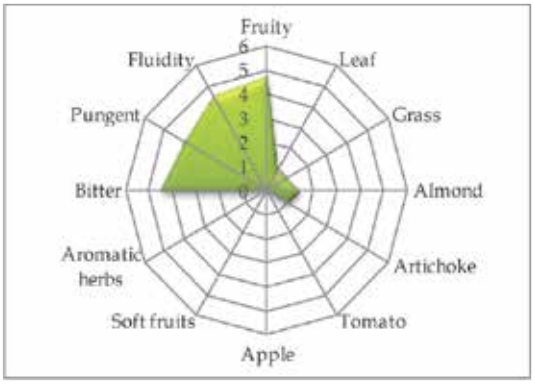
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,46 ± 2,14**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**12,30 ± 1,49**	Linolenic acid (ω3)	**1,03 ± 0,36**		
Palmitoleic acid	**0,63 ± 0,41**	Arachic acid	**0,33 ± 0,09**	Unsat./satured	**5,77 ± 0,93**
Stearic acid	**2,35 ± 0,53**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**9,44 ± 1,25**
Oleic acid	**73,59 ± 0,07**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 194	**169 - 179**	**208 - 212**	**214 - 214**	**124 - 130**	**150 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**166 - 193**	**182 - 182**	**213 - 213**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo,* University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Gentile nera di Colletorto "

(synonymy: Colletortese, Gentile di Colletorto, Noccioluta, Oliva nera di Colletorto, etc.)

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **low (4,35 ± 0,11)**
Oil content (%): **medium (43,56 ± 1,26)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,35 ± 0,45)**
Blade width (cm): **medium (1,10 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,34 ± 0,75)**
Number of flowers: **low (13,08± 0,00)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,66 ± 0,08)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,50 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

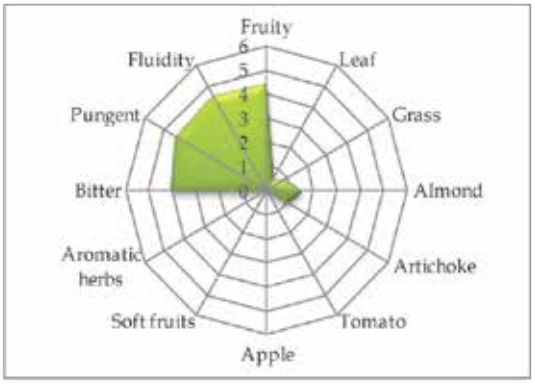
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,00**	Linoleic acid (ω6)	**10,36 ± 0,39**	Lignoceric acid	**0,04 ± 0,01**
Palmitic acid	**15,20 ± 1,33**	Linolenic acid (ω3)	**0,86 ± 0,07**		
Palmitoleic acid	**2,48 ± 0,30**	Arachic acid	**0,28 ± 0,07**	Unsat./satured	**4,37 ± 0,52**
Stearic acid	**2,83 ± 0,52**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**12,04 ± 0,57**
Oleic acid	**65,34 ± 0,66**	Behenic acid	**0,05 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 210	**177 - 179**	**208 - 212**	**214 - 214**	**124 - 126**	**136 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 135**	**177 - 193**	**154 - 205**	**213 - 213**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo,* University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Geracese "

(synonymy: Dolce di Gerace, Mammolese, Oliva grossa, Oliva di Bianco, Paesana, etc.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **high (8,35 ± 0,60)**
Oil content (%): **medium (47,02 ± 0,28)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,62 ± 0,57)**
Blade width (cm): **medium (1,28 ± 0,01)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,21 ± 1,78)**
Number of flowers: **low (12,58 ± 1,38)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,74 ± 0,33)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,43 ± 0,15)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

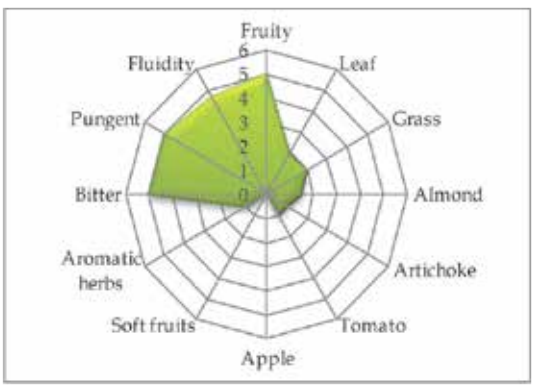
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,63 ± 0,02**	Lignoceric acid	**0,05 ± 0,05**
Palmitic acid	**14,09 ± 0,01**	Linolenic acid (ω3)	**0,75 ± 0,11**		
Palmitoleic acid	**1,26 ± 0,12**	Arachic acid	**0,36 ± 0,14**	Unsat./satured	**5,01 ± 0,13**
Stearic acid	**2,04 ± 0,15**	Eicosenoic acid	**0,19 ± 0,23**	ω6/ω3	**11,69 ± 1,76**
Oleic acid	**71,33 ± 0,74**	Behenic acid	**0,11 ± 0,06**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of leaves and grass, pleasant sensations of artichoke and tomato. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 198	**179 - 181**	**212 - 212**	**212 - 212**	**126 - 144**	**150 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 150	**143 - 143**	**166 - 177**	**143 - 182**	**200 - 200**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo Calabrese*, Ist. Sper. Olivic.(2003), pp: 9.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Giarfara "

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (8,43 ± 1,42)**
Oil content (%): **high (53,48 ± 0,70)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,97 ± 0,48)**
Blade width (cm): **broad (1,67 ± 0,17)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,00 ± 0,24)**
Number of flowers: **low (14,04 ± 0,89)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,37 ± 0,44)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,57 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Surface: **scabrous**
Number of grooves: **medium**

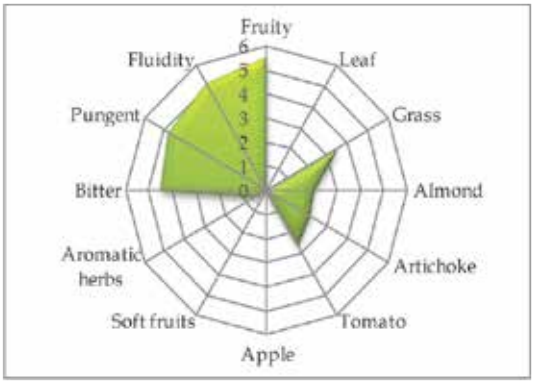
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,34 ± 1,28**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**11,11 ± 1,54**	Linolenic acid (ω3)	**0,82 ± 0,05**		
Palmitoleic acid	**0,80 ± 0,23**	Arachic acid	**0,26 ± 0,04**	Unsat./satured	**6,37 ± 0,60**
Stearic acid	**2,23 ± 0,45**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**7,68 ± 1,09**
Oleic acid	**77,71 ± 0,51**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of grass and tomato, read sensations of almond and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 182	**179 - 179**	**212 - 212**	**214 - 214**	**144 - 144**	**157 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**166 - 193**	**182 - 182**	**108 - 108**	

References:

1 - Bottari V., Spina P. In: *Le varietà di olivo coltivate in Sicilia*, Ann. Sper. Agr. (1953), 7: pp. 937-1004.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Giarraffa "

(synonymy: Becco di Corvo, Cefalutana, Giarrafara, Giarraffedda, Mammona, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (9,28 ± 1,65)**
Oil content (%): **medium (46,69 ± 1,44)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,38 ± 0,59)**
Blade width (cm): **medium (1,34 ± 0,26)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,56 ± 1,19)**
Number of flowers: **low (15,28 ± 1,57)**

Fruit characters
Fresh weight of 100 fruits (g): **very high (8,25 ± 1,66)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **very high (0,82 ± 0,20)**
Shape (length/width): **elliptic**
Mucron: **obious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **high**

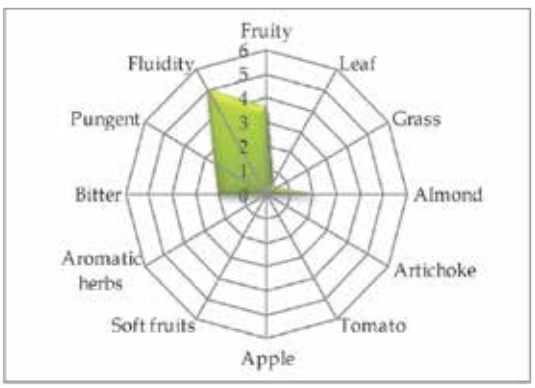
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,00 ± 0,00**	Linoleic acid (ω6)	**19,05 ± 0,21**	Lignoceric acid	**0,06 ± 0,02**
Palmitic acid	**12,90 ± 0,44**	Linolenic acid (ω3)	**0,87 ± 0,04**		
Palmitoleic acid	**1,09 ± 0,05**	Arachic acid	**1,12 ± 0,05**	Unsat./satured	**5,54 ± 0,26**
Stearic acid	**1,86 ± 0,10**	Eicosenoic acid	**0,36 ± 0,06**	ω6/ω3	**22,05 ± 1,15**
Oleic acid	**61,61 ± 0,76**	Behenic acid	**0,08 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-light, with taste of almond, read sensations of grass and leaves. Balanced taste sensation with medium-light bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**181 - 185**	**212 - 212**	**210 - 214**	**124 - 144**	**136 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 166**	**143 - 182**	**213 - 213**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 100-104.

2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Giusta "

(synonymy: Justa, Mezza oliva, Oliva tonda, Rizza, etc.)

Areal distribution or origin area: **Basilicata**
Flesh/pit weight ratio: **medium (6,94 ± 1,61)**
Oil content (%): **low (41,59 ± 2,66)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect-spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,98 ± 0,45)**
Blade width (cm): **broad (1,54 ± 0,15)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,04 ± 1,23)**
Number of flowers: **low (14,34 ± 1,86)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,72 ± 0,06)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,48 ± ,011)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

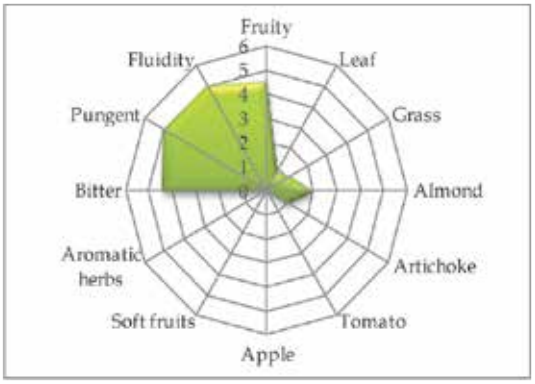
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**18,04 ± 0,25**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**13,86 ± 0,44**	Linolenic acid (ω3)	**0,94 ± 0,02**		
Palmitoleic acid	**0,85 ± 0,02**	Arachic acid	**0,06 ± 0,34**	Unsat./satured	**4,86 ± 0,08**
Stearic acid	**2,75 ± 0,19**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**19,16 ± 0,24**
Oleic acid	**61,86 ± 0,45**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**177 - 179**	**214 - 222**	**214 - 214**	**126 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 177**	**182 - 182**	**205 - 205**	

References:
1 - Rotundo A., Marone E. In: *Il germoplasma olivicolo lucano*, Olita-Potenza (2002), pp. 57-60.
2 - Rotundo A., Perri E.,Muzzalupo I., *et al.* In: *Il germoplasma olivicolo meridionale*, (2012 in press).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Gnagnaro "

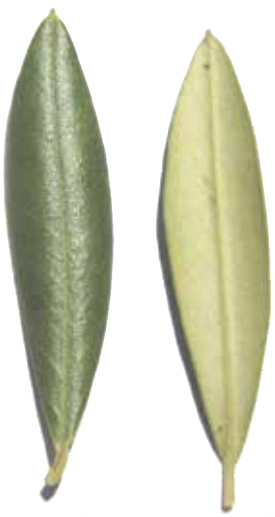
(synonymy: Gragnaro)

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **low (1,71 ± 0,06)**
Oil content (%): **low (36,14 ± 1,56)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **short (4,98 ± 0,43)**
Blade width (cm): **medium (1,34 ± 0,18)**
Shape (length/width): **elliptic**



Inflorescence characters
Inflorescence length (cm): **medium (3,21 ± 1,85)**
Number of flowers: **low (19,47 ± 1,42)**

Fruit characters
Fresh weight of 100 fruits (g): **low (0,59 ± 0,01)**
Shape (length/width): **elongated**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,22 ± 0,01)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

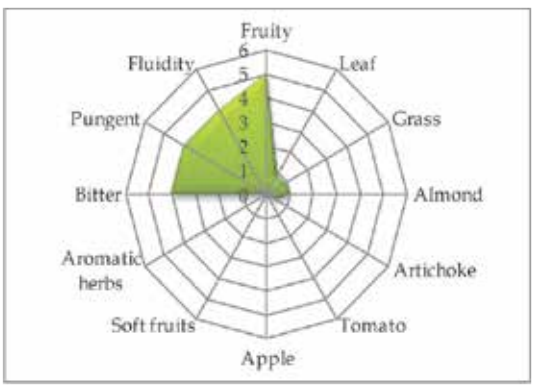
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**16,40 ± 2,45**	Lignoceric acid	**0,04 ± 0,03**
Palmitic acid	**13,78 ± 1,53**	Linolenic acid (ω3)	**0,95 ± 0,07**		
Palmitoleic acid	**1,10 ± 0,03**	Arachic acid	**0,24 ± 0,05**	Unsat./satured	**5,14 ± 0,62**
Stearic acid	**2,20 ± 0,14**	Eicosenoic acid	**0,15 ± 0,22**	ω6/ω3	**17,40 ± 3,01**
Oleic acid	**63,94 ± 1,90**	Behenic acid	**0,08 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 206	**175 - 175**	**214 - 214**	**210 - 214**	**124 - 144**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 182**	**166 - 166**	**154 - 182**	**220 - 243**	

References:

1 - Macrì T., Picone G., La Porta G. In : *Olivo e Olio,* (1988), 5: pp. 34-41.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

" Grappolo "

(synonymy: Frantoie a grappoli)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **medium (6,01 ± 0,47)**
Oil content (%): **medium (47,30 ± 1,64)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,60 ± 0,46)**
Blade width (cm): **broad (1,59 ± 0,12)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,95 ± 0,35)**
Number of flowers: **low (17,73 ± 1,82)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,59 ± 0,06)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,37 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

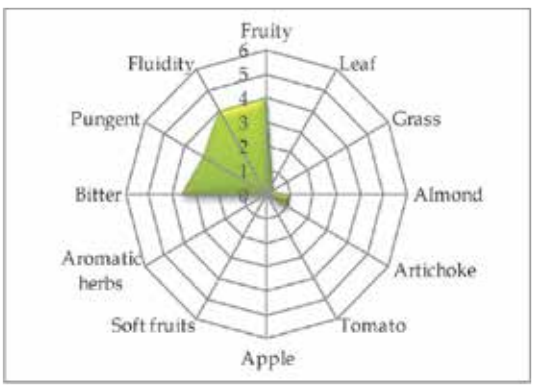
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**6,40 ± 0,72**	Lignoceric acid	**0,04 ± 0,03**
Palmitic acid	**10,48 ± 0,31**	Linolenic acid (ω3)	**0,97 ± 0,02**		
Palmitoleic acid	**0,47 ± 0,15**	Arachic acid	**0,37 ± 0,17**	Unsat./satured	**6,77 ± 0,15**
Stearic acid	**2,14 ± 0,03**	Eicosenoic acid	**0,15 ± 0,19**	ω6/ω3	**6,59 ± 0,84**
Oleic acid	**78,71 ± 0,85**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity, medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**181 - 181**	**208 - 218**	**210 - 218**	**124 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**150 - 150**	**156 - 182**	**182 - 182**	**220 - 220**	

References:

1 - Cimato A., Cantini C., Sani G., In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Grignan "

(synonymy: Brescian, Gargnano, Gregnara, etc.)

Areal distribution or origin area: **Veneto**
Flesh/pit weight ratio: **low (4,90 ± 1,25)**
Oil content (%): **medium (40,00 ± 0,62)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect-spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,66 ± 0,59)**
Blade width (cm): **medium (1,41 ± 0,19)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,77 ± 0,21)**
Number of flowers: **low (14,58 ± 0,67)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,31 ± 0,06)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,60 ± 0,15)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **high**

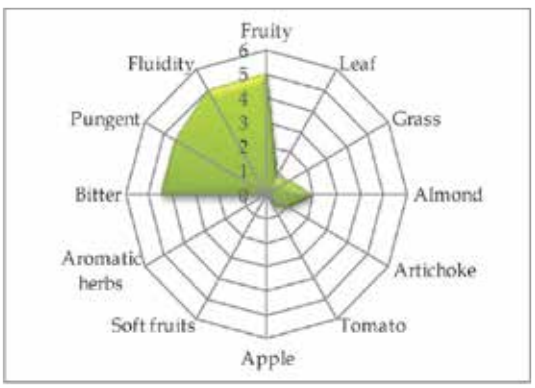
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,00**	Linoleic acid (ω6)	**7,18 ± 1,07**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**11,54 ± 0,44**	Linolenic acid (ω3)	**0,90 ± 0,02**		
Palmitoleic acid	**0,95 ± 0,09**	Arachic acid	**0,28 ± 0,01**	Unsat./satured	**6,14 ± 0,15**
Stearic acid	**2,19 ± 0,05**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**7,97 ± 1,03**
Oleic acid	**76,21 ± 1,49**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 198	**177 - 185**	**212 - 212**	**212 - 221**	**124 - 130**	**157 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**166 - 166**	**182 - 210**	**213 - 220**	

References:

1 - Consiglio Oleicolo Internazionale. In: *Catalogo Mondiale delle Varietà di Olivo,* COI (2003).
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Grossa di Cassano "

(synonymy: Cassanese, Precoce di Cassano.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **high (7,62 ± 0,98)**
Oil content (%): **low (36,56 ± 3,14)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,37 ± 0,51)**
Blade width (cm): **broad (1,79 ± 0,20)**
Shape (blade length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,27 ± 1,27)**
Number of flowers: **medium (22,07 ± 4,54)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,86 ± 0,26)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetrical**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Nipple: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,52 ± 0,01)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetrical**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

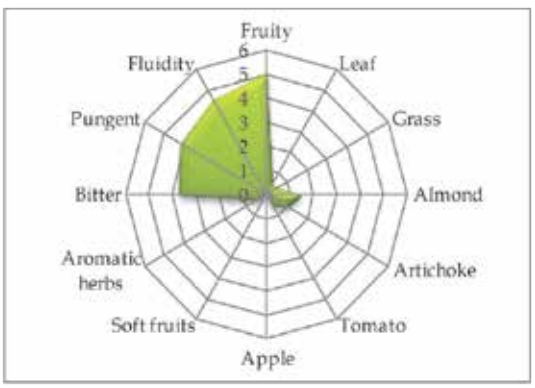
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**9,80 ± 1,77**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**12,92 ± 2,18**	Linolenic acid (ω3)	**0,94 ± 0,09**		
Palmitoleic acid	**0,72 ± 0,14**	Arachic acid	**0,07 ± 0,02**	Unsat./satured	**5,67 ± 0,92**
Stearic acid	**1,99 ± 0,21**	Eicosenoic acid	**0,10 ± 0,12**	ω6/ω3	**10,69 ± 3,09**
Oleic acid	**72,48 ± 3,09**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond, and read sensations of artichoke and grass. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 182	**179 - 179**	**208 - 218**	**210 - 214**	**124 - 144**	**136 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 177**	**182 - 182**	**205 - 232**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo Calabrese*, Ist. Sper. Olivic. (2003), pp: 7-8.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

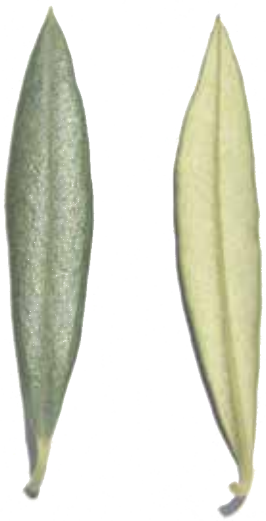
" Grossa di Spanga "

(synonymy: Bella della Daunia, Bella di Cerignola, Manna, Oliva a prugna, etc.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **high (8,40 ± 0,21)**
Oil content (%): **medium (45,63 ± 1,75)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium-dense**



Leaf characters
Blade length (cm): **long (7,07 ± 0,56)**
Blade width (cm): **medium (1,45 ± 0,20)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,93 ± 0,53)**
Number of flowers: **low (13.91 ± 1,79)**

Fruit characters
Fresh weight of 100 fruits (g): **very high (9,07 ± 1,83)**
Shape (length/width): **elongated**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **very high (0,98 ± 0,15)**
Shape (length/width): **elongated**
Mucron: **absent**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **high**

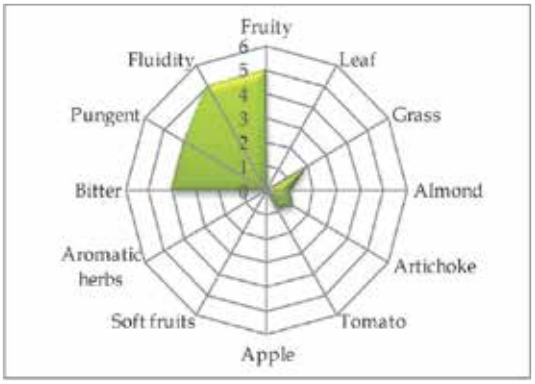
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,61 ± 0,12**	Lignoceric acid	**0,04 ± 0,03**
Palmitic acid	**14,29 ± 0,67**	Linolenic acid (ω3)	**0,83 ± 0,23**		
Palmitoleic acid	**0,86 ± 0,05**	Arachic acid	**0,30 ± 0,14**	Unsat./satured	**4,79 ± 0,68**
Stearic acid	**2,71 ± 1,28**	Eicosenoic acid	**0,12 ± 0,14**	ω6/ω3	**10,76 ± 2,79**
Oleic acid	**71,31 ± 1,68**	Behenic acid	**0,08 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium-high fruity , with good sensation of grass, less almond and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
166 - 172	**177 - 177**	**208 - 208**	**210 - 214**	**124 - 144**	**136 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 166**	**143 - 245**	**108 - 108**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 25-28.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Grossa di Venafro "

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **medium (6,40 ± 0,33)**
Oil content (%): **medium (46,92 ± 1,03)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,41 ± 0,48)**
Blade width (cm): **medium (1,31 ± 0,17)**
Shape (length/width): **elliptic - lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,69 ± 0,54)**
Number of flowers: **high (2,78 ± 2,27)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,10 ± 0,02)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,28 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **tenuous**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

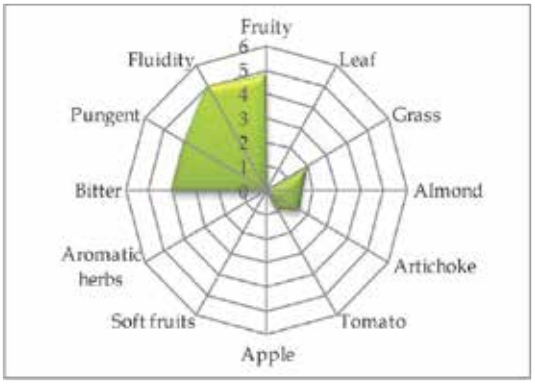
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**8,82 ± 0,67**	Lignoceric acid	**0,02 ± 0,00**
Palmitic acid	**15,24 ± 0,36**	Linolenic acid (ω3)	**0,87 ± 0,04**		
Palmitoleic acid	**1,35 ± 0,02**	Arachic acid	**0,24 ± 0,00**	Unsat./satured	**4,80 ± 0,07**
Stearic acid	**1,64 ± 0,14**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**10,08 ± 0,35**
Oleic acid	**70,63 ± 0,48**	Behenic acid	**0,06 ± 0,00**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **medium fruity , with good sensation of grass, less almond and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 204	**177 - 177**	**212 - 222**	**214 - 214**	**124 - 130**	**150 - 150**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 193**	**154 - 205**	**213 - 213**	

References:

1 - Consiglio Oleicolo Internazionale. In: *Catalogo Mondiale delle Varietà di Olivo,* COI (2003).
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Grossale "

(synonymy: Provenzale, Provenzana, Ursale, etc.)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (6,82 ± 0,49)**
Oil content (%): **medium (42,43 ± 0,72)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,26 ± 0,44)**
Blade width (cm): **medium (1,06 ± 0,09)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,87 ± 1,46)**
Number of flowers: **medium (18,22 ± 1,54)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,73 ± 0,01)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,35 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

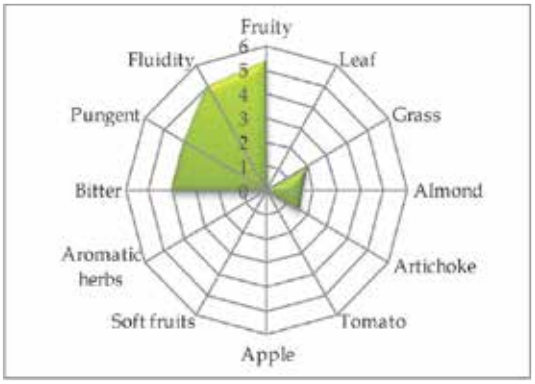
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**12,03 ± 1,10**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**16,20 ± 0,70**	Linolenic acid (ω3)	**0,95 ± 0,04**		
Palmitoleic acid	**1,36 ± 0,01**	Arachic acid	**0,16 ± 0,03**	Unsat./satured	**4,52 ± 0,23**
Stearic acid	**1,60 ± 0,06**	Eicosenoic acid	**0,06 ± 0,00**	ω6/ω3	**12,72 ± 1,74**
Oleic acid	**66,47 ± 0,32**	Behenic acid	**0,03 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium fruity, with good sensation of grass, less almond and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 198	**179 - 181**	**214 - 214**	**214 - 214**	**126 - 144**	**157 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 150**	**166 - 166**	**143 - 143**	**205 - 239**	

References:

1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" I 77 "

Areal distribution or origin area: **Umbria**
Flesh/pit weight ratio: **medium (5,02 ± 0,02)**
Oil content (%): **medium (48,36 ± 0,10)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,82 ± 0,64)**
Blade width (cm): **medium (1,38 ± 0,18)**
Shape (length/width): **elliptic lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,62 ± 0,68)**
Number of flowers: **medium (20,89 ± 2,38)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,73 ± 0,23)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,62 ± 0,04)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

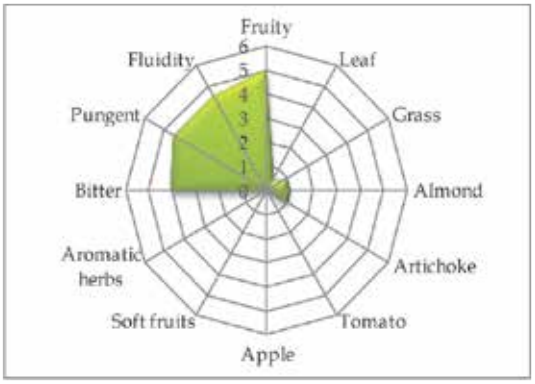
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**9,28 ± 0,04**	Lignoceric acid	**0,05 ± 0,02**
Palmitic acid	**10,09 ± 0,83**	Linolenic acid (ω3)	**0,92 ± 0,04**		
Palmitoleic acid	**0,86 ± 0,43**	Arachic acid	**0,28 ± 0,07**	Unsat./satured	**7,32 ± 0,53**
Stearic acid	**1,63 ± 0,03**	Eicosenoic acid	**0,04 ± 0,01**	ω6/ω3	**10,14 ± 0,44**
Oleic acid	**76,10 ± 0,26**	Behenic acid	**0,09 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**179 - 179**	**218 - 222**	**218 - 218**	**124 - 130**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 135**	**166 - 177**	**154 - 205**	**205 - 205**	

References:

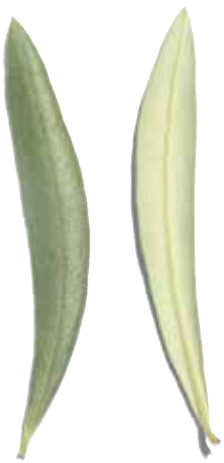
1 - Lombardo N. In: *Le risorse genetiche vegetali presso gli* IRSA, MIPAF (2001), 1: pp. 361-405.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Imperiale "

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **very high (12,82 ± 1,14)**
Oil content (%): **high (50,65 ± 0,50)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect-spreading**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (5,51 ± 0,69)**
Blade width (cm): **medium (1,19 ± 0,19)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,43 ± 0,90)**
Number of flowers: **low (16,43 ± 2,43)**

Fruit characters
Fresh weight of 100 fruits (g): **very high (9,38 ± 0,63)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **obvious**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,68 ± 0,08)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **scabrous**
Number of grooves: **high**

Biochemical Characters

Fatty Acid Composition

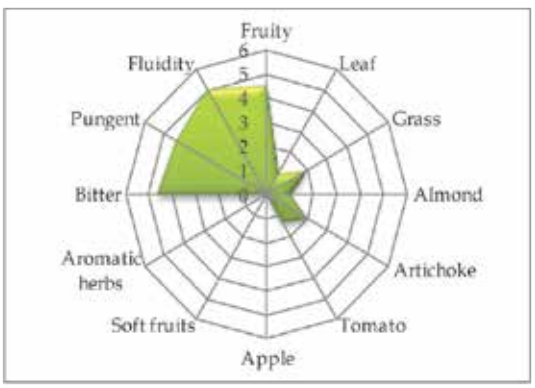
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,63 ± 1,53**	Lignoceric acid	**0,07 ± 0,03**
Palmitic acid	**10,93 ± 1,75**	Linolenic acid (ω3)	**0,92 ± 0,04**		
Palmitoleic acid	**0,95 ± 0,31**	Arachic acid	**0,40 ± 0,11**	Unsat./satured	**6,16 ± 0,75**
Stearic acid	**2,67 ± 0,21**	Eicosenoic acid	**0,21 ± 0,21**	ω6/ω3	**11,49 ± 1,26**
Oleic acid	**72,07 ± 1,53**	Behenic acid	**0,12 ± 0,06**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with good sensation of grass, artichoke and tomato. Balanced in flavours, with hints of bitter and spicy medium-high intensity. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 198	**177 - 185**	**208 - 212**	**210 - 250**	**130 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**143 - 143**	**213 - 232**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo Calabrese*, Ist. Sper. Olivic. (2003), pp: 21.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Intosso "

(synonymy: Grossa, Indossa, Olivo da cuccare, etc.)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **high (9,18 ± 0,26)**
Oil content (%): **medium (42,80 ± 0,25)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,62 ± 0,63)**
Blade width (cm): **medium (1,46 ± 0,17)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,93 ± 0,43)**
Number of flowers: **medium (19,37 ± 3,71)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (4,36 ± 0,37)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,44 ± 0,01)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **high**

Biochemical Characters

Fatty Acid Composition

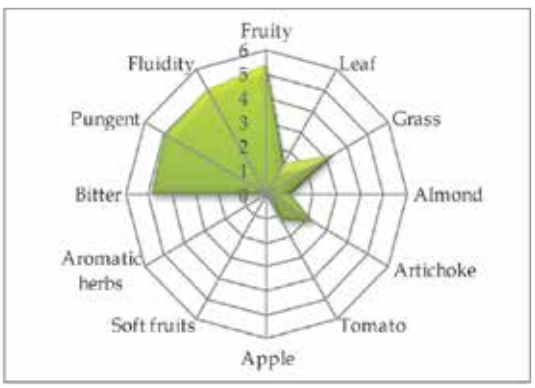
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**9,62 ± 1,65**	Lignoceric acid	**0,04 ± 0,01**
Palmitic acid	**10,12 ± 0,16**	Linolenic acid (ω3)	**0,86 ± 0,04**		
Palmitoleic acid	**0,51 ± 0,08**	Arachic acid	**0,49 ± 0,21**	Unsat./satured	**6,64± 0,39**
Stearic acid	**2,66 ± 0,33**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**11,15 ± 1,37**
Oleic acid	**75,18 ± 0,49**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with good sensation of grass, artichoke and tomato. Balanced in flavours, with hints of bitter and spicy medium-high intensity. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 210	**179 - 181**	**212 - 222**	**210 - 214**	**124 - 130**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**166 - 166**	**166 - 166**	**154 - 205**	**205 - 205**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 44-45.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

" Itrana "

(synonymy: Aitana, Cicerone, Gaetana, Oliva di Gaeta, Oliva di Itri, Trana, etc.)

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **low (4,59 ± 1,17)**
Oil content (%): **medium (44,93 ± 2,43)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,80 ± 0,93)**
Blade width (cm): **medium (1,40 ± 0,22)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,98 ± 0,97)**
Number of flowers: **low (16,79 0,93)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,03 ± 1,12)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,51 ± 0,18)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

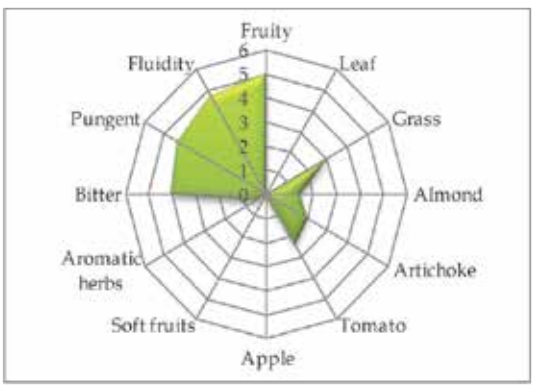
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,20 ± 0,72**	Lignoceric acid	**0,02 ± 0,00**
Palmitic acid	**13,48 ± 1,87**	Linolenic acid (ω3)	**0,84 ± 0,01**		
Palmitoleic acid	**1,19 ± 0,06**	Arachic acid	**0,22 ± 0,00**	Unsat./satured	**5,57 ± 0,77**
Stearic acid	**1,55 ± 0,05**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**7,40 ± 0,72**
Oleic acid	**75,41 ± 0,77**	Behenic acid	**0,05 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of grass and tomato, read sensations of almond and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 198	**179 - 181**	**214 - 218**	**214 - 224**	**130 - 144**	**150 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**166 - 177**	**150 - 161**	**220 - 220**	

References:
1 - Parlati M.V., Pandolfi S. In: *Catalogo delle principali varietà di olivo del Lazio,* Ist. Sper. Olivic. (2003), pp. 15-16.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Laurina "

(synonymy: Carbonella, Laura, Mignola, etc.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **medium (7,24 ± 1,20)**
Oil content (%): **medium (40,51 ± 0,09)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,15 ± 0,71)**
Blade width (cm): **medium (1,31 ± 0,15)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (4,45 ± 0,01)**
Number of flowers: **high (25,43 ± 0,27)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,28 ± 0,02)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **truncate**
Niplle: **obvious**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **low (0,18 ± 0,02)**
Shape (length/width): **elliptic**
Mucron: **tenuous**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

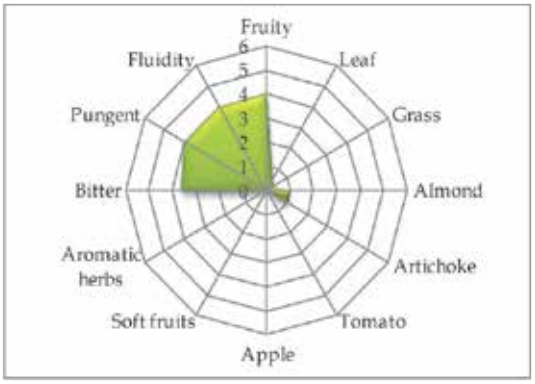
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,00 ± 0,00**	Linoleic acid (ω6)	**10,54 ± 0,41**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**13,95 ± 0,93**	Linolenic acid (ω3)	**0,84 ± 0,07**		
Palmitoleic acid	**2,59 ± 0,28**	Arachic acid	**0,24 ± 0,04**	Unsat./satured	**5,21 ± 0,30**
Stearic acid	**1,60 ± 0,08**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**12,64 ± 1,59**
Oleic acid	**67,76 ± 0,48**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity, medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 172	**177 - 185**	**214 - 214**	**214 - 224**	**124 - 144**	**157 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 193**	**154 - 205**	**200 - 200**	

References:

1 - Alfei B. In: *olivo e Olio*, (2003), 1: pp. 18-20.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.

" Lavagnina "

(synonymy: Olivastro, Olivo di Taggia, Olivo taggiasco, Pignola di Oneglia, etc.)

Areal distribution or origin area: **Liguria**
Flesh/pit weight ratio: **low (3,41 ± 0,08)**
Oil content (%): **medium (45,50 ± 1,50)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,88 ± 0,59)**
Blade width (cm): **medium (1,43 ± 0,14)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,78 ± 1,99)**
Number of flowers: **medium (20,14 ± 1,18)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,28 ± 0,21)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,48 ± 0,05)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

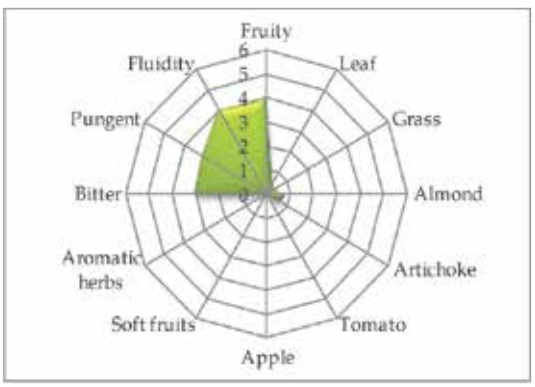
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,82 ± 0,53**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**13,68 ± 0,25**	Linolenic acid (ω3)	**0,84 ± 0,07**		
Palmitoleic acid	**1,57 ± 0,01**	Arachic acid	**0,22 ± 0,02**	Unsat./satured	**5,27 ± 0,11**
Stearic acid	**1,92 ± 0,04**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**11,65 ± 0,26**
Oleic acid	**70,61 ± 0,46**	Behenic acid	**0,05 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity, medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 176	**179 - 181**	**212 - 212**	**123 - 123**	**210 - 214**	**130 - 144**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 182**	**166 - 193**	**143 - 205**	**213 - 232**	

References:

1 - Cimato A., Cantini C., Sani G. In: *Atti 4° Convegno Nazionale sulla Biodiversità,* Alghero (2000), pp. 497-500.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*. University of Bari (in press), ISBN 978-88-88793-97-9.

" Leccino "

(synonymy: Colombina, Leccino di Belmonte, Toscano, Verolana, etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **low (4,03 ± 0,17)**
Oil content (%): **medium (46,20 ± 0,71)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,10 ± 0,39)**
Blade width (cm): **broad (1,53 ± 0,13)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,90 ± 1,67)**
Number of flowers: **low (12,83 ± 1,91)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,41 ± 0,19)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,52 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **high**

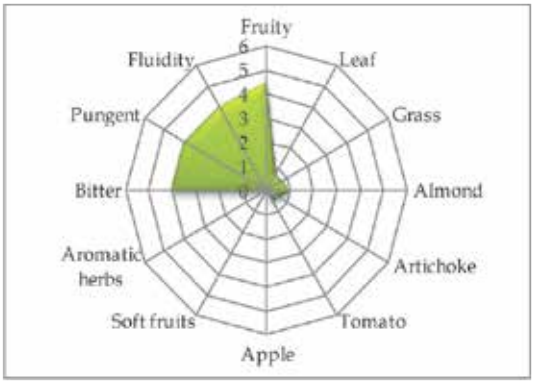
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**4,96 ± 0,74**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**12,98 ± 0,73**	Linolenic acid (ω3)	**0,82 ± 0,08**		
Palmitoleic acid	**1,22 ± 0,19**	Arachic acid	**0,27 ± 0,02**	Unsat./satured	**5,56 ± 0,24**
Stearic acid	**1,89 ± 0,24**	Eicosenoic acid	**0,06 ± 0,12**	ω6/ω3	**6,09 ± 1,21**
Oleic acid	**76,47 ± 1,24**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 206	**177 - 177**	**212 - 222**	**214 - 214**	**124 - 130**	**150 - 150**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**143 - 143**	**166 - 193**	**154 - 205**	**213 - 213**	

References:

1 - Pannelli G., Alfei B., Rosati S., *et al.* In: *Varietà di olivo in Umbria.* Ed. Pliniana (2000), pp.25-30.
2 - Muzzalupo I., Stefanizzi F., Salimonti A., *et al. Sci. Agric.* (2009), 66 (5): pp. 685–690.

" Lezze "

(synonymy: Oliastro, Olivastro di Conversano.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **low (4,46 ± 0,64)**
Oil content (%): **medium (40,01 ± 0,59)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,96 ± 0,40)**
Blade width (cm): **medium (1,38 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,99 ± 0,56)**
Number of flowers: **high (22,84 ± 1,97)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,05 ± 0,34)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,41 ± 0,05)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

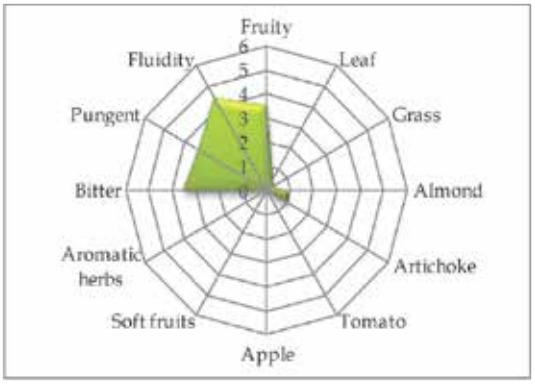
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**14,00 ± 3,42**	Lignoceric acid	**0,04 ± 0,02**
Palmitic acid	**14,66 ± 0,47**	Linolenic acid (ω3)	**0,82 ± 0,20**		
Palmitoleic acid	**1,54 ± 0,05**	Arachic acid	**0,26 ± 0,06**	Unsat./satured	**4,88 ± 0,25**
Stearic acid	**1,91 ± 0,30**	Eicosenoic acid	**0,18 ± 0,20**	ω6/ω3	**17,12 ± 0,10**
Oleic acid	**65,20 ± 2,79**	Behenic acid	**0,07 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium-light intensity. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 194	**181 - 181**	**208 - 218**	**210 - 210**	**124 - 144**	**136 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 135**	**177 - 182**	**143 - 161**	**164 - 185**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Istituto Sperimentale per l'Olivicoltura (2004), pp. 73-76.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

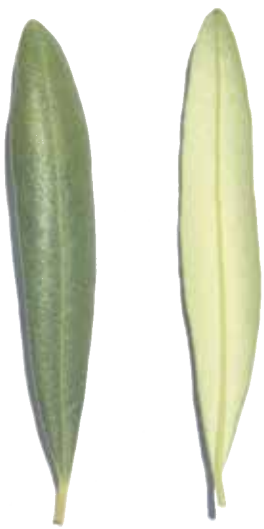
" Lumiaru "

(synonymy: Leminara, Luriaro, Luriara, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (10,00 ± 1,22)**
Oil content (%): **high (50,10 ± 0,88)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium-sparse**



Leaf characters
Blade length (cm): **medium (6,35 ± 0,70)**
Blade width (cm): **medium (1,44 ± 0,20)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,07 ± 1,72)**
Number of flowers: **medium (18,22 ± 0,95)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,58 ± 0,39)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (0,42 ± 0,08)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **pointed**
Surface: **scabrous**
Number of grooves: **medium**

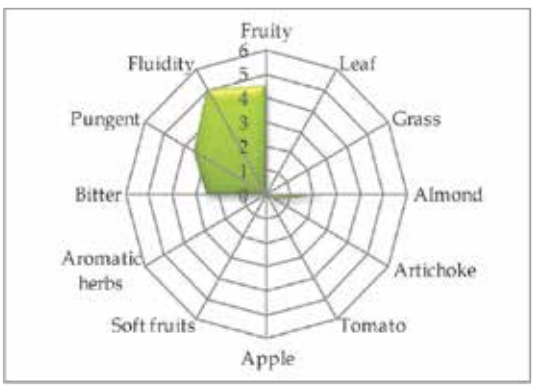
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**10,28 ± 0,01**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**15,10 ± 0,42**	Linolenic acid (ω3)	**1,09 ± 0,02**		
Palmitoleic acid	**1,43 ± 0,00**	Arachic acid	**0,25 ± 0,01**	Unsat./satured	**4,83 ± 0,18**
Stearic acid	**1,63 ± 0,09**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**9,46 ± 0,23**
Oleic acid	**68,76 ± 0,55**	Behenic acid	**0,06 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of almond. Balanced taste sensation with medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 206	**177 - 181**	**208 - 212**	**214 - 214**	**124 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**133 - 182**	**205 - 205**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et al*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 158-162.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Maiatica di Ferrandina "

(synonymy: Gentile di Ferrandina, Gentile, Maggiatica, Paesana, Oliva dolce, etc.)

Areal distribution or origin area: **Basilicata**
Flesh/pit weight ratio: **high (9,07 ± 0,83)**
Oil content (%): **high (52,24 ± 1,03)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreding-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,26 ± 0,55)**
Blade width (cm): **medium (1,15 ± 0,10)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,50 ± 0,15)**
Number of flowers: **low (13,57 ± 0,81)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,72 ± 0,87)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,37 ± 0,08)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

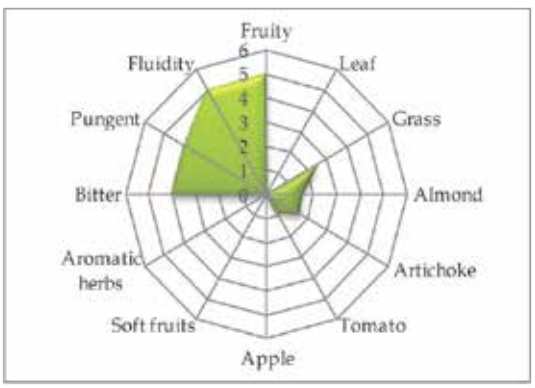
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,72 ± 1,59**	Lignoceric acid	**0,05 ± 0,02**
Palmitic acid	**10,53 ± 1,96**	Linolenic acid (ω3)	**0,80 ± 0,06**		
Palmitoleic acid	**0,88 ± 0,12**	Arachic acid	**0,39 ± 0,13**	Unsat./satured	**6,07 ± 0,63**
Stearic acid	**3,23 ± 0,67**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**8,47 ± 2,10**
Oleic acid	**76,15 ± 2,84**	Behenic acid	**0,10 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with good sensation of grass, artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**177 - 179**	**208 - 208**	**214 - 214**	**124 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**182 - 182**	**205 - 205**	

References:
1 - Rotundo A., Marone E. In: *Il germoplasma olivicolo lucano*, Olita - Potenza (2002), pp. 61-64.
2 - Rotundo A., Perri E., Muzzalupo I., *et al*. In: *Il germoplasma olivicolo meridionale*, (2012 in press).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Marina "

(synonymy: Marina Valcomino)

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **medium (5,02 ± 1,20)**
Oil content (%): **medium (46,63 ± 0,74)**
Purpose: **olio**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6.26 ± 0,42)**
Blade width (cm): **medium (1,29 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,65 ± 0,26)**
Number of flowers: **low (14,85 ± 2,77)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,64 ± 0,42)**
Shape (length/width): **elongated**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,49 ± 0,08)**
Shape (length/width): **elongated**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **high**

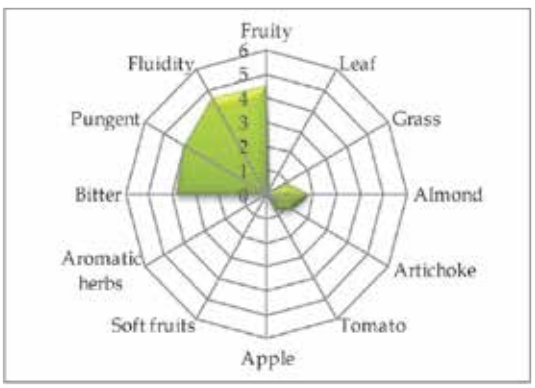
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**6,95 ± 0,29**	Lignoceric acid	**0,08 ± 0,02**
Palmitic acid	**12,53 ± 0,76**	Linolenic acid (ω3)	**0,76 ± 0,05**		
Palmitoleic acid	**2,08 ± 0,04**	Arachic acid	**0,54 ± 0,04**	Unsat./satured	**5,20 ± 0,20**
Stearic acid	**2,79 ± 0,27**	Eicosenoic acid	**0,28 ± 0,01**	ω6/ω3	**9,21 ± 0,22**
Oleic acid	**77,02 ± 0,84**	Behenic acid	**0,19 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond, read sensations of grass, tomato and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**179 - 181**	**212 - 222**	**214 - 214**	**126 - 126**	**184 - 197**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 135**	**166 - 193**	**154 - 154**	**213 - 232**	

References:

1 - Parlati M.V., Pandolfi S. In: *Catalogo delle principali varietà di olivo del Lazio,* Ist. Sper. Olivic. (2003), pp. 39-40.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Marzio "

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **medium (6,67 ± 0,31)**
Oil content (%): **medium (45,62 ± 0,69)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,34 ± 0,39)**
Blade width (cm): **medium (1,31 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,57 ± 0,53)**
Number of flowers: **low (16,95 ± 1,70)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,11 ± 0,15)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,28 ± 0,03)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

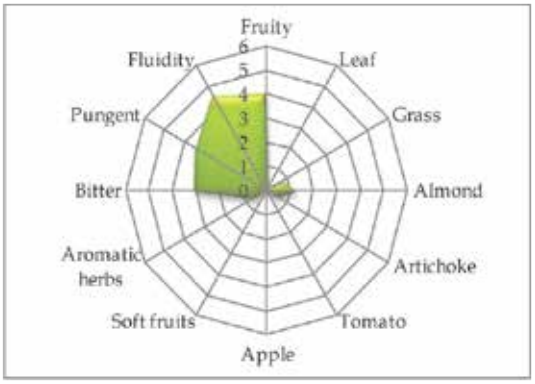
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,33 ± 0,51**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**12,00 ± 1,20**	Linolenic acid (ω3)	**0,74 ± 0,05**		
Palmitoleic acid	**0,98 ± 0,13**	Arachic acid	**0,48 ± 0,05**	Unsat./satured	**5,77 ± 0,21**
Stearic acid	**2,39 ± 0,77**	Eicosenoic acid	**0,21 ± 0,02**	ω6/ω3	**13,90 ± 1,67**
Oleic acid	**71,76 ± 0,25**	Behenic acid	**0,08 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium fruity, with good sensation of almond and aromatic herbs, less grass and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**181 - 181**	**208 - 218**	**210 - 218**	**130 - 130**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
159 - 159	**150 - 150**	**166 - 182**	**182 - 205**	**200 - 220**	

References:

1 - Cimato A., Cantini C., Sani G., In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Mignola "

(synonymy: Carbonella, Laurina, Sargana, Sarganella, Suricina, etc.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **medium (5,48 ± 0,24)**
Oil content (%): **medium (45,29 ± 0,70)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,60 ± 0,58)**
Blade width (cm): **broad (1,55 ± 0,15)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (4,04 ± 1,39)**
Number of flowers: **medium (20,94 ± 3,07)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,35± 0,05)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,21 ± 0,02)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **smooth**
Number of grooves: **high**

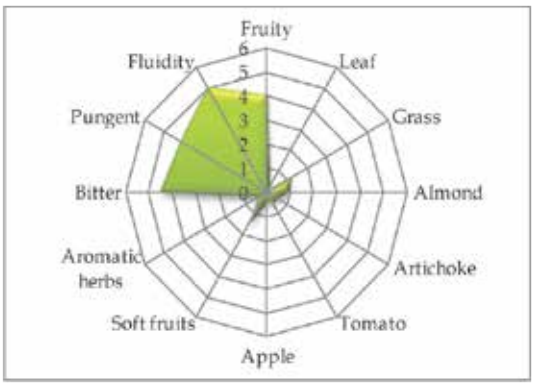
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**8,94 ± 0,47**	Lignoceric acid	**0,05 ± 0,01**
Palmitic acid	**13,33 ± 0,46**	Linolenic acid (ω3)	**0,46 ± 0,04**		
Palmitoleic acid	**1,93 ± 0,26**	Arachic acid	**0,37 ± 0,16**	Unsat./satured	**5,46 ± 0,39**
Stearic acid	**1,70 ± 0,24**	Eicosenoic acid	**0,27 ± 0,08**	ω6/ω3	**19,66 ± 0,49**
Oleic acid	**71,23 ± 2,33**	Behenic acid	**0,06 ± 0,06**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of soft fruits and read sensations of almond, grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 172	**177 - 185**	**214 - 218**	**214 - 221**	**126 - 144**	**157 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 193**	**154 - 205**	**200 - 200**	

References:

1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche. ASSAM* (2001), pp. 65-68.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Mignolo "

(synonymy: Gremignolo, Mignola, Minuto, Prugnolo, etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **low (2,67 ± 0,98)**
Oil content (%): **medium (44,17 ± 0,71)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,69 ± 0,75)**
Blade width (cm): **medium (1,41 ± 0,21)**
Shape (length/width): **elliptic lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,98 ± 0,68)**
Number of flowers: **medium (19,04 ± 1,19)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,06± 0,85)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,55 ± 0,09)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

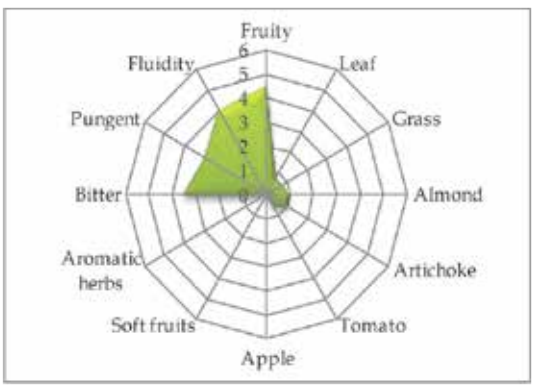
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,46 ± 0,65**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**10,18± 0,08**	Linolenic acid (ω3)	**0,91 ± 0,02**		
Palmitoleic acid	**1,21 ± 0,68**	Arachic acid	**0,34 ± 0,03**	Unsat./satured	**6,84 ± 0,49**
Stearic acid	**2,34 ± 1,32**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**11,54 ± 0,45**
Oleic acid	**73,40 ± 0,63**	Behenic acid	**0,09 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**181 - 181**	**208 - 210**	**210 - 218**	**124 - 144**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**150 - 150**	**156 - 177**	**182 - 205**	**200 - 200**	

References:

1 - Cimato A., Cantini C., Sani G., In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Minna di vacca "

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (9,24 ± 0,86)**
Oil content (%): **high (53,48 ± 0,70)**
Purpose: **table**

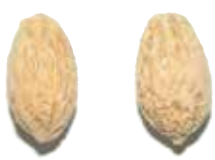
Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,08 ± 0,36)**
Blade width (cm): **medium (1,47 ± 0,15)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,56 ± 1,68)**
Number of flowers: **low (13,41 ± 1,04)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,59 ± 0,54)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **obvious**
Lenticels: **many and small**



Pit characters
Weight of 100 pits (g): **high (0,55 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towuards apex**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

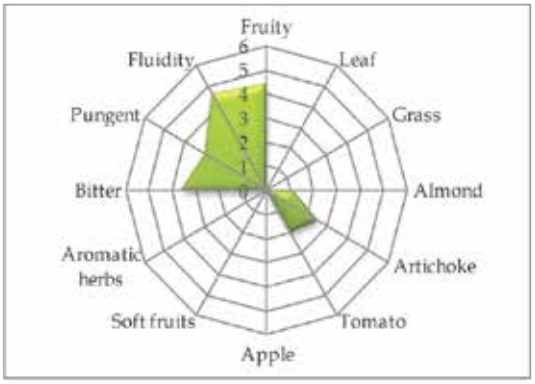
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**9,69 ± 0,72**	Lignoceric acid	**0,04 ± 0,01**
Palmitic acid	**11,24 ± 0,37**	Linolenic acid (ω3)	**0,97 ± 0,01**		
Palmitoleic acid	**0,41 ± 0,04**	Arachic acid	**0,22 ± 0,09**	Unsat./satured	**6,57 ± 0,22**
Stearic acid	**1,77 ± 0,02**	Eicosenoic acid	**0,03 ± 0,02**	ω6/ω3	**9,99 ± 0,59**
Oleic acid	**75,35 ± 1,08**	Behenic acid	**0,05 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of artichoke and tomato, read sensations of almond. Balanced taste sensation with medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 206	**181 - 185**	**208 - 212**	**214 - 214**	**124 - 130**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**166 - 193**	**182 - 182**	**108 - 108**	

References:

1 - Bottari V., Spina P. In: *Le varietà di olivo coltivate in Sicilia*, Ann. Sper. Agr. (1953), 7: pp. 937-1004.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

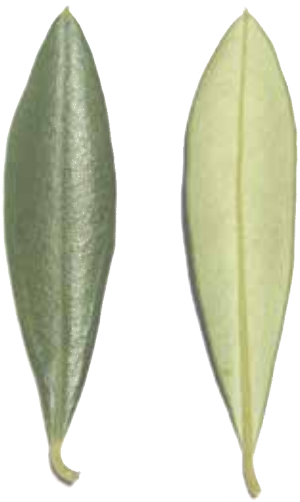
" Monaca "

(synonymy: Calabrise, Monaca, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (5,20 ± 1,09)**
Oil content (%): **medium (40,74 ± 0,93)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (5,06 ± 0,42)**
Blade width (cm): **medium (1,38 ± 0,13)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,95 ± 2,30)**
Number of flowers: **high (25,08 ± 1,76)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,38 ± 0,02)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (0,55 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

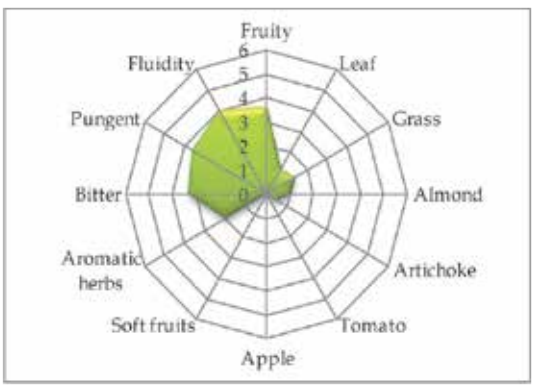
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**13,94 ± 1,02**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**14,66 ± 0,67**	Linolenic acid (ω3)	**0,76 ± 0,03**		
Palmitoleic acid	**3,03 ± 0,10**	Arachic acid	**0,30 ± 0,04**	Unsat./satured	**4,73 ± 0,23**
Stearic acid	**1,96 ± 0,05**	Eicosenoic acid	**0,09 ± 0,13**	ω6/ω3	**18,35 ± 0,81**
Oleic acid	**61,84 ± 1,80**	Behenic acid	**0,09 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-light, with taste of aromatic herbs, read sensations of almond, grass and leaves. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 206	**181 - 181**	**208 - 212**	**210 - 214**	**124 - 144**	**157 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 193**	**154 - 182**	**164 - 205**	

References:

1 - Lombardo N. In: *Le risorse genetiche vegetali presso gli IRSA*, Ed. MIPAF (2001), 1:pp. 361-405.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

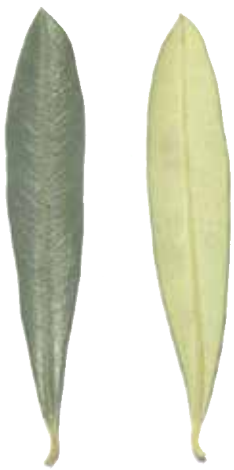
" Mora "

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **high (8,63 ± 1,73)**
Oil content (%): **low (37,70 ± 1,46)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,64 ± 0,54)**
Blade width (cm): **broad (1,83 ± 0,27)**
Shape (length/width): **elliptic**



Inflorescence characters
Inflorescence length (cm): **medium (2,34 ± 1,71)**
Number of flowers: **low (13,07 ± 1,17)**

Fruit characters
Fresh weight of 100 fruits (g): **low (4,75 0,76)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,51 ± 0,15)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apice**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

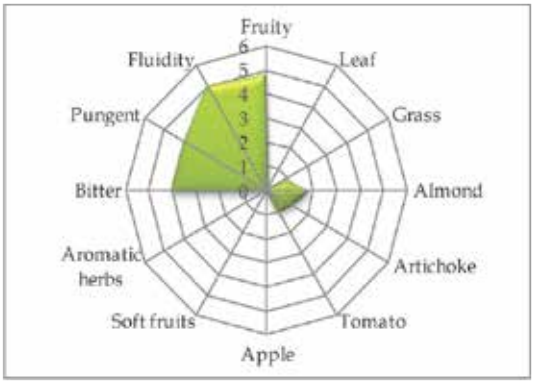
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**16,02 ± 1,77**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**14,05 ± 0,08**	Linolenic acid (ω3)	**1,29 ± 0,03**		
Palmitoleic acid	**2,34 ± 0,55**	Arachic acid	**0,23 ± 0,02**	Unsat./satured	**5,30 ± 0,06**
Stearic acid	**1,27 ± 0,04**	Eicosenoic acid	**0,03 ± 0,00**	ω6/ω3	**12,41 ± 1,05**
Oleic acid	**62,51 ± 2,93**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond, read sensations of grass, tomato, and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 182	**179 - 181**	**208 - 212**	**210 - 224**	**124 - 126**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**143 - 210**	**108 - 164**	

References:

1 - Ferrara E., Lamparelli F. In: *Atti Convegno l'Olivicoltura mediterranea*, Ist, Sper, Olivic. (1995), pp. 133-141.
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Moraiolo T. Corsini "

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **low (4,43 ± 0,88)**
Oil content (%): **medium (39,07 ± 1,70)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,89 ± 0,36)**
Blade width (cm): **medium (1,43 ± 0,10)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,56 ± 0,88)**
Number of flowers: **medium (24,80 ± 0,97)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,90 ± 0,23)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,36 ± 0,04)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

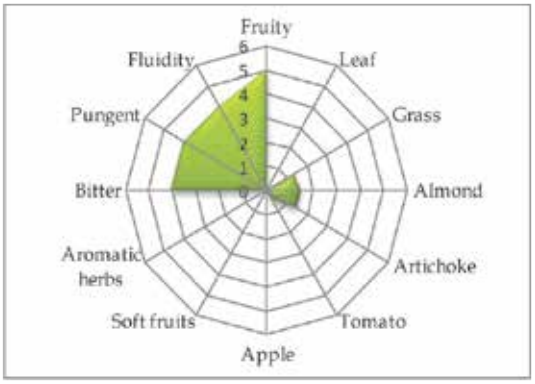
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,84 ± 0,73**	Lignoceric acid	**0,09 ± 0,12**
Palmitic acid	**12,81 ± 0,50**	Linolenic acid (ω3)	**0,85 ± 0,10**		
Palmitoleic acid	**0,88 ± 0,28**	Arachic acid	**0,23 ± 0,10**	Unsat./satured	**5,71 ± 0,31**
Stearic acid	**1,77 ± 0,24**	Eicosenoic acid	**0,04 ± 0,02**	ω6/ω3	**8,05 ± 0,48**
Oleic acid	**75,79 ± 0,83**	Behenic acid	**0,06 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond, grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
184 - 206	**179 - 185**	**212 - 222**	**214 - 214**	**124 - 130**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**166 - 182**	**177 - 193**	**154 - 205**	**213 - 220**	

References:

1 - Lombardo N. In: *Le risorse genetiche vegetali presso gli* IRSA, MIPAF (2001), 1: pp. 361-405.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Moraiolo "

(synonymy: Carboncella, Marinello, Morellino, Ogliolo, Oliva tonda, etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **medium (7,00 ± 1,36)**
Oil content (%): **medium (44,13 ± 1,44)**
Purpose: **oil**

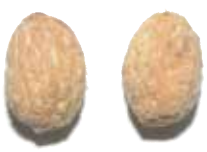
Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,29 ± 0,64)**
Blade width (cm): **medium (1,26 ± 0,16)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,51 ± 0,70)**
Number of flowers: **high (26,49 ± 1,58)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,36 ± 0,34)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**



Pit characters
Weight of 100 pits (g): **medium (0,31 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **high**

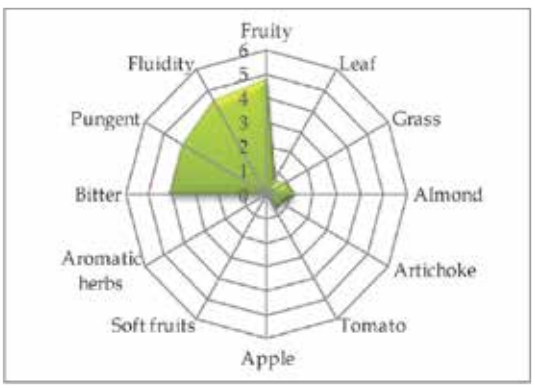
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,55 ± 0,17**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**14,47 ± 1,31**	Linolenic acid (ω3)	**0,97 ± 0,01**		
Palmitoleic acid	**0,64 ± 0,35**	Arachic acid	**0,27 ± 0,06**	Unsat./satured	**4,90 ± 0,13**
Stearic acid	**2,15 ± 0,99**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**9,90 ± 0,26**
Oleic acid	**70,74 ± 1,09**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
184 - 216	**179 - 185**	**212 - 222**	**214 - 214**	**124 - 124**	**150 - 150**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**182 - 182**	**177 - 193**	**154 - 205**	**213 - 213**	

References:

1 - Pannelli G., Alfei B., D' Ambrosio A., *et al.* In: *Varietà di olivo in Umbria*, Ed. Pliniana (2000), pp. 37-42.
2 - Muzzalupo I., Stefanizzi F., Salimonti A., *et al. Sci. Agric.* (2009), 66 (5): pp. 685–690.

" Morchiaio "

(synonymy: Fecciaio, Maschio, Mezzolano, Morchiolo, Olivastro, etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **high (9,59 ± 0,39)**
Oil content (%): **medium (47,90 ± 2,12)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **erect-spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,98 ± 0,40)**
Blade width (cm): **medium (1,21 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,72 ± 0,82)**
Number of flowers: **medium (18,14 ± 1,44)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,87 ± 0,05)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **medium (0,37 ± 0,01)**
Shape (length/width): **elongated**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **low**

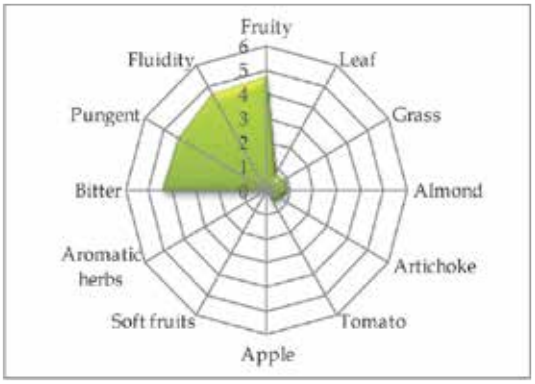
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**6,10 ± 0,17**	Lignoceric acid	**0,06 ± 0,02**
Palmitic acid	**13,82 ± 0,24**	Linolenic acid (ω3)	**0,95 ± 0,03**		
Palmitoleic acid	**0,81 ± 0,01**	Arachic acid	**0,31 ± 0,07**	Unsat./satured	**5,16 ± 0,09**
Stearic acid	**2,03 ± 0,04**	Eicosenoic acid	**0,06 ± 0,01**	ω6/ω3	**6,42 ± 0,00**
Oleic acid	**75,25 ± 0,70**	Behenic acid	**0,11 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 194	**177 - 181**	**218 - 212**	**212 - 212**	**124 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**156 - 177**	**150 - 182**	**108 - 108**	

References:

1 - Cimato A., Cantini C., Sani G., In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Moresca "

(synonymy: Aliva riali, Bianculidda, Catanisa, Marsalisa, Nucidda grossa, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (6,58 ± 1,71)**
Oil content (%): **medium (47,54 ± 0,79)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,56 ± 0,63)**
Blade width (cm): **medium (1,46 ± 0,22)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **short (2,34 ± 0,93)**
Number of flowers: **low (16,24 ± 2,39)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,87 ± 0,05)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,66 ± 0,10)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

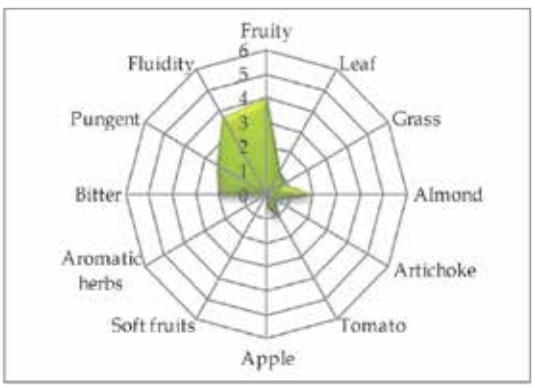
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**12,50 ± 0,23**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**13,40 ± 0,35**	Linolenic acid (ω3)	**0,87 ± 0,13**		
Palmitoleic acid	**2,22 ± 0,06**	Arachic acid	**0,22 ± 0,02**	Unsat./satured	**5,38 ± 0,13**
Stearic acid	**1,78 ± 0,06**	Eicosenoic acid	**0,01 ± 0,00**	ω6/ω3	**14,56 ± 1,95**
Oleic acid	**66,71 ± 0,25**	Behenic acid	**0,05 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of artichoke, read sensations of tomato, grass and leaves. Balanced taste sensation with a medium-light bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 198	**177 - 179**	**208 - 212**	**214 - 214**	**124 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**166 - 202**	**166 - 193**	**143 - 182**	**108 - 213**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 42-46.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Morinello "

(synonymy: Aurina, Arancino, Carbogna, More, Oriolo, etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **low (4,92 ± 0,29)**
Oil content (%): **medium (42,42 ± 1,86)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,84 ± 0,38)**
Blade width (cm): **medium (1,31 ± 0,16)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,44 ± 0,44)**
Number of flowers: **high (25,55 ± 2,94**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,84 ± 0,01)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,32 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

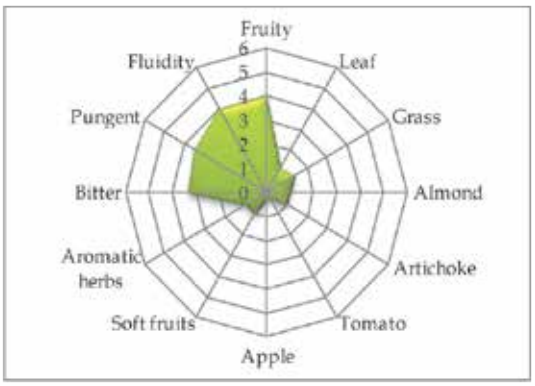
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,60 ± 1,10**	Lignoceric acid	**0,04 ± 0,03**
Palmitic acid	**14,47 ± 1,14**	Linolenic acid (ω3)	**0,93 ± 0,03**		
Palmitoleic acid	**1,30 ± 0,15**	Arachic acid	**0,33 ± 0,13**	Unsat./satured	**5,06 ± 0,45**
Stearic acid	**1,63 ± 0,14**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**11,38 ± 1,18**
Oleic acid	**69,44 ± 1,57**	Behenic acid	**0,09 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of almond, grass and leaves, read sensations of soft fruits and aromatic herb. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**179 - 181**	**212 - 214**	**218 - 218**	**130 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**177 - 193**	**154 - 182**	**200 - 200**	

References:

1 - Cimato A., Cantini C., Sani G., In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Nasitana Frutto Grosso "

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (6,62 ± 0,68)**
Oil content (%): **low (35,53 ± 0,40)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **sparse**

Leaf characters
Blade length (cm): **medium (6,28 ± 0,47)**
Blade width (cm): **medium (1,18 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,84 ± 1,48)**
Number of flowers: **low (15,99 ± 1,60)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,44 ± 0,41)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium-high (0,45 ± 0,06)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

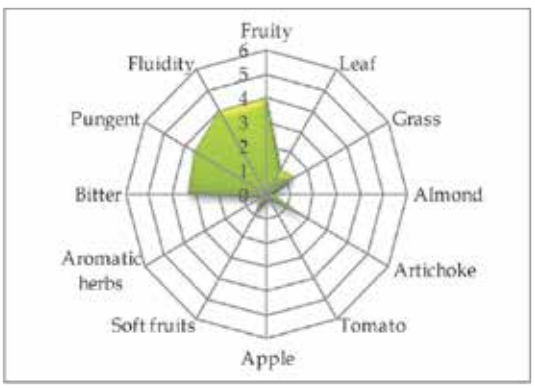
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,50 ± 1,71**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**14,59 ± 0,27**	Linolenic acid (ω3)	**0,76 ± 0,08**		
Palmitoleic acid	**3,15 ± 0,53**	Arachic acid	**0,21 ± 0,03**	Unsat./satured	**4,84 ± 0,08**
Stearic acid	**1,76 ± 0,09**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**15,38 ± 3,97**
Oleic acid	**64,56 ± 0,85**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of almond, grass and leaves, read sensations of soft fruits. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**177 - 185**	**208 - 212**	**214 - 214**	**124 - 130**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**210 - 210**	**205 - 205**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 164-168.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Nebba "

(synonymy: Anerba, Prunara, Tortella, Ugghiara, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (9,89 ± 0,55)**
Oil content (%): **high (50,82 ± 1,88)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading-drooping**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **long (7,01 ± 0,44)**
Blade width (cm): **broad (1,54 ± 0,16)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,12 ± 1,96)**
Number of flowers: **low (15,79 ± 1,76)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,62 ± 1,03)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **medium (0,37 ± 0,15)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

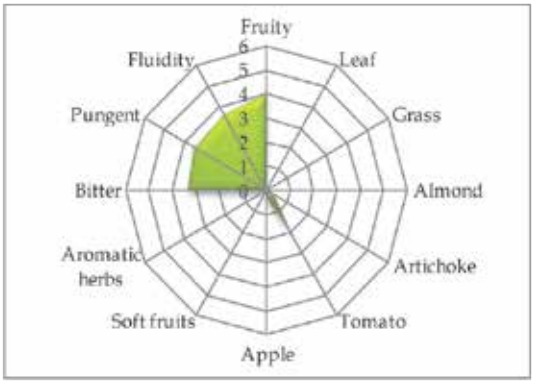
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,43 ± 1,07**	Lignoceric acid	**0,06 ± 0,04**
Palmitic acid	**11,47 ± 0,72**	Linolenic acid (ω3)	**0,83 ± 0,14**		
Palmitoleic acid	**0,95 ± 0,40**	Arachic acid	**0,37 ± 0,07**	Unsat./satured	**6,09 ± 0,16**
Stearic acid	**2,25 ± 0,29**	Eicosenoic acid	**0,17 ± 0,21**	ω6/ω3	**8,02 ± 2,67**
Oleic acid	**76,61 ± 1,35**	Behenic acid	**0,09 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of tomato. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 206	**181 - 185**	**208 - 208**	**214 - 214**	**144 - 144**	**150 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**166 - 193**	**182 - 182**	**205 - 205**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 169-174.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Nebbia "

(synonymy: Maglianese, Nebbia del Menocchia, Oliva cocia, etc.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **medium (6,79 ± 0,31)**
Oil content (%): **medium (44,91 ± 1,34)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **short (4,62 ± 0,26)**
Blade width (cm): **medium (1,21 ± 0,10)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,85 ± 1,67)**
Number of flowers: **low (16,68 ± 1,63)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,44 ± 0,26)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,33 ± 0,04)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

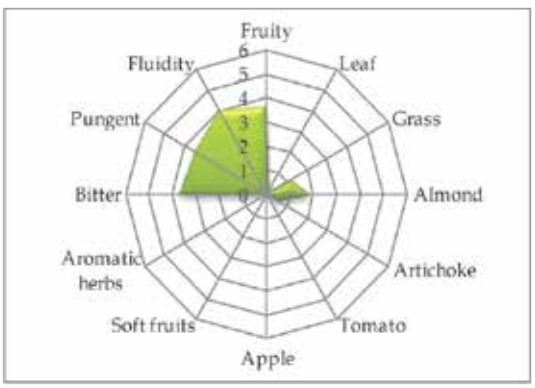
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,82 ± 0,15**	Lignoceric acid	**x0,04x ± 0,01**
Palmitic acid	**12,20 ± 0,06**	Linolenic acid (ω3)	**0,80 ± 0,05**		
Palmitoleic acid	**1,24 ± 0,99**	Arachic acid	**0,40 ± 0,02**	Unsat./satured	**4,94 ± 0,35**
Stearic acid	**4,24 ± 1,25**	Eicosenoic acid	**0,04 ± 0,01**	ω6/ω3	**14,74 ± 0,78**
Oleic acid	**68,03 ± 1,30**	Behenic acid	**0,08 ± 0,00**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium - light bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 206	**177 - 181**	**208 - 212**	**210 - 214**	**124 - 130**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 135**	**177 - 177**	**154 - 210**	**205 - 205**	

References:

1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche*, (2001), ASSAM pp. 73-76.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Nebbio di Chieti "

(synonymy: Comune, Gentile, Nebbia, Nebbio di Vasto, etc.)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **low (4,25 ± 0,13)**
Oil content (%): **medium (40,73 ± 2,28)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect– spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,20 ± 0,23)**
Blade width (cm): **medium (1,30 ± 0,11)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,40 ± 2,05)**
Number of flowers: **high (25,06 ± 1,80)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,03 ± 0,26)**
Shape (length/width): **pherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,22 ± 0,07)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

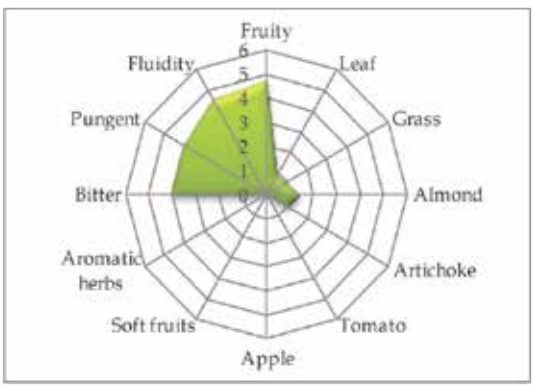
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**16,11 ± 1,29**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**16,07 ± 1,37**	Linolenic acid (ω3)	**0,74 ± 0,06**		
Palmitoleic acid	**1,18 ± 0,02**	Arachic acid	**0,24 ± 0,04**	Unsat./satured	**4,53 ± 0,46**
Stearic acid	**1,63 ± 0,09**	Eicosenoic acid	**0,28 ± 0,09**	ω6/ω3	**21,92 ± 0,15**
Oleic acid	**62,47 ± 0,24**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass, leaves, and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 210	**175 - 179**	**212 - 222**	**214 - 214**	**124 - 130**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 135**	**177 - 193**	**154 - 205**	**213 - 213**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 46-47.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 129-135.

" Nebbio di Pescara "

(synonymy: Nebbio, Neja.)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **medium (5,12 ± 0,54)**
Oil content (%): **medium (44,66 ± 0,19)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **short (4,92± 0,42)**
Blade width (cm): **medium (1,22 ± 0,17)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (4,03 ± 0,16)**
Number of flowers: **medium (20,69 ± 2,38)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,13 ± 0,02)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,35 ± 0,03)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

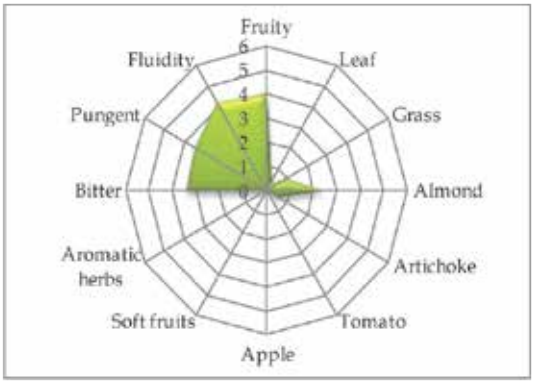
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,36 ± 0,07**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**13,97 ± 0,02**	Linolenic acid (ω3)	**0,76 ± 0,03**		
Palmitoleic acid	**2,04 ± 0,07**	Arachic acid	**0,23 ± 0,03**	Unsat./satured	**5,15 ± 0,04**
Stearic acid	**1,83 ± 0,03**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**15,01 ± 0,72**
Oleic acid	**67,78 ± 0,28**	Behenic acid	**0,05 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium - light bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**169 - 179**	**208 - 208**	**210 - 214**	**124 - 130**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**166 - 166**	**166 - 193**	**154 - 210**	**213 - 232**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 48-49.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 129-135.

" Negrera "

Areal distribution or origin area: **Liguria**
Flesh/pit weight ratio: **medium (6,54 ± 0,23)**
Oil content (%): **low (38,04 ± 0,08)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,18 ± 0,43)**
Blade width (cm): **medium (1,00 ± 0,09)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,27 ± 0,76)**
Number of flowers: **medium (22,83 ± 0,33)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,35 ± 0,42)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,37 ± 0,04)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

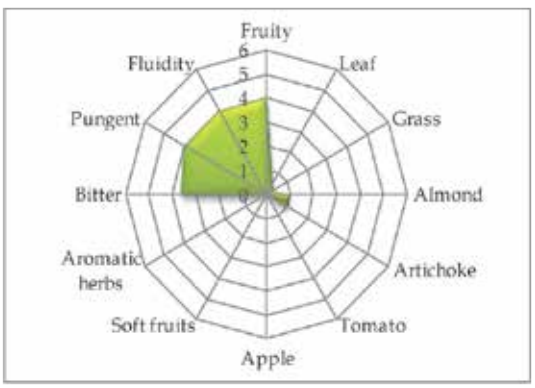
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**7,65 ± 0,47**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**14,86 ± 0,18**	Linolenic acid (ω3)	**0,92 ± 0,02**		
Palmitoleic acid	**1,18 ± 0,02**	Arachic acid	**0,24 ± 0,02**	Unsat./satured	**5,03 ± 0,05**
Stearic acid	**1,41 ± 0,07**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**8,02 ± 0,67**
Oleic acid	**72,80 ± 0,22**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity, medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**179 - 179**	**214 - 214**	**214 - 224**	**126 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**166 - 193**	**182 - 182**	**200 - 200**	

References:

1 - Cimato A., Cantini C., Sani G., In: *Atti Convegno Nazionale sulla Biodiversità*, Ed Delfino (2000), pp. 497-500.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Nera di Cantinella "

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **low (4,05 ± 0,36)**
Oil content (%): **medium (14,12 ± 1,26)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,24 ± 0,60)**
Blade width (cm): **broad (1,69 ± 0,29)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,12 ± 0,57)**
Number of flowers: **medium (20,55 ± 3,64)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,12 ± 0,24)**
Shape (length/width): **ovoid**
Symmetry: **slightly symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,48 ± 0,11)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

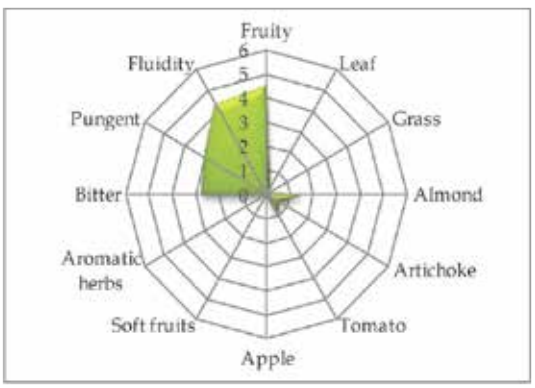
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**7,01 ± 0,63**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**11,40 ± 0,89**	Linolenic acid (ω3)	**0,76 ± 0,06**		
Palmitoleic acid	**0,87 ± 0,15**	Arachic acid	**0,29 ± 0,03**	Unsat./satured	**6,21 ± 0,54**
Stearic acid	**2,16 ± 2,24**	Eicosenoic acid	**0,09 ± 0,11**	ω6/ω3	**9,18 ± 0,61**
Oleic acid	**76,33 ± 1,59**	Behenic acid	**0,08 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and tomato, read sensations of artichoke. Balanced taste sensation with a medium-light bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**177 - 179**	**212 - 222**	**212 - 212**	**126 - 174**	**136 - 150**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**143 - 143**	**200 - 200**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo Calabrese*, Ist. Sper. Olivic. (2003), pp: 22.
2 - Lombardo N., Alessandrino.M., Belfiore T., *et al.* In: *Germoplasma olivicolo e tipicità dell'olio* (2004), pp: 64-70.
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Nera di Gonnos "

(synonymy: Majorca di Dorgali, Niedda di Gonnos, Olia tonda, Tonda di Cagliari, etc.)

Areal distribution or origin area: **Sardegna**
Flesh/pit weight ratio: **medium (6,17 ± 1,36)**
Oil content (%): **medium (45,98 ± 0,35)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,38 ± 0,59)**
Blade width (cm): **medium (1,34 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,30 ± 1,93)**
Number of flowers: **low (17,90 ± 2,47)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,23 ± 1,43)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (0,63 ± 0,20)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

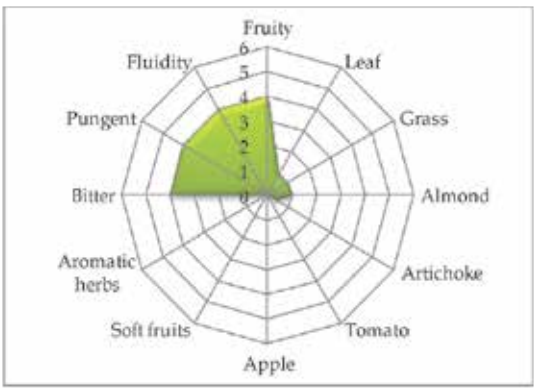
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,20 ± 1,71**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**9,57 ± 0,82**	Linolenic acid (ω3)	**0,78 ± 0,12**		
Palmitoleic acid	**1,42 ± 0,62**	Arachic acid	**0,16 ± 0,00**	Unsat./satured	**7,91 ± 0,78**
Stearic acid	**1,33 ± 0,00**	Eicosenoic acid	**0,04 ± 0,01**	ω6/ω3	**13,00 ± 0,23**
Oleic acid	**74,78 ± 1,46**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and read sensations of grass, leaves and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 172	**185 - 185**	**212 - 212**	**214 - 221**	**126 - 144**	**170 - 203**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**135 - 135**	**166 - 193**	**143 - 143**	**213 - 220**	

References:

1 - Mulas M., Agabbio M., Chessa I., In: *L'Olivo: le vecchie varietà della Sardegna*, Ed. Delfino (1994), pp. 310-338.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Nocellara del Belice "

(synonymy: Bariddara, Bianculidda, Nuciddara, Oliva da salari, Tunna, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (9,13 ± 1,07)**
Oil content (%): **medium (43,82 ± 1,04)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,39 ± 0,62)**
Blade width (cm): **broad (1,55 ± 0,16)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,80 ± 1,55)**
Number of flowers: **low (15,50 ± 3,92)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,58 ± 0,84)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,53 ± 0,09)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

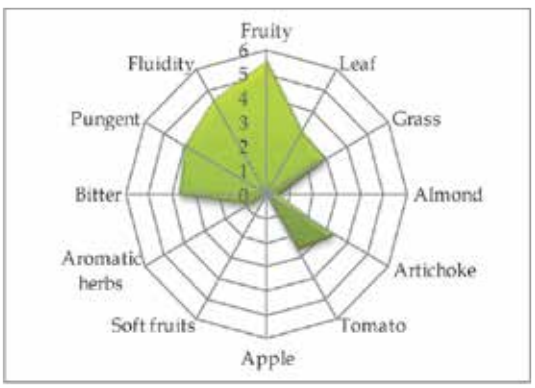
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,82 ± 3,35**	Lignoceric acid	**0,04 ± 0,01**
Palmitic acid	**10,50 ± 0,42**	Linolenic acid (ω3)	**0,92 ± 0,06**		
Palmitoleic acid	**0,70 ± 0,18**	Arachic acid	**0,37 ± 0,08**	Unsat./satured	**6,38 ± 0,03**
Stearic acid	**2,70 ± 0,48**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**9,50 ± 3,04**
Oleic acid	**75,16 ± 3,26**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of artichoke, tomato, and grass-leaves. Balanced taste sensation with strong bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 172	**177 - 181**	**212 - 212**	**214 - 214**	**144 - 144**	**150 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**166 - 166**	**166 - 193**	**182 - 182**	**108 - 205**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 48-52.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Nocellara etnea "

(synonymy: Augghialora, Nuciddara, Paturnisa, Pizzuta, Virdisa, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (8,71 ± 1,01)**
Oil content (%): **high (51,59 ± 0,93)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,62 ± 0,63)**
Blade width (cm): **medium (1,15 ± 0,15)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,05 ± 0,43)**
Number of flowers: **low (14,27 ± 2,53)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,45 ± 1,25)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (0,47 ± 0,09)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

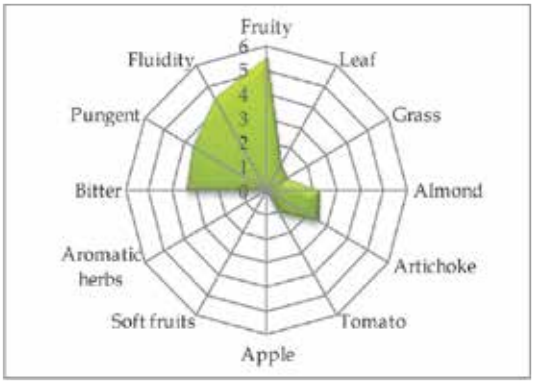
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,84 ± 1,83**	Lignoceric acid	**0,06 ± 0,04**
Palmitic acid	**12,70 ± 1,32**	Linolenic acid (ω3)	**0,91 ± 0,07**		
Palmitoleic acid	**0,76 ± 0,16**	Arachic acid	**0,39 ± 0,11**	Unsat./satured	**5,39 ± 0,57**
Stearic acid	**2,57 ± 0,34**	Eicosenoic acid	**0,14 ± 0,21**	ω6/ω3	**12,99 ± 1,61**
Oleic acid	**69,54 ± 0,44**	Behenic acid	**0,11 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of almond and artichoke, read sensations of tomato, grass and leaves. Balanced taste sensation with medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**181 - 181**	**212 - 212**	**210 - 210**	**124 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**143 - 182**	**220 - 220**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 54-58.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Nocellara messinese "

(synonymy: Nuciddara, Verdella.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (7,99 ± 0,61)**
Oil content (%): **medium (47,17 ± 0,74)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,49 ± 0,66)**
Blade width (cm): **medium (1,19 ± 0,14)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,49 ± 1,38)**
Number of flowers: **low (17,81 ± 2,45)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,20 ± 0,68)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,62 ± 1,75)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

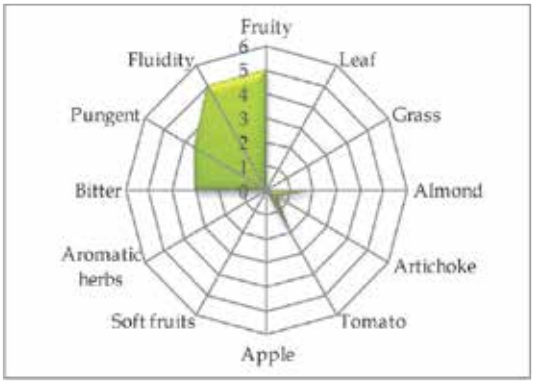
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**5,07 ± 0,63**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**9,42 ± 1,78**	Linolenic acid (ω3)	**0,93 ± 0,10**		
Palmitoleic acid	**0,32 ± 0,04**	Arachic acid	**0,29 ± 0,02**	Unsat./satured	**7,57 ± 1,29**
Stearic acid	**2,17 ± 0,02**	Eicosenoic acid	**0,04 ± 0,01**	ω6/ω3	**5,50 ± 1,27**
Oleic acid	**81,53 ± 1,16**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of almond and tomato. Balanced taste sensation with medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 176	**179 - 179**	**208 - 212**	**214 - 214**	**124 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**143 - 143**	**213 - 232**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 112-116.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Nociara "

(synonymy: Fra' Michele)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (6,27 ± 1,51)**
Oil content (%): **medium (46,65 ± 0,95)**
Purpose: **dual purpose**

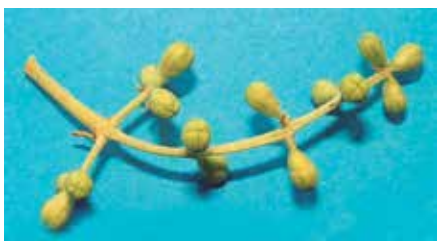
Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,86 ± 0,54)**
Blade width (cm): **broad (1,91 ± 0,30)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,67 ± 0,70)**
Number of flowers: **medium (18,75 ± 2,82)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,64 ± 0,68)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**



Pit characters
Weight of 100 pits (g): **medium (0,45 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **high**

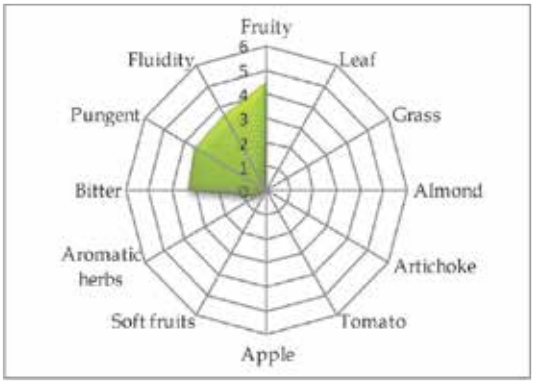
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,09 ± 1,32**	Lignoceric acid	**0,05 ± 0,02**
Palmitic acid	**12,73 ± 1,58**	Linolenic acid (ω3)	**0,84 ± 0,05**		
Palmitoleic acid	**1,03 ± 0,26**	Arachic acid	**0,36 ± 0,05**	Unsat./satured	**5,39 ± 0,54**
Stearic acid	**2,58 ± 0,22**	Eicosenoic acid	**0,12 ± 0,14**	ω6/ω3	**9,70 ± 1,71**
Oleic acid	**73,23 ± 2,19**	Behenic acid	**0,11 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **Fruity medium, with read sensations of aromatic herb. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 162	**179 - 185**	**212 - 222**	**210 - 214**	**124 - 126**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 193**	**182 - 182**	**164 - 232**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Istituto Sperimentale per l'Olivicoltura (2004), pp. 61-64.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Nolca "

(synonymy: Amele, Anolca, Dolce, Dolce Mele, Mele, Noce, etc.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (7,39 ± 1,91)**
Oil content (%): **medium (41,06 ± 1,56)**
Purpose: **table**

Morphological characters

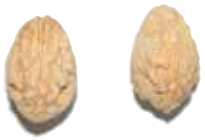
Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,84 ± 0,76)**
Blade width (cm): **broad (1,67 ± 0,35)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **short (2,45 ± 0,44)**
Number of flowers: **medium (16,84 ± 1,98)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (7,73 ± 0,75)**
Shape (length/width): **spherical**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,53 ± 0,06)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**



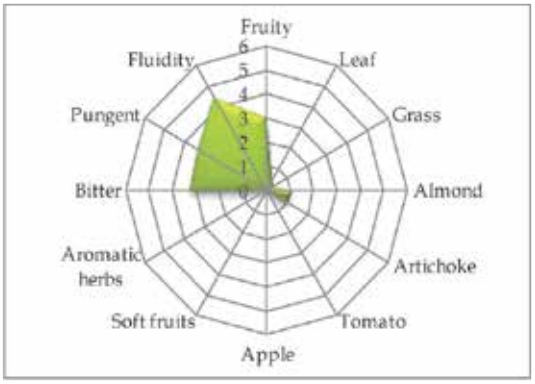
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,05 ± 0,21**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**11,09 ± 0,17**	Linolenic acid (ω3)	**0,87 ± 0,16**		
Palmitoleic acid	**1,00 ± 0,04**	Arachic acid	**0,22 ± 0,01**	Unsat./satured	**6,62 ± 0,35**
Stearic acid	**1,74 ± 0,07**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**12,89 ± 2,06**
Oleic acid	**72,90 ± 3,65**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium-light intensity. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 182	**177 - 185**	**208 - 208**	**214 - 214**	**124 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**153 - 153**	**166 - 177**	**150 - 182**	**108 - 170**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 57-60.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Nostrale di Fiano Romano "

(synonymy: Nostrale, Nostrale di Lauro, etc.)

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **medium (5,43 ± 0,64)**
Oil content (%): **medium (45,78 ± 0,47)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,92 ± 0,81)**
Blade width (cm): **broad (1,63 ± 0,14)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,62 ± 0,29)**
Number of flowers: **low (16,88 ± 2,11)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,47 ± 0,19)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,49 ± 0,13)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **high**

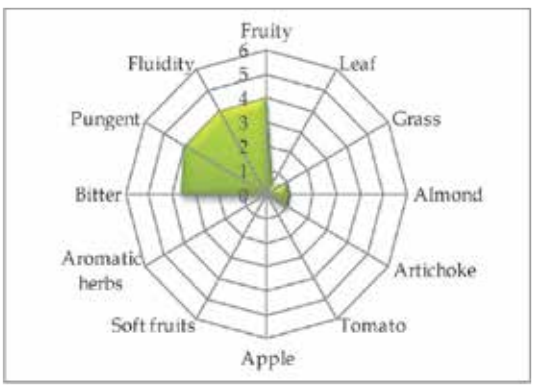
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,19 ± 1,12**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**15,08 ± 1,26**	Linolenic acid (ω3)	**0,82 ± 0,04**		
Palmitoleic acid	**0,75 ± 0,01**	Arachic acid	**0,24 ± 0,03**	Unsat./satured	**4,89 ± 0,42**
Stearic acid	**1,64 ± 0,08**	Eicosenoic acid	**0,01 ± 0,00**	ω6/ω3	**7,52 ± 0,97**
Oleic acid	**74,64 ± 0,11**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of artichoke, grass and almond. Balanced in flavours, with hints of bitter and spicy medium intensity, medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**179 - 181**	**212 - 222**	**214 - 224**	**126 - 144**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 182**	**182 - 210**	**185 - 185**	

References:

1 - Parlati M. V., Pandolfi S., In: *Olivo e Olio*, (2001), 4: pp. 67-72.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Nostrale di Rigali "

(synonymy: Borciona, Limona, Nostrale, Oliva, etc.)

Areal distribution or origin area: **Umbria**
Flesh/pit weight ratio: **high (7,97 ± 1,39)**
Oil content (%): **high (51,02 ± 1,57)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium(6,60 ± 0,63)**
Blade width (cm): **medium(1,21 ± 0,17)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,88 ± 0,15)**
Number of flowers: **low (16,21 ± 1,62)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,52 ± 0,11)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,52 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **low**

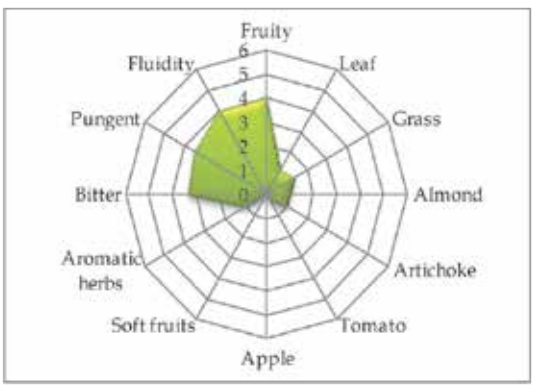
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,51 ± 1,31**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**12,19 ± 1,50**	Linolenic acid (ω3)	**0,87 ± 0,11**		
Palmitoleic acid	**0,84 ± 0,06**	Arachic acid	**0,43 ± 0,17**	Unsat./satured	**4,99 ± 0,45**
Stearic acid	**4,14 ± 1,69**	Eicosenoic acid	**0,12 ± 0,17**	ω6/ω3	**11,12 ± 2,84**
Oleic acid	**71,06 ± 2,51**	Behenic acid	**0,10 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of grass, leaves, and almond, read sensations of soft fruits. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 172	**179 - 181**	**214 - 218**	**218 - 224**	**124 - 130**	**184 - 197**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 143**	**166 - 182**	**150 - 161**	**205 - 220**	

References:

1 - Pannelli G., Alfei B., D' Ambrosio A., *et al.* In: *Varietà di olivo in Umbria*, Ed. Pliniana (2000), pp. 49-54.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Nostrana di Brisighella "

(synonymy: Nostrale di Brisighella, Nostrana.)

Areal distribution or origin area: **Emilia**
Flesh/pit weight ratio: **medium (6,82 ± 0,07)**
Oil content (%): **medium (40,34 ± 1,28)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,13 ± 0,50)**
Blade width (cm): **medium (1,11 ± 0,18)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,91 ± 1,87)**
Number of flowers: **medium (31,29 ± 2,18)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,12 ± 0,18)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,48 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

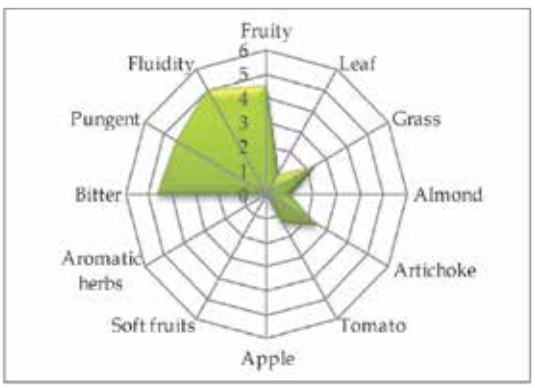
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,29 ± 1,01**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**14,09 ± 0,59**	Linolenic acid (ω3)	**0,90 ± 0,14**		
Palmitoleic acid	**2,10 ± 0,27**	Arachic acid	**0,30 ± 0,04**	Unsat./satured	**5,07 ± 0,26**
Stearic acid	**1,85 ± 0,05**	Eicosenoic acid	**0,10 ± 0,14**	ω6/ω3	**9,51 ± 2,85**
Oleic acid	**70,47 ± 2,12**	Behenic acid	**0,09 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with good sensation of grass, artichoke and tomato. Balanced in flavours, with hints of bitter and spicy medium-high intensity. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 198	**177 - 179**	**214 - 214**	**214 - 224**	**126 - 144**	**136 - 144**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 135**	**166 - 166**	**150 - 161**	**213 - 213**	

References:

1 - Rotondi A., Babini A.R. In: *Olivo e Olio*, (2001), 4: pp. 94-95.
2 - Cristoferi G., Rotondi A., Magli M. In *Il germoplasma dell'olivo in Emilia Romagna,* ISTEA_CNR (1997)
3 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Ogliara "

(synonymy: Ogliarola)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **high (8,06± 0,34)**
Oil content (%): **medium (48,05 ± 3,44)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,71 ± 0,53)**
Blade width (cm): **medium (1,38 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,98 ± 0,51)**
Number of flowers: **low (16,43 ± 1,87)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,42 ± 0,02)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,27 ± 0,01)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

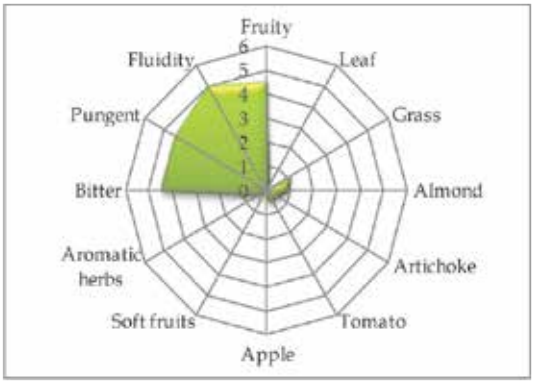
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,27 ± 0,25**	Lignoceric acid	**0,05 ± 0,04**
Palmitic acid	**13,80 ± 0,15**	Linolenic acid (ω3)	**0,77 ± 0,03**		
Palmitoleic acid	**1,26 ± 0,19**	Arachic acid	**0,37 ± 0,08**	Unsat./satured	**4,89 ± 0,17**
Stearic acid	**2,69 ± 0,47**	Eicosenoic acid	**0,09 ± 0,17**	ω6/ω3	**13,26 ± 0,23**
Oleic acid	**69,47 ± 0,79**	Behenic acid	**0,09 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of grass and almond, read sensations of artichoke and tomato. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 198	**179 - 185**	**214 - 222**	**214 - 214**	**124 - 126**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**164 - 193**	**161 - 161**	**213 - 232**	

References:

1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Ogliarola barese "

(synonymy: Cima di Bitonto, Baresana, Marinese, Nostrana, Paesana, etc.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **low (4,40 ± 0,30)**
Oil content (%): **medium (42,69 ± 1,85)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,55 ± 0,70)**
Blade width (cm): **medium (1,46 ± 0,18)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,74 ± 0,66)**
Number of flowers: **medium (19,89 ± 2,52)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,54 ± 0,45)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,49 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

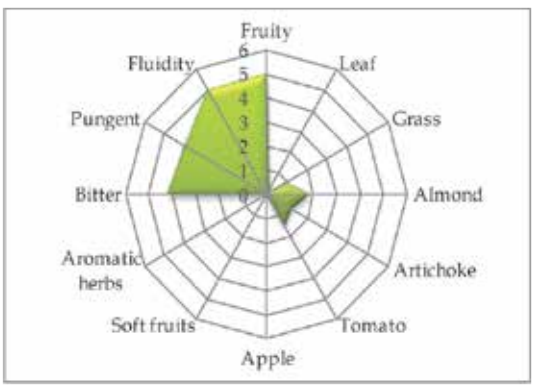
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,25 ± 2,52**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**12,19 ± 1,45**	Linolenic acid (ω3)	**0,90 ± 0,11**		
Palmitoleic acid	**0,95 ± 0,44**	Arachic acid	**0,31 ± 0,07**	Unsat./satured	**5,91 ± 0,68**
Stearic acid	**1,99 ± 0,27**	Eicosenoic acid	**0,12 ± 0,09**	ω6/ω3	**11,38 ± 1,85**
Oleic acid	**77,32 ± 2,87**	Behenic acid	**0,09 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and tomato, read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 194	**179 - 181**	**208 - 212**	**214 - 224**	**124 - 144**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 182**	**182 - 205**	**205 - 205**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 65-68.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Ogliarola del Vulture "

(synonymy: Nostrale, Ogliarola di Melfi, Rapolese, Ripolese, etc.)

Areal distribution or origin area: **Basilicata**
Flesh/pit weight ratio: **medium (6,22 ± 0,59)**
Oil content (%): **medium (44,23 ± 2,07)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,14 ± 0,57)**
Blade width (cm): **broad (1,53 ± 0,24)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,29 ± 0,30)**
Number of flowers: **low (16,19 ± 2,67)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,94 ± 0,15)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,27 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

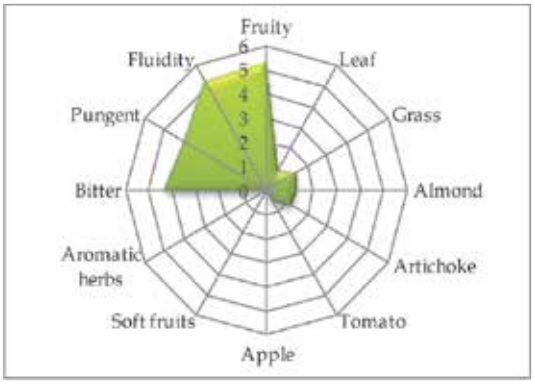
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**9,79 ± 0,63**	Lignoceric acid	**0,06 ± 0,04**
Palmitic acid	**13,62 ± 0,25**	Linolenic acid (ω3)	**0,84 ± 0,11**		
Palmitoleic acid	**1,09 ± 0,04**	Arachic acid	**0,47 ± 0,08**	Unsat./satured	**4,77 ± 0,06**
Stearic acid	**3,15 ± 0,22**	Eicosenoic acid	**0,15 ± 0,16**	ω6/ω3	**11,82 ± 1,11**
Oleic acid	**69,68 ± 0,77**	Behenic acid	**0,13 ± 0,05**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond, grass, and artichoke, read sensations of leaf. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**179 - 181**	**212 - 218**	**214 - 214**	**124 - 124**	**150 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**143 - 143**	**166 - 193**	**182 - 182**	**213 - 213**	

References:

1 - Rotundo A., Marone E. In: *Il germoplasma olivicolo lucano*, Olita - Potenza (2002), pp. 115-118.
2 - Rotundo A., Perri E.,Muzzalupo I., *et al.* In: *Il germoplasma olivicolo meridionale,* (2012 in press).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Ogliarola messinese "

(synonymy: Aliva grossa, Castriciana, Marcellese, Nostrale, Ogliara, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (9,75 ± 1,48)**
Oil content (%): **high (53,22 ± 0,60)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,32 ± 0,57)**
Blade width (cm): **medium (1,43 ± 0,16)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,07 ± 0,52)**
Number of flowers: **low (14,57 ± 2,16)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,56 ± 0,62)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **obvoius**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,60 ± 0,18)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

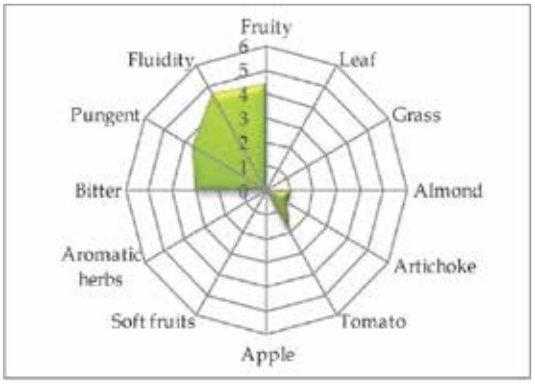
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**4,08 ± 0,44**	Lignoceric acid	**0,09 ± 0,07**
Palmitic acid	**10,00 ± 1,13**	Linolenic acid (ω3)	**0,72 ± 0,30**		
Palmitoleic acid	**0,55 ± 0,04**	Arachic acid	**0,45 ± 0,04**	Unsat./satured	**6,76 ± 0,62**
Stearic acid	**2,41 ± 0,17**	Eicosenoic acid	**0,19 ± 0,25**	ω6/ω3	**6,38 ± 3,26**
Oleic acid	**80,23 ± 1,09**	Behenic acid	**0,11 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of artichoke and tomato, read sensations of almond. Balanced taste sensation with medium-light bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 162	**169 - 181**	**208 - 212**	**214 - 214**	**124 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**166 - 182**	**166 - 193**	**182 - 182**	**108 - 205**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et al*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 60-64.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp.582-588.

" Ogliastro grande "

(synonymy: Ogliastro di Torre Orsaia)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **high (9,29 ± 1,74)**
Oil content (%): **medium (46,83 ± 1,22)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,56 ± 0,54)**
Blade width (cm): **medium (1,14 ± 0,14)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,80 ± 0,75)**
Number of flowers: **low (16,43 ± 1,87)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,15 ± 0,33)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,41 ± 0,04)**
Shape (length/width): **elongated**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

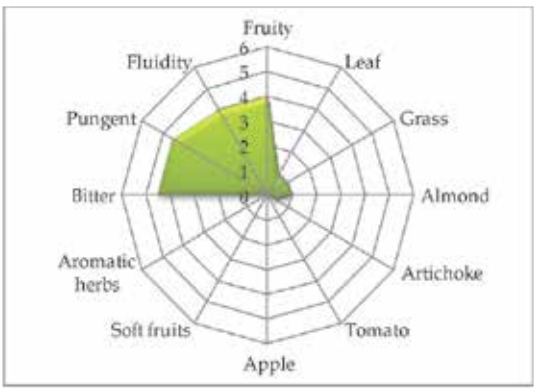
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,00 ± 0,00**	Linoleic acid (ω6)	**6,10 ± 0,14**	Lignoceric acid	**0,05 ± 0,02**
Palmitic acid	**11,79 ± 0,19**	Linolenic acid (ω3)	**0,68 ± 0,01**		
Palmitoleic acid	**1,91 ± 0,35**	Arachic acid	**0,31 ± 0,16**	Unsat./satured	**6,11 ± 0,22**
Stearic acid	**1,90 ± 0,36**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**8,95 ± 0,05**
Oleic acid	**75,56 ± 0,39**	Behenic acid	**0,03 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and read sensations of leaves, artichoke and grass. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**181 - 185**	**214 - 218**	**218 - 218**	**126 - 126**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**164 - 164**	**143 - 143**	**200 - 220**	

References:

1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

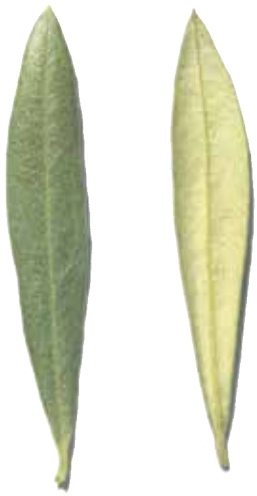
" Olivago "

(synonymy: Selvatico)

Areal distribution or origin area: **Umbria**
Flesh/pit weight ratio: **low (2,51 ± 0,06)**
Oil content (%): **medium (46,27 ± 0,08)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (5,47 ± 0,42)**
Blade width (cm): **medium (1,25 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,50 ± 1,06)**
Number of flowers: **low (17,84 ± 1,07)**

Fruit characters
Fresh weight of 100 fruits (g): **low (0,93 ± 0,12)**
Shape (length/width): **elongated**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,27 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

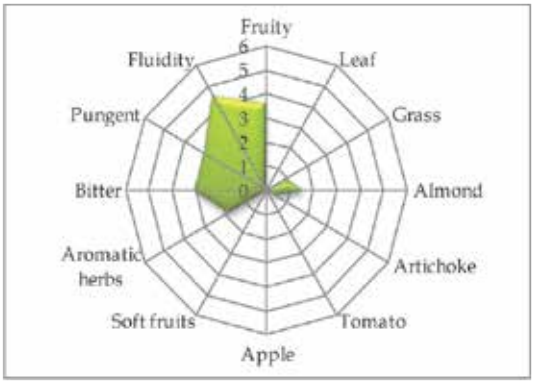
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,35 ± 0,87**	Lignoceric acid	**0,09 ± 0,09**
Palmitic acid	**14,55 ± 0,11**	Linolenic acid (ω3)	**0,78 ± 0,04**		
Palmitoleic acid	**3,05 ± 0,07**	Arachic acid	**0,25 ± 0,08**	Unsat./satured	**4,92 ± 0,31**
Stearic acid	**1,61 ± 0,18**	Eicosenoic acid	**0,18 ± 0,21**	ω6/ω3	**13,28 ± 0,46**
Oleic acid	**66,18 ± 0,56**	Behenic acid	**0,07 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of almond and aromatic herbs, read sensations of artichoke and grass. Balanced taste sensation with medium-light bitter and spicy. Medium -high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 198	**177 - 181**	**212 - 212**	**212 - 212**	**126 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 135**	**166 - 166**	**161 - 210**	**185 - 185**	

References:

1 - Preziosi P., Tini M. In: *Acta Horticulturae*, (1990), 286 pp. 85-88.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Olivastra seggianese "

(synonymy: Giogliaia, Olivastra di Montalcino, Olivastra di Seggiano, etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **high (7,94 ± 0,68)**
Oil content (%): **medium (47,20 ± 2,17)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,97 ± 0,49)**
Blade width (cm): **medium (1,27 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,71 ± 0,67)**
Number of flowers: **medium (18,25 ± 1,58)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,73 ± 0,62)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,38 ± 0,03)**
Shape (length/width): **spherical**
Mucron: **tenuous**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

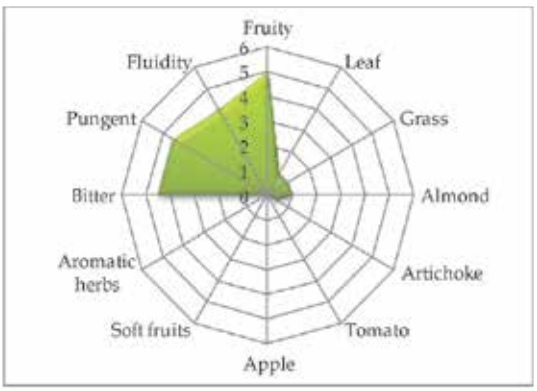
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**8,67 ± 0,41**	Lignoceric acid	**0,02 ± 0,00**
Palmitic acid	**13,82 ± 0,25**	Linolenic acid (ω3)	**0,77 ± 0,02**		
Palmitoleic acid	**1,50 ± 0,02**	Arachic acid	**0,29 ± 0,03**	Unsat./satured	**5,17 ± 0,12**
Stearic acid	**2,00 ± 0,03**	Eicosenoic acid	**0,01 ± 00,00**	ω6/ω3	**11,28 ± 0,30**
Oleic acid	**71,71 ± 0,03**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**179 - 185**	**212 - 218**	**210 - 212**	**126 - 144**	**150 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**150 - 150**	**156 - 164**	**156 - 182**	**205 - 205**	

References:

1 - Cimato A., Cantini C., Sani G., In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

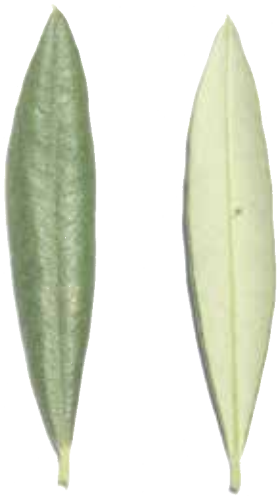
" Olivastro di Bucchianico "

(synonymy: Olivastro)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **medium (7,39 ± 0,12)**
Oil content (%): **high (53,11 ± 1,75)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **erect**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **short (4,37 ± 0,43)**
Blade width (cm): **medium (1,23 ± 0,15)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,55 ± 0,59)**
Number of flowers: **medium (18,63± 0,34)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,48 ± 0,37)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,30 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

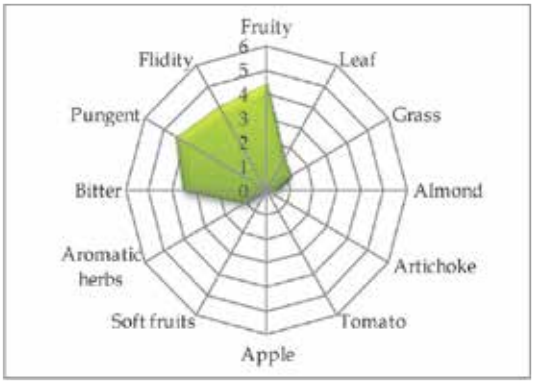
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,97 ± 0,20**	Lignoceric acid	**0,10 ± 0,01**
Palmitic acid	**11,50 ± 0,20**	Linolenic acid (ω3)	**0,41 ± 0,02**		
Palmitoleic acid	**0,50 ± 0,01**	Arachic acid	**0,49 ± 0,13**	Unsat./satured	**5,48 ± 0,07**
Stearic acid	**3,39 ± 0,35**	Eicosenoic acid	**0,25 ± 0,05**	ω6/ω3	**24,14 ± 0,89**
Oleic acid	**72,73 ± 0,06**	Behenic acid	**0,15 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of grass and leaves, read sensations of almond and aromatic herbs. Balanced taste sensation with a medium bitter and medium-high spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 210	**179 - 181**	**208 - 222**	**210 - 214**	**124 - 124**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**182 - 182**	**177 - 193**	**154 - 210**	**213 - 213**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 50-51.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 129-135.

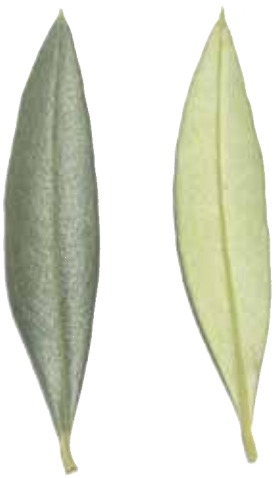
" Olivastro frentano "

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **low (4,98 ± 0,12)**
Oil content (%): **medium (42,40 ± 1,56)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,22 ± 0,37)**
Blade width (cm): **medium (1,45 ± 0,16)**
Shape (length/width): **elliptic**



Inflorescence characters
Inflorescence length (cm): **medium (3,40 ± 0,55)**
Number of flowers: **medium (18,48 ± 2,78)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,67 ± 0,01)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **medium (0,31 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

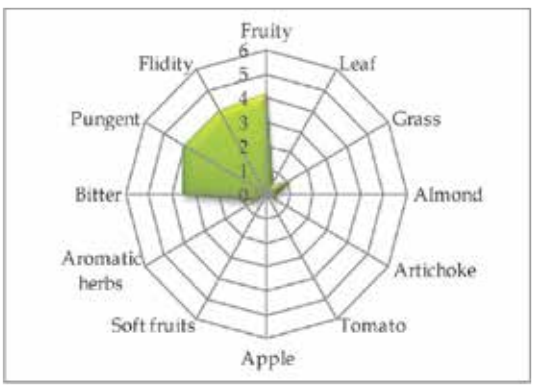
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**6,68 ± 0,43**	Lignoceric acid	**0,06 ± 0,06**
Palmitic acid	**11,54 ± 0,47**	Linolenic acid (ω3)	**0,70 ± 0,07**		
Palmitoleic acid	**1,43 ± 0,32**	Arachic acid	**0,27 ± 0,01**	Unsat./satured	**6,12 ± 0,03**
Stearic acid	**1,94 ± 0,24**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**9,67 ± 1,53**
Oleic acid	**75,73 ± 0,90**	Behenic acid	**0,13 ± 0,09**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of grass, read sensations of almond and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**177 - 181**	**208 - 222**	**210 - 214**	**126 - 144**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**182 - 182**	**177 - 177**	**154 - 210**	**205 - 232**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 52-53.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

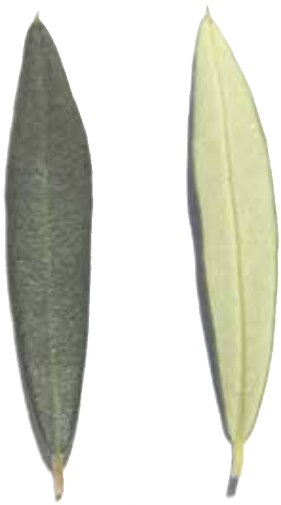
" Olivo da olio "

(synonymy: Cicinella, Minucciolo, Oliva a pasta gialla, Sessanella, etc.)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (6,91 ± 0,22)**
Oil content (%): **medium (46,08 ± 0,81)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (5,07 ± 0,44)**
Blade width (cm): **medium (1,24 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,86 ± 1,81)**
Number of flowers: **low (14,91 ± 0,95)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,19 ± 0,07)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,28 ± 0,02)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

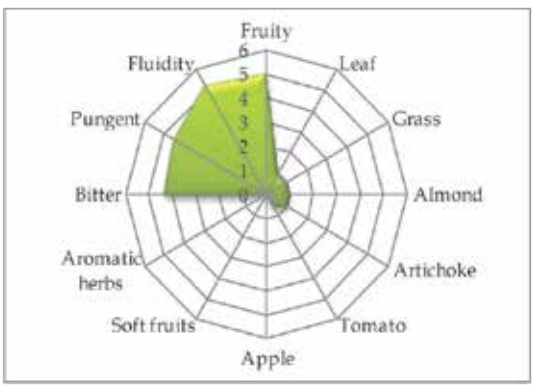
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,99 ± 0,59**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**13,91 ± 0,35**	Linolenic acid (ω3)	**0,77 ± 0,03**		
Palmitoleic acid	**1,22 ± 0,15**	Arachic acid	**0,30 ± 0,10**	Unsat./satured	**4,92 ± 0,06**
Stearic acid	**2,64 ± 0,06**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**12,98 ± 1,26**
Oleic acid	**70,19 ± 0,55**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of leaves, grass, almond and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 198	**179 - 185**	**214 - 214**	**218 - 218**	**124 - 130**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 154	**143 - 150**	**164 - 177**	**182 - 182**	**213 - 213**	

References:

1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Olivo da salare "

(synonymy: Gaetana)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (5,95 ± 0,50)**
Oil content (%): **medium (46,43 ± 1,84)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,86 ± 0,36)**
Blade width (cm): **medium (1,41 ± 0,14)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,69 ± 0,55)**
Number of flowers: **low (13,12 ± 1,40)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,48 ± 0,16)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,51 ± 0,06)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

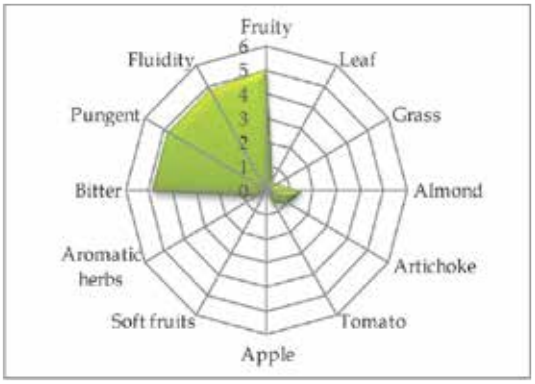
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**12,01 ± 1,24**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**12,39 ± 0,79**	Linolenic acid (ω3)	**0,60 ± 0,00**		
Palmitoleic acid	**1,92 ± 0,17**	Arachic acid	**0,31 ± 0,08**	Unsat./satured	**5,70 ± 0,39**
Stearic acid	**2,08 ± 0,81**	Eicosenoic acid	**0,03 ± 0,00**	ω6/ω3	**20,13 ± 1,91**
Oleic acid	**68,81 ± 0,14**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of leaves, grass, artichoke and tomato. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 194	**179 - 181**	**214 - 222**	**214 - 214**	**126 - 130**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 135**	**123 - 123**	**166 - 177**	**200 - 200**	

References:

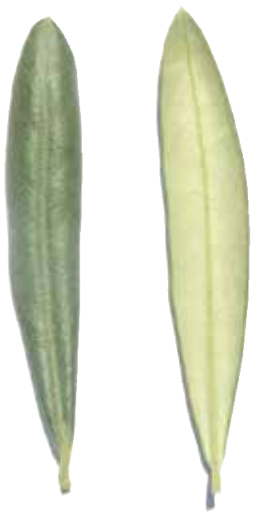
1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Olivo della Madonna "

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **low (3,87 ± 0,44)**
Oil content (%): **low (39,38 ± 0,08)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect-sprading**
Canopy-density: **medium-sparse**



Leaf characters
Blade length (cm): **medium (6,13 ± 0,49)**
Blade width (cm): **broad (2,08 ± 0,26)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,92 ± 0,49)**
Number of flowers: **medium (24,73 ± 1,31)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,34 ± 0,03)**
Shape (length/width): **elongated**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,49± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **low**

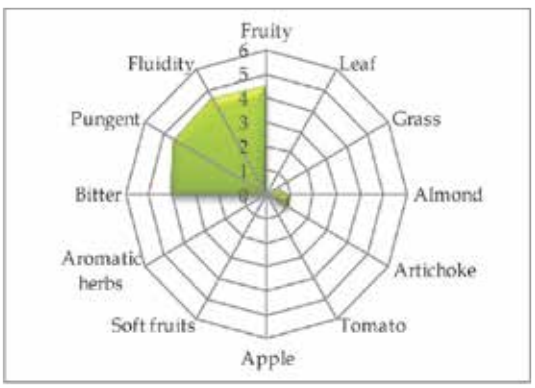
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**7,06 ± 0,13**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**12,33 ± 1,16**	Linolenic acid (ω3)	**0,69 ± 0,04**		
Palmitoleic acid	**0,72 ± 0,09**	Arachic acid	**0,23 ± 0,05**	Unsat./satured	**5,80 ± 0,24**
Stearic acid	**2,12 ± 0,79**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**10,17 ± 0,34**
Oleic acid	**76,13 ± 1,23**	Behenic acid	**0,05 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of artichoke and grass. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 206	**177 - 177**	**212 - 222**	**214 - 214**	**124 - 144**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**177 - 177**	**182 - 210**	**205 - 205**	

References:

1 - Basso M. In: *Le cultivar coltivate sui monti pisani*, Ann. Fac. Agr. Pisa (1958), 12 pp. 14-54.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

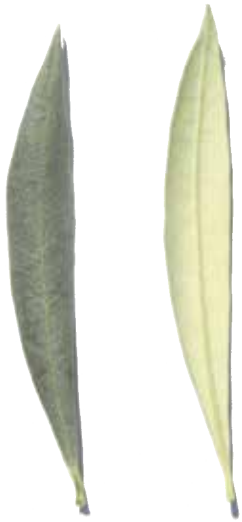
" Orbetana "

(synonymy: Marchigiana, Oliva bastarda, Oliva di San Francesco, Sarga, etc.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **medium (5,79 ± 0,31)**
Oil content (%): **medium (43,10 ± 1,65)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **long (7,06 ± 0,66)**
Blade width (cm): **medium (1,23 ± 0,12)**
Shape (length/width): **elliptic - lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,98 ± 0,46)**
Number of flowers: **medium (23,15 ± 0,94)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,29 ± 0,72)**
Shape (length/width): **spherical**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,58± 0,03)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

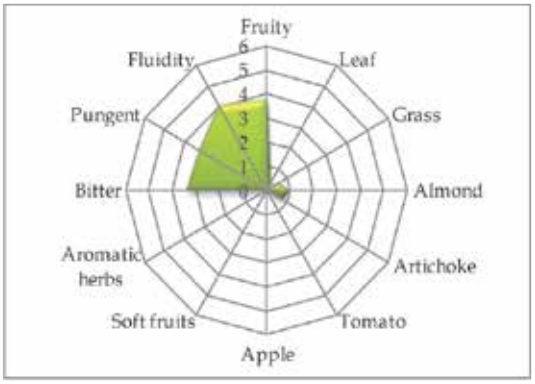
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**16,46 ± 1,50**	Lignoceric acid	**0,04 ± 0,02**
Palmitic acid	**15,24 ± 1,47**	Linolenic acid (ω3)	**0,31 ± 0,02**		
Palmitoleic acid	**1,58 ± 0,05**	Arachic acid	**0,81 ± 0,15**	Unsat./satured	**4,64 ± 0,46**
Stearic acid	**1,87 ± 0,10**	Eicosenoic acid	**0,26 ± 0,09**	ω6/ω3	**53,89 ± 0,56**
Oleic acid	**61,50 ± 0,68**	Behenic acid	**0,10 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity, medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 182	**177 - 189**	**214 - 218**	**218 - 224**	**124 - 144**	**184 - 197**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 135	**135 - 135**	**166 - 177**	**182 - 210**	**200 - 200**	

References:

1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche*, (2001), ASSAM pp. 85-88.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Ortice "

(synonymy: Iessana, Olivastro, Oliviello, Olivona, Testicolo di Gallo, etc.)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (5,43 ± 0,33)**
Oil content (%): **medium (43,38 ± 0,38)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect-spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,44 ± 0,56)**
Blade width (cm): **medium (1,11 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,45 ± 0,50)**
Number of flowers: **medium (22,84 ± 1,62)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,28 ± 0,22)**
Shape (length/width): **elongated**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,37 ± 0,02)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

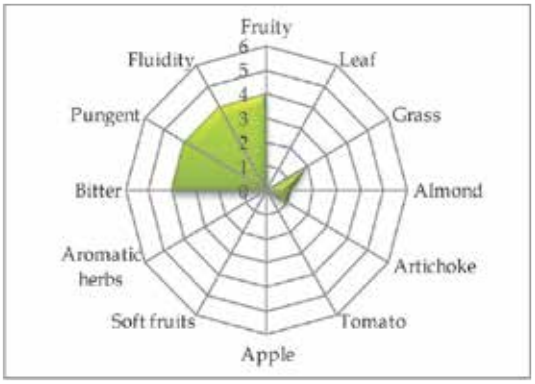
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,00 ± 0,00**	Linoleic acid (ω6)	**8,20 ± 0,19**	Lignoceric acid	**0,05 ± 0,02**
Palmitic acid	**13,54 ± 0,07**	Linolenic acid (ω3)	**0,89 ± 0,02**		
Palmitoleic acid	**0,72 ± 0,12**	Arachic acid	**0,41 ± 0,07**	Unsat./satured	**4,98 ± 0,17**
Stearic acid	**2,79 ± 0,31**	Eicosenoic acid	**0,20 ± 0,15**	ω6/ω3	**9,21 ± 0,37**
Oleic acid	**72,55 ± 0,72**	Behenic acid	**0,10 ± 0,03**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **medium fruity , with good sensation of grass, less almond and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 198	**177 - 185**	**218 - 218**	**214 - 224**	**126 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 166**	**166 - 182**	**161 - 205**	**164 - 164**	

References:

1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Ortolana "

(synonymy: Bella di San Lorenzo, Melella, etc.)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (6,46 ± 1,50)**
Oil content (%): **medium (45,28 ± 0,86)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,59 ± 0,51)**
Blade width (cm): **broad (1,63 ± 0,22)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,28 ± 2,87)**
Number of flowers: **medium (21,91 ± 1,51)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,37 ± 0,45)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,60 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

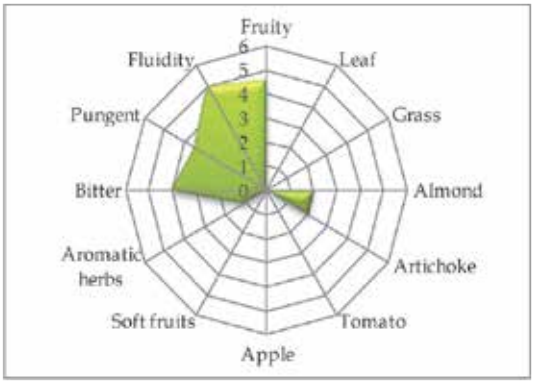
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,30 ± 0,84**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**14,19 ± 0,28**	Linolenic acid (ω3)	**0,70 ± 0,12**		
Palmitoleic acid	**0,75 ± 0,44**	Arachic acid	**0,26 ± 0,06**	Unsat./satured	**5,30 ± 0,22**
Stearic acid	**1,38 ± 0,34**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**13,39 ± 1,01**
Oleic acid	**72,59 ± 0,64**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of almond and artichoke, with read sensations of aromatic herbs. Balanced taste sensation with medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 194	**177 - 181**	**214 - 218**	**218 - 218**	**212 - 124**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**164 - 164**	**161 - 161**	**205 - 213**	

References:

1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Ottobratica "

(synonymy: Dedarico, Dolce, Mirtoleo, Ottobratico, Perciasacchi, etc.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **low (4,80 ± 2,06)**
Oil content (%): **medium (44,33 ± 2,49)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,56 ± 0,61)**
Blade width (cm): **broad (1,53 ± 0,18)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,00 ± 1,05)**
Number of flowers: **low(17,24 ± 2,78)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,74 ± 0,04)**
Shape (length/width): **elongated**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **medium (0,31 ± 0,06)**
Shape (length/width): **elongated**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

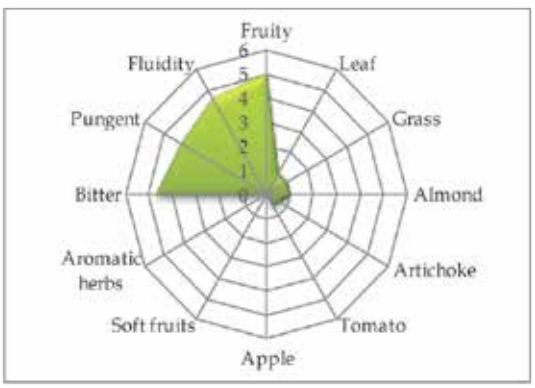
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**9,79 ± 0,85**	Lignoceric acid	**0,08 ± 0,06**
Palmitic acid	**14,19 ± 1,18**	Linolenic acid (ω3)	**0,65 ± 0,18**		
Palmitoleic acid	**1,12 ± 0,21**	Arachic acid	**0,32 ± 0,09**	Unsat./satured	**4,94 ± 0,52**
Stearic acid	**2,23 ± 0,36**	Eicosenoic acid	**0,15 ± 0,10**	ω6/ω3	**16,07 ± 4,27**
Oleic acid	**70,52 ± 2,02**	Behenic acid	**0,14 ± 0,06**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and medium spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**177 - 185**	**212 - 222**	**212 - 212**	**124 - 124**	**157 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 150	**143 - 143**	**177 - 193**	**143 - 154**	**170 - 205**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 11.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

" Ottobrina "

Areal distribution or origin area: **Liguria**
Flesh/pit weight ratio: **medium (5,54 ± 1,02)**
Oil content (%): **medium (46,48 ± 0,52)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,07 ± 0,32)**
Blade width (cm): **medium (1,31 ± 0,19)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,82 ± 1,56)**
Number of flowers: **medium (21,17 ± 2,68)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,74 ± 0,29)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,46 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

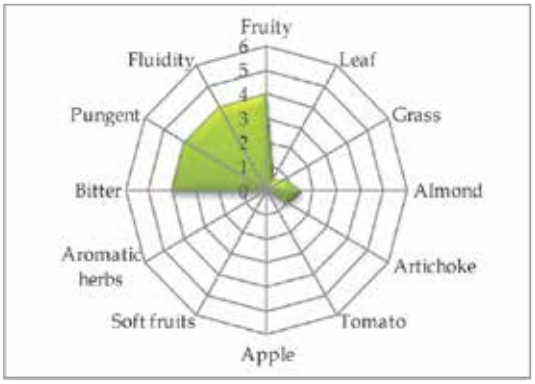
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**12,24 ± 0,12**	Lignoceric acid	**0,10 ± 0,01**
Palmitic acid	**14,92 ± 0,46**	Linolenic acid (ω3)	**0,59 ± 0,01**		
Palmitoleic acid	**1,95 ± 0,08**	Arachic acid	**0,30 ± 0,02**	Unsat./satured	**4,78 ± 0,15**
Stearic acid	**1,78 ± 0,05**	Eicosenoic acid	**0,30 ± 0,02**	ω6/ω3	**20,71 ± 0,65**
Oleic acid	**65,97 ± 0,49**	Behenic acid	**0,08 ± 0,00**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 166	**163 - 177**	**208 - 212**	**214 - 224**	**124 - 144**	**129 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 177**	**182 - 210**	**205 - 205**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo,* University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

" Paesana bianca "

(synonymy: Oliva bianca)

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **low (4,41 ± 0,14)**
Oil content (%): **medium (45,54 ± 0,49)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,82 ± 0,58)**
Blade width (cm): **broad (1,64 ± 0,21)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,53 ± 1,64)**
Number of flowers: **low (16,92 ± 0,87)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,49 ± 0,14)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,46 ± 0,04)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

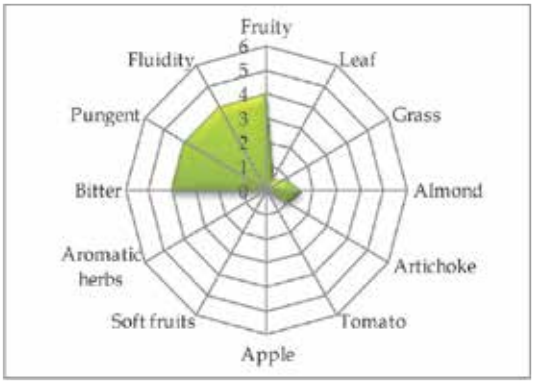
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**12,24 ± 0,12**	Lignoceric acid	**0,10 ± 0,01**
Palmitic acid	**14,92 ± 0,46**	Linolenic acid (ω3)	**0,59 ± 0,01**		
Palmitoleic acid	**1,95 ± 0,08**	Arachic acid	**0,30 ± 0,02**	Unsat./satured	**4,78 ± 0,15**
Stearic acid	**1,78 ± 0,05**	Eicosenoic acid	**0,30 ± 0,02**	ω6/ω3	**20,71 ± 0,65**
Oleic acid	**65,97 ± 0,49**	Behenic acid	**0,08 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 166	**163 - 177**	**208 - 212**	**214 - 224**	**124 - 144**	**129 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 177**	**182 - 210**	**205 - 205**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo,* University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

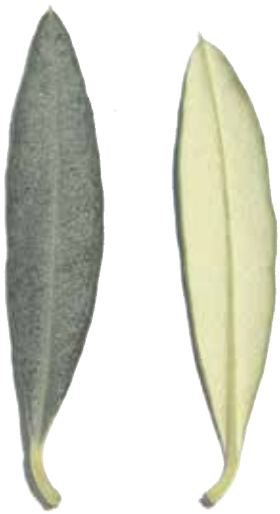
" Paesana nera "

(synonymy: Ceciarola, Cicerola, Oliva nera, etc.)

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **medium (6,41 ± 0,01)**
Oil content (%): **medium (47,93 ± 0,06)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (5,68 ± 0,46)**
Blade width (cm): **medium (1,35 ± 0,18)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,43 ± 1,08)**
Number of flowers: **medium (23,18 ± 1,07)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,15 ± 0,02)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,29± 0,04)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

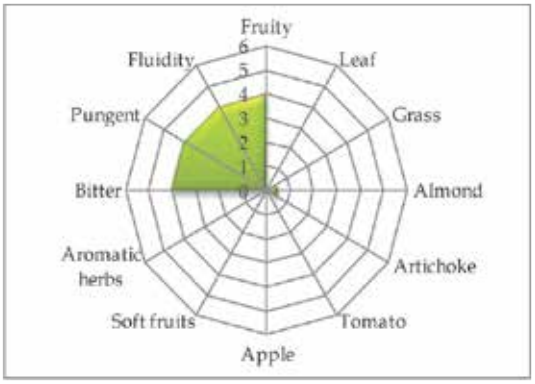
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**11,51 ± 0,26**	Lignoceric acid	**0,06 ± 0,03**
Palmitic acid	**14,66 ± 1,52**	Linolenic acid (ω3)	**0,73 ± 0,02**		
Palmitoleic acid	**1,39 ± 0,11**	Arachic acid	**0,30 ± 0,03**	Unsat./satured	**4,68 ± 0,20**
Stearic acid	**2,49 ± 1,00**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**15,87 ± 0,09**
Oleic acid	**67,58 ± 1,07**	Behenic acid	**0,08 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of artichoke, almond and grass. Balanced taste sensation with medium spicy and bitter. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 204	**177 - 177**	**212 - 222**	**214 - 214**	**124 - 130**	**150 - 150**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 182**	**177 - 193**	**154 - 205**	**213 - 213**	

References:

1 - Ente regionale di sviluppo agricolo per il Molise. In: *Il germoplasma dell'olivo nel Molise*, Quaderno divulgativo dell'ERSA (2000), n° 5.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

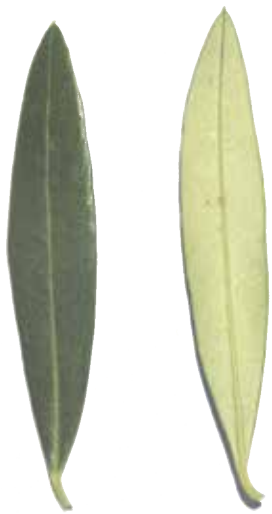
" Palmarola "

(synonymy: Palmina, Palmina, Parmarola, Selvatica, etc.)

Areal distribution or origin area: **Basilicata**
Flesh/pit weight ratio: **low (3,65 ± 0,24)**
Oil content (%): **medium (47,56 ± 0,90)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-drooping**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (5,64 ± 0,56)**
Blade width (cm): **broad (1,52 ± 0,23)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,64 ± 1,42)**
Number of flowers: **low (12,70 ± 2,37)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,72 ± 0,65)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,50 ± 0,07)**
Shape (length/width): **elliptic**
Mucron: **tenuous**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

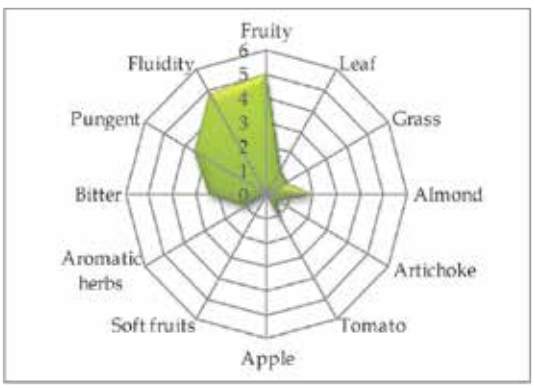
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,37 ± 1,94**	Lignoceric acid	**0,04 ± 0,01**
Palmitic acid	**13,02 ± 0,95**	Linolenic acid (ω3)	**0,74 ± 0,10**		
Palmitoleic acid	**1,71 ± 0,22**	Arachic acid	**0,25 ± 0,07**	Unsat./satured	**5,61 ± 0,41**
Stearic acid	**1,65 ± 0,13**	Eicosenoic acid	**0,14 ± 0,14**	ω6/ω3	**8,45 ± 1,62**
Oleic acid	**74,11 ± 2,43**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of almond and tomato, read sensations of grass, leaf, and aromatic herbs. Balanced taste sensation with medium-light bitter and medium spicy. Medium-high fluidity**.



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 198	**177 - 179**	**208 - 222**	**214 - 224**	**124 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 166**	**182 - 210**	**200 - 200**	

References:
1 - Rotundo A., Marone E. In: *Il germoplasma olivicolo lucano*, Olita - Potenza (2002), pp. 127-130.
2 - Rotundo A., Perri E.,Muzzalupo I., *et al*. In: *Il germoplasma olivicolo meridionale*, (2012 in press).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Pasola "

(synonymy: Fasola,Passula.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (5,36 ± 0,69)**
Oil content (%): **medium (44,38 ± 0,69)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,38 ± 0,77)**
Blade width (cm): **medium (1,48 ± 0,20)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,75 ± 0,44)**
Number of flowers: **medium (16,75 ± 2,66)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,63 ± 0,38)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,53 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **high**

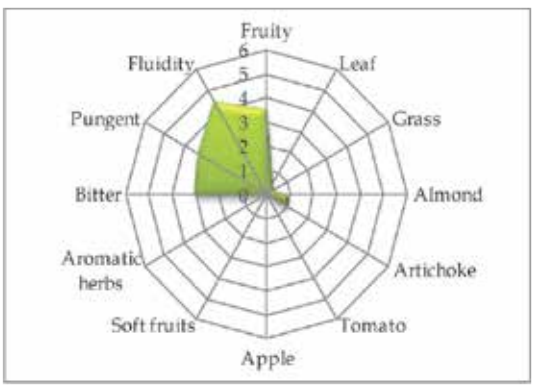
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,83 ± 0,76**	Lignoceric acid	**0,03 ± 0,02**
Palmitic acid	**10,89 ± 1,27**	Linolenic acid (ω3)	**0,88 ± 0,07**		
Palmitoleic acid	**0,86 ± 0,49**	Arachic acid	**0,31 ± 0,05**	Unsat./satured	**6,51 ± 0,46**
Stearic acid	**2,12 ± 0,59**	Eicosenoic acid	**0,11 ± 0,17**	ω6/ω3	**11,14 ± 0,88**
Oleic acid	**74,15 ± 1,05**	Behenic acid	**0,08 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium-light intensity. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**177 - 177**	**208 - 218**	**214 - 214**	**124 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 177**	**150 - 182**	**170 - 170**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 77-80.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Passulunara "

(synonymy: Palermitana, Passalunara, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (8,37 ± 1,20)**
Oil content (%): **medium (49,54 ± 0,20)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,65 ± 0,56)**
Blade width (cm): **medium (1,29 ± 0,12)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,20 ± 1,60)**
Number of flowers: **low (11,87 ± 2,03)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,08 ± 0,49)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (0,55 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **tenuous**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

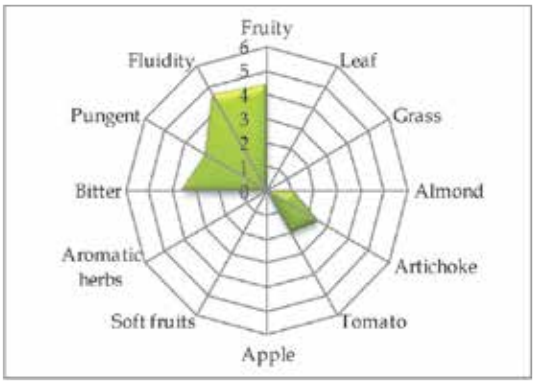
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,76 ± 0,29**	Lignoceric acid	**0,07 ± 0,01**
Palmitic acid	**10,36 ± 0,38**	Linolenic acid (ω3)	**0,33 ± 0,02**		
Palmitoleic acid	**0,58 ± 0,03**	Arachic acid	**0,61 ± 0,07**	Unsat./satured	**6,81 ± 0,21**
Stearic acid	**2,05 ± 0,03**	Eicosenoic acid	**0,40 ± 0,02**	ω6/ω3	**35,45 ± 0,95**
Oleic acid	**73,40 ± 0,07**	Behenic acid	**0,11 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of artichoke and tomato, read sensations of almond. Balanced taste sensation with medium-light bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 182	**179 - 179**	**212 - 222**	**210 - 210**	**124 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**182 - 182**	**108 - 205**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 59-64.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

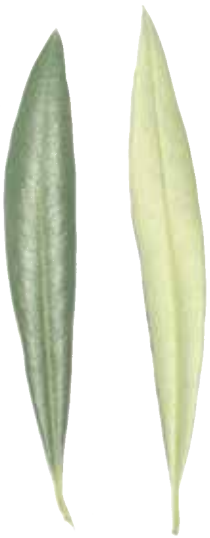
" Pennulara "

(synonymy: Caccuri, Nostrale di Caccuri.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **high (8,07 ± 0,80)**
Oil content (%): **medium (49,73 ± 1,98)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (6,08 ± 0,98)**
Blade width (cm): **medium (1,30 ± 0,09)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,43 ± 1,30)**
Number of flowers: **low (10,64 ± 1,03)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,66 ± 1,47)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,64 ± 0,22)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **low**

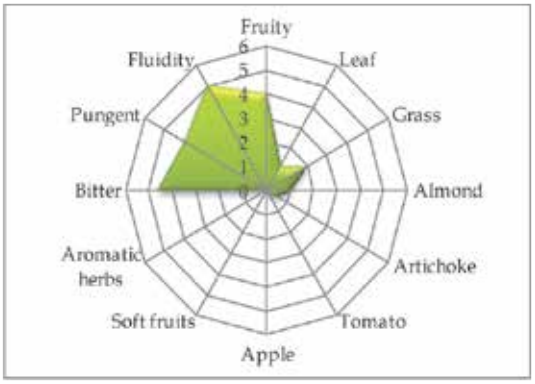
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,48 ± 0,73**	Lignoceric acid	**0,06 ± 0,01**
Palmitic acid	**8,57 ± 0,66**	Linolenic acid (ω3)	**0,69 ± 0,18**		
Palmitoleic acid	**0,44 ± 0,03**	Arachic acid	**0,32 ± 0,01**	Unsat./satured	**7,87 ± 0,48**
Stearic acid	**2,42 ± 0,03**	Eicosenoic acid	**0,03 ± 0,00**	ω6/ω3	**12,49 ± 2,13**
Oleic acid	**78,55 ± 1,05**	Behenic acid	**0,10 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of grass, read sensations of almond, artichoke and leaves. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**179 - 179**	**212 - 222**	**214 - 214**	**130 - 144**	**150 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 150	**143 - 143**	**177 - 193**	**143 - 182**	**209 - 220**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 25.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

" Peranzana "

(synonymy: Francese, Provenzale, Provenzana, Tondina, etc.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (4,86 ± 1,08)**
Oil content (%): **low (40,17 ± 2,01)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,51 ± 0,60)**
Blade width (cm): **medium (1,46 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **shotr (2,41 ± 0,49)**
Number of flowers: **medium (17,09 ± 1,33)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,10 ± 0,36)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,55 ± 0,07)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

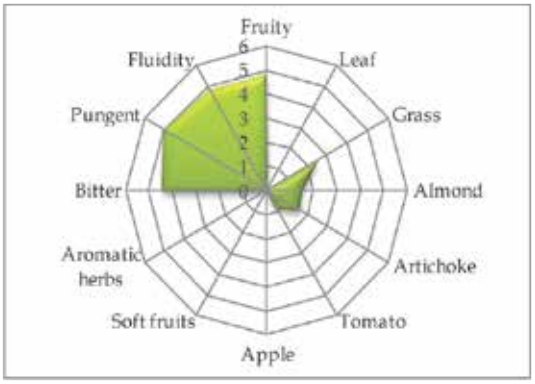
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**5,44 ± 0,37**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**11,47 ± 0,89**	Linolenic acid (ω3)	**0,95 ± 0,05**		
Palmitoleic acid	**0,61 ± 0,24**	Arachic acid	**0,29 ± 0,07**	Unsat./satured	**6,31 ± 0,42**
Stearic acid	**1,94 ± 0,24**	Eicosenoic acid	**0,02 ± 0,02**	ω6/ω3	**5,74 ± 0,16**
Oleic acid	**78,66 ± 1,20**	Behenic acid	**0,08 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium fruity, with good sensation of grass, less almond and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 172	**181 - 181**	**212 - 222**	**212 - 214**	**130 - 144**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**182 - 182**	**166 - 193**	**143 - 205**	**108 - 205**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 81-84.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Perciasacchi "

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **low (4,01 ± 0,03)**
Oil content (%): **medium (40,27 ± 0,55)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,70 ± 0,63)**
Blade width (cm): **medium (1,43 ± 0,16)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,70 ± 0,46)**
Number of flowers: **medium (20,97 ± 1,29)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,74 ± 0,11)**
Shape (length/width): **elongated**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,55 ± 0,02)**
Shape (length/width): **elongated**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **scabrous**
Number of grooves: **medium**

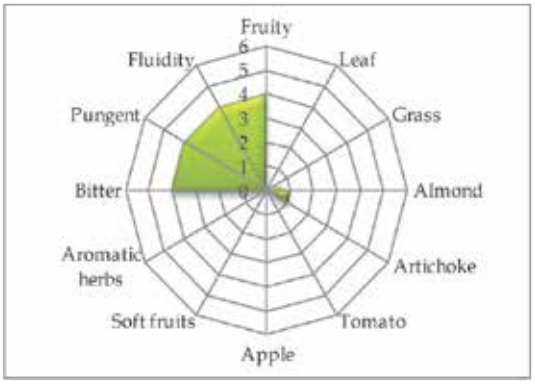
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**4,79 ± 1,33**	Lignoceric acid	**0,04 ± 0,02**
Palmitic acid	**7,40 ± 0,28**	Linolenic acid (ω3)	**0,79 ± 0,01**		
Palmitoleic acid	**2,61 ± 0,22**	Arachic acid	**0,27 ± 0,05**	Unsat./satured	**9,26 ± 0,08**
Stearic acid	**1,89 ± 0,45**	Eicosenoic acid	**0,01 ± 0,01**	ω6/ω3	**6,04 ± 1,57**
Oleic acid	**79,69 ± 0,35**	Behenic acid	**0,08 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of artichoke, almond and grass. Balanced taste sensation with medium spicy and bitter. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**181 - 181**	**212 - 214**	**214 - 224**	**124 - 144**	**136 - 136**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**164 - 177**	**161 - 182**	**213 - 220**	

References:

1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Piangente "

(synonymy: Alloro, Leccino pendulo, Leccino piangente, etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **medium (5,71 ± 1,27)**
Oil content (%): **low (39,31 ± 0,07)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,90 ± 0,36)**
Blade width (cm): **medium (1,33 ± 0,10)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,27 ± 1,09)**
Number of flowers: **low (17,74 ± 0,28)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,48 ± 0,47)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,37 ± 0,07)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

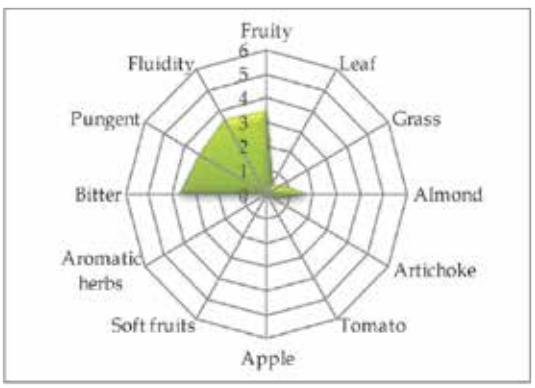
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**10,11 ± 0,13**	Lignoceric acid	**0,05 ± 0,02**
Palmitic acid	**10,31 ± 0,37**	Linolenic acid (ω3)	**0,93 ± 0,06**		
Palmitoleic acid	**0,40 ± 0,10**	Arachic acid	**0,28 ± 0,06**	Unsat./satured	**7,25 ± 0,98**
Stearic acid	**1,85 ± 0,41**	Eicosenoic acid	**0,06 ± 0,06**	ω6/ω3	**10,89 ± 0,80**
Oleic acid	**77,79 ± 1,33**	Behenic acid	**0,11 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 206	**181 - 181**	**208 - 212**	**214 - 214**	**126 - 126**	**157 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**154 - 154**	**205 - 205**	

References:

1 - Cimato A., Cantini C., Sani G., In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

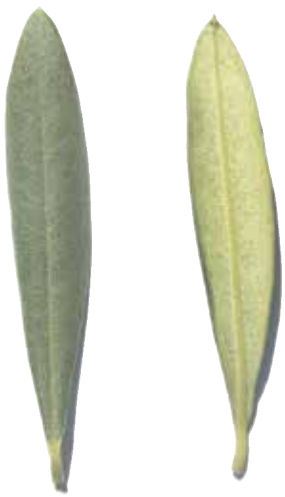
" Piantone di Falerone "

(synonymy: Piantone)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **medium (5,35 ± 0,25)**
Oil content (%): **medium (46,75 ± 1,14)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**



Leaf characters
Blade length (cm): **short (4,16 ± 0,33)**
Blade width (cm): **narrow (0,99 ± 0,08)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,54 ± 0,78)**
Number of flowers: **low (15,91 ± 0,87)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,42 ± 0,48)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,36 ± 0,04)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

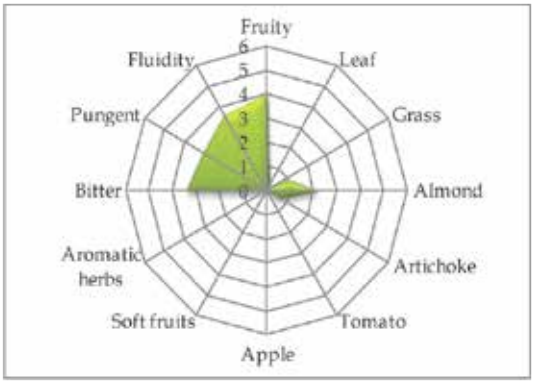
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**12,45 ± 0,50**	Lignoceric acid	**0,06 ± 0,02**
Palmitic acid	**11,89 ± 0,36**	Linolenic acid (ω3)	**0,31 ± 0,03**		
Palmitoleic acid	**1,36 ± 0,03**	Arachic acid	**0,57 ± 0,08**	Unsat./satured	**6,04 ± 0,23**
Stearic acid	**1,77 ± 0,12**	Eicosenoic acid	**0,30 ± 0,13**	ω6/ω3	**40,39 ± 1,89**
Oleic acid	**70,03 ± 0,24**	Behenic acid	**0,14 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium - light bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 182	**177 - 185**	**218 - 222**	**218 - 218**	**124 - 130**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 135**	**166 - 177**	**210 - 210**	**205 - 232**	

References:
1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche*, (2001), ASSAM pp. 93-96.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.

" Piantone di Mogliano "

(synonymy: Limoncella, Oliva riccia, Piantone, Raggiola, Rosciola, etc.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **medium (5,92 ± 0,23)**
Oil content (%): **medium (42,17 ± 1,36)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **short (4,92 ± 0,34)**
Blade width (cm): **medium (1,08 ± 0,09)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,56 ± 1,20)**
Number of flowers: **medium (21,08 ± 1,87)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,85 ± 0,75)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,36 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**12,45 ± 0,15**	Lignoceric acid	**0,08 ± 0,01**
Palmitic acid	**11,39 ± 0,15**	Linolenic acid (ω3)	**0,39 ± 0,02**		
Palmitoleic acid	**0,74 ± 0,05**	Arachic acid	**0,67 ± 0,10**	Unsat./satured	**6,07 ± 0,27**
Stearic acid	**2,36 ± 0,29**	Eicosenoic acid	**0,44 ± 0,06**	ω6/ω3	**31,69 ± 1,10**
Oleic acid	**70,75 ± 0,39**	Behenic acid	**0,08 ± 0,08**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**181 - 181**	**214 - 214**	**218 - 224**	**124 - 130**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 135**	**166 - 166**	**182 - 210**	**200 - 232**	

References:

1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche. ASSAM* (2001), pp. 97-100.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.

" Pidicuddara "

(synonymy: Minutedda, Ogliara, Oliva Nera, Piricuddara, Ugghiara, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (7,00 ± 0,57)**
Oil content (%): **medium (45,70 ± 1,58)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium weak**
Growth habit: **erect-spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,38 ± 0,75)**
Blade width (cm): **broad (1,54 ± 0,18)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,40 ± 1,21)**
Number of flowers: **medium (22,34 ± 2,75)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,00 ± 0,24)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **medium (0,38 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

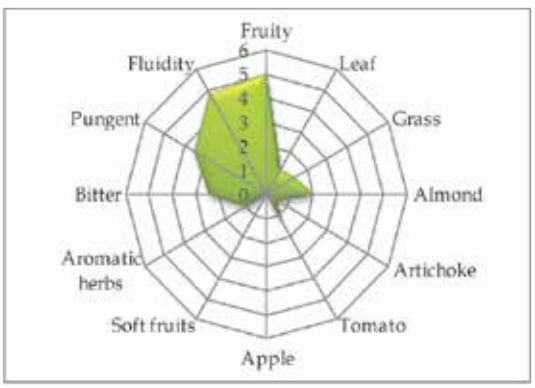
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,00 ± 0,00**	Linoleic acid (ω6)	**8,55 ± 0,52**	Lignoceric acid	**0,07 ± 0,03**
Palmitic acid	**11,46 ± 1,34**	Linolenic acid (ω3)	**0,88 ± 0,09**		
Palmitoleic acid	**0,64 ± 0,06**	Arachic acid	**0,47 ± 0,51**	Unsat./satured	**6,21 ± 0,75**
Stearic acid	**2,03 ± 0,34**	Eicosenoic acid	**0,29 ± 0,24**	ω6/ω3	**9,80 ± 1,55**
Oleic acid	**75,04 ± 0,26**	Behenic acid	**0,15 ± 0,05**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of almond, read sensations of tomato, grass, leaf and aromatic herbs. Balanced taste sensation with medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 182	**177 - 179**	**212 - 212**	**210 - 210**	**124 - 144**	**150 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 166**	**182 - 182**	**205 - 205**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 118-122.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Pignola "

(synonymy: Crovia, Merletta, Negretta, Pignola doppia, Pinola, etc.)

Areal distribution or origin area: **Liguria**
Flesh/pit weight ratio: **medium (6,26 ± 0,33)**
Oil content (%): **medium (40,20 ± 0,07)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium-rade**

Leaf characters
Blade length (cm): **medium (5,35 ± 0,42)**
Blade width (cm): **medium (1,21 ± 0,12)**
Shape (length/width): **elliptic - lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,83 ± 0,29)**
Number of flowers: **high (29,72 ± 2,80)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,35 ± 0,04)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,33 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

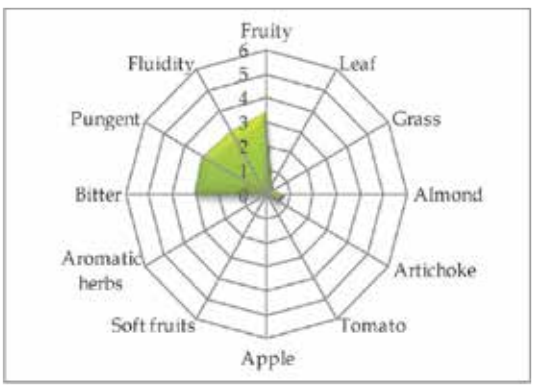
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,27 ± 0,04**	Lignoceric acid	**0,05 ± 0,00**
Palmitic acid	**13,81 ± 0,24**	Linolenic acid (ω3)	**0,31 ± 0,01**		
Palmitoleic acid	**1,19 ± 0,01**	Arachic acid	**0,48 ± 0,26**	Unsat./satured	**5,28 ± 0,02**
Stearic acid	**1,62 ± 0,08**	Eicosenoic acid	**0,38 ± 0,02**	ω6/ω3	**33,66 ± 0,68**
Oleic acid	**70,76 ± 0,31**	Behenic acid	**0,11 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium –light intensity, medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**181 - 185**	**214 - 222**	**214 - 214**	**126 - 130**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**177 - 193**	**154 - 182**	**205 - 205**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Pisciottana "

(synonymy: Ogliastrina, Olivo dell'ascea.)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (6,83 ± 1,47)**
Oil content (%): **medium (40,12 ± 0,85)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (6,67 ± 0,54)**
Blade width (cm): **medium (1,68 ± 0,16)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,12 ± 1,35)**
Number of flowers: **low (13,39 ± 0,29)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,83 ± 0,31)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,29 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

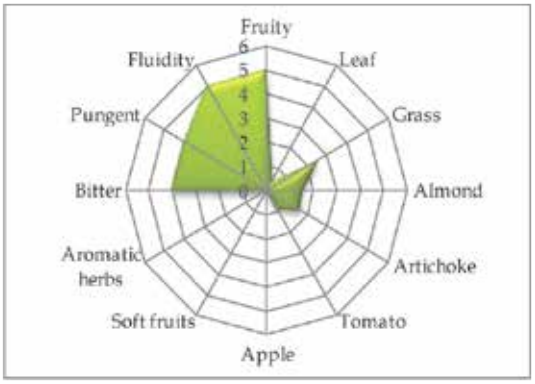
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**3,93 ± 0,80**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**11,20 ± 0,07**	Linolenic acid (ω3)	**0,75 ± 0,05**		
Palmitoleic acid	**1,18 ± 0,53**	Arachic acid	**0,24 ± 0,06**	Unsat./satured	**6,42 ± 0,42**
Stearic acid	**2,00 ± 0,72**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**5,19 ± 0,83**
Oleic acid	**79,72 ± 1,22**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with good sensation of grass, artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**177 - 181**	**214 - 222**	**218 - 218**	**121 - 124**	**136 - 150**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**177 - 182**	**150 - 161**	**213 - 232**	

References:

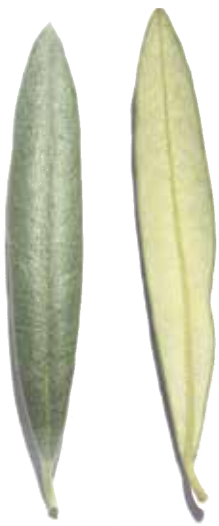
1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Pizz'è carroga "

Areal distribution or origin area: **Sardegna**
Flesh/pit weight ratio: **medium (7,24 ± 0,35)**
Oil content (%): **medium (46,53 ± 1,18)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (5,17 ± 0,51)**
Blade width (cm): **medium (1,24 ± 0,16)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,18 ± 0,97)**
Number of flowers: **low (12,68 ± 2,59)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,86 ± 0,59)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,63 ± 0,16)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

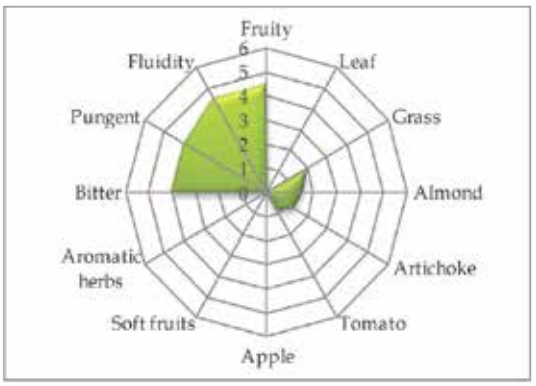
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,69 ± 0,68**	Lignoceric acid	**0,04 ± 0,03**
Palmitic acid	**15,00 ± 1,07**	Linolenic acid (ω3)	**0,82 ± 0,16**		
Palmitoleic acid	**1,49 ± 0,30**	Arachic acid	**0,25 ± 0,05**	Unsat./satured	**4,73 ± 0,35**
Stearic acid	**2,00 ± 0,26**	Eicosenoic acid	**0,03 ± 0,02**	ω6/ω3	**13,44 ± 2,84**
Oleic acid	**68,01 ± 1,61**	Behenic acid	**0,08 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium-high fruity, with good sensation of grass, less almond and artichoke. Balanced taste sensation, with bitter and spicy medium-high. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 172	**179 - 185**	**212 - 222**	**218 - 218**	**126 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 135**	**164 - 193**	**150 - 150**	**125 - 125**	

References:

1 - Mulas M., Agabbio M., Chessa I., In: *L'Olivo: le vecchie varietà della Sardegna*, Ed. Delfino (1994), pp. 310-338.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

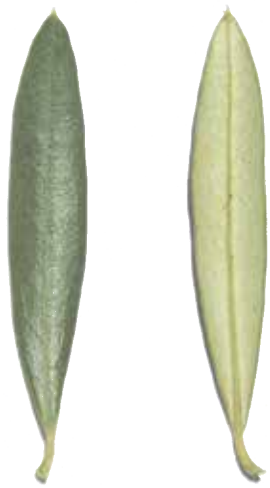
" Pizzutella "

(synonymy: Pizziricò, Pizzutedda, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (5,32 ± 0,39)**
Oil content (%): **medium (44,06 ± 2,06)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **short (4,90 ± 0,47)**
Blade width (cm): **medium (1,24 ± 0,15)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **short (2,12 ± 0,89)**
Number of flowers: **medium (24,41 ± 1,86)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,34 ± 0,44)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **medium (0,53 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **low**

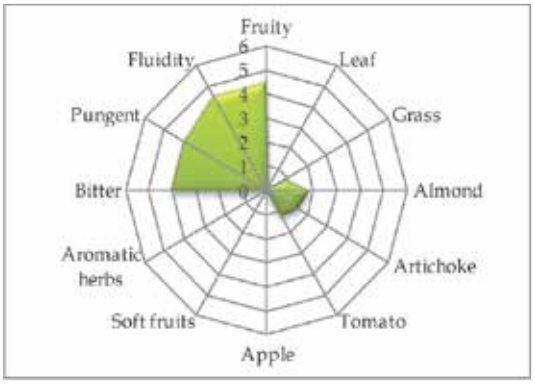
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,86 ± 1,07**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**14,67 ± 0,76**	Linolenic acid (ω3)	**0,96 ± 0,01**		
Palmitoleic acid	**1,61 ± 0,06**	Arachic acid	**0,33 ± 0,01**	Unsat./satured	**4,75 ± 0,19**
Stearic acid	**2,19 ± 0,17**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**12,37 ± 1,27**
Oleic acid	**66,63 ± 0,65**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and artichoke, read sensations of grass and tomato. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 182	**179 - 181**	**208 - 222**	**210 - 214**	**124 - 124**	**157 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 166**	**143 - 154**	**164 - 164**	

References:

1 - Bottari V., Spina P. In: *Le varietà di olivo coltivate in Sicilia*, Ann. Sper. Agr. (1953), 7: pp. 937-1004.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Posola "

(synonymy: D'Alannese, Pennese, Pizzutella, etc.)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **medium (7,46 ± 0,10)**
Oil content (%): **medium (41,04 ± 2,48)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,32 ± 0,40)**
Blade width (cm): **medium (1,06 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,25 ± 0,70)**
Number of flowers: **medium (15,51 ± 1,32)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,81± 0,02)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **medium (0,45 ± 0,01)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

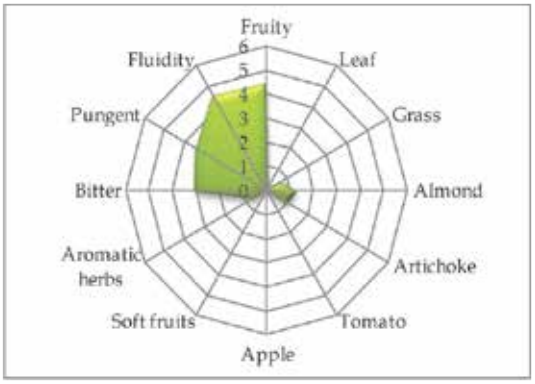
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**20,78 ± 0,14**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**14,63 ± 0,22**	Linolenic acid (ω3)	**0,85 ± 0,06**		
Palmitoleic acid	**5,26 ± 0,30**	Arachic acid	**0,23 ± 0,07**	Unsat./satured	**4,90 ± 0,11**
Stearic acid	**1,22 ± 0,18**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**24,60 ± 1,74**
Oleic acid	**51,47 ± 0,29**	Behenic acid	**0,04 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium fruity, with good sensation of almond and aromatic herbs, less grass and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**173 - 181**	**212 - 218**	**214 - 214**	**124 - 144**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 166**	**166 - 193**	**154 - 205**	**213 - 213**	

References:
1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 54-55.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 129-135.

" Posolella "

(synonymy: Gentile, Precoce.)

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **medium (5,11 ± 0,21)**
Oil content (%): **medium (43,01 ± 2,05)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,50 ± 0,38)**
Blade width (cm): **medium (1,00 ± 0,12)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,53 ± 1,28)**
Number of flowers: **medium (18,79 ± 1,69)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,60 ± 0,07)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,26 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

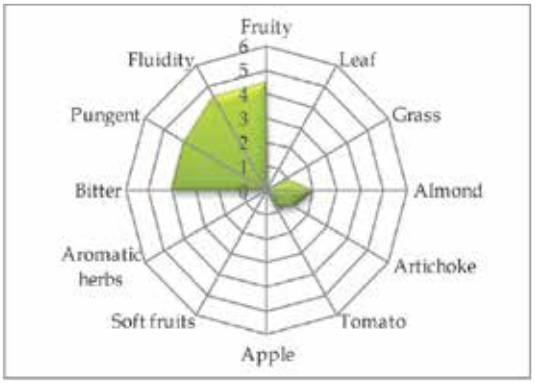
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,47 ± 0,21**	Lignoceric acid	**0,04 ± 0,03**
Palmitic acid	**12,44 ± 0,85**	Linolenic acid (ω3)	**0,82 ± 0,06**		
Palmitoleic acid	**0,96 ± 0,18**	Arachic acid	**0,27 ± 0,05**	Unsat./satured	**5,88 ± 0,49**
Stearic acid	**1,81 ± 0,15**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**11,64 ± 0,80**
Oleic acid	**73,15 ± 1,55**	Behenic acid	**0,05 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium-high fruity , with good sensation of almond, less grass, tomato and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 206	**173 - 185**	**214 - 218**	**214 - 214**	**126 - 144**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 193**	**154 - 205**	**213 - 213**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 56-57.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 129-135.

" Provenzale "

(synonymy: Olivastro, Olivone, etc.)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (7,05 ± 1,00)**
Oil content (%): **medium (41,78 ± 0,43)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,44 ± 0,46)**
Blade width (cm): **medium (1,06 ± 0,10)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,60 ± 0,86)**
Number of flowers: **low (13,49 ± 1,59)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,83 ± 0,08)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,36 ± 0,04)**
Shape (length/width): **ovoid**
Mucron: **tenuous**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

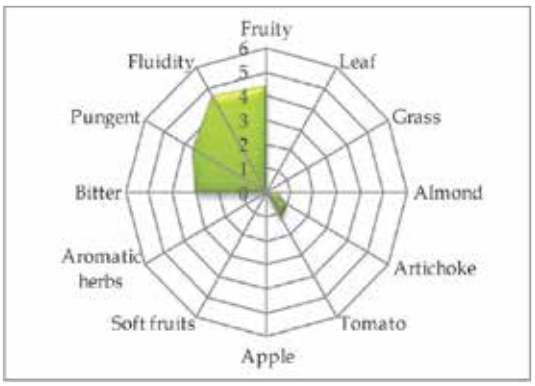
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**3,63 ± 0,71**	Lignoceric acid	**0,04 ± 0,02**
Palmitic acid	**12,63 ± 0,43**	Linolenic acid (ω3)	**0,89 ± 0,10**		
Palmitoleic acid	**2,28 ± 0,82**	Arachic acid	**0,23 ± 0,03**	Unsat./satured	**5,83 ± 0,25**
Stearic acid	**1,51 ± 0,27**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**4,08 ± 0,45**
Oleic acid	**76,63 ± 1,97**	Behenic acid	**0,07 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of artichoke and tomato, read sensations of almond. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 206	**179 - 181**	**218 - 218**	**218 - 218**	**126 - 144**	**157 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**143 - 150**	**164 - 164**	**143 - 210**	**200 - 220**	

References:

1 - Cimato A., Cantini C., Sani G., In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Puntella "

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **medium (5,08 ± 0,31)**
Oil content (%): **medium (45,09 ± 0,66)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,78 ± 0,45)**
Blade width (cm): **broad (1,53 ± 0,22)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,13 ± 0,36)**
Number of flowers: **medium (21,00 ± 0,87)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,66 ± 0,17)**
Shape (length/width): **spherical**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,28 ± 0,03)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

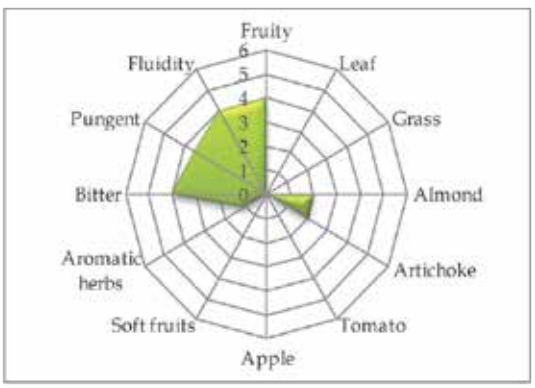
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**15,44 ± 0,65**	Lignoceric acid	**0,05 ± 0,04**
Palmitic acid	**16,71 ± 0,35**	Linolenic acid (ω3)	**0,96 ± 0,02**		
Palmitoleic acid	**2,93 ± 0,52**	Arachic acid	**0,29 ± 0,05**	Unsat./satured	**4,20 ± 2,10**
Stearic acid	**1,64 ± 0,07**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**16,15 ± 1,01**
Oleic acid	**58,86 ± 0,22**	Behenic acid	**0,10 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of artichoke and almond. Balanced taste sensation with medium spicy and bitter. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 198	**177 - 185**	**222 - 214**	**214 - 214**	**124 - 130**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**202 - 202**	**166 - 193**	**154 - 205**	**213 - 213**	

References:

1 - Castorina S. In: *Le varietà di olivo coltivate in Abruzzo*, Ann. Sper. Agr. (1954), 9 (6) pp. 11-53.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

" Racioppa "

(synonymy: Cioppella, Racioppella, Racioppa di Rivello, etc.)

Areal distribution or origin area: **Basilicata**
Flesh/pit weight ratio: **medium (5,37 ± 1,26)**
Oil content (%): **medium (46,38 ± 2,38)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect-sreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,59 ± 1,09)**
Blade width (cm): **medium (1,48 ± 0,38)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,48 ± 0,31)**
Number of flowers: **medium (19,58 ± 1,78)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,23 ± 0,32)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,36 ± 0,03)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

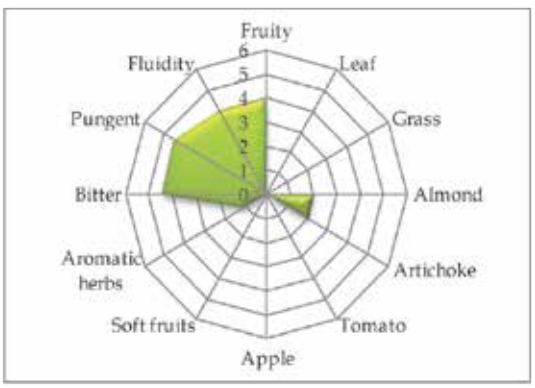
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**7,00 ± 0,38**	Lignoceric acid	**0,07 ± 0,05**
Palmitic acid	**13,21 ± 2,33**	Linolenic acid (ω3)	**0,62 ± 0,07**		
Palmitoleic acid	**2,03 ± 0,47**	Arachic acid	**0,27 ± 0,08**	Unsat./satured	**5,54 ± 0,98**
Stearic acid	**1,73 ± 0,13**	Eicosenoic acid	**0,15 ± 0,12**	ω6/ω3	**11,27 ± 0,89**
Oleic acid	**72,92 ± 2,98**	Behenic acid	**0,08 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of almond and artichoke, with read sensations of aromatic herbs. Balanced taste sensation with medium-high bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**179 - 185**	**208 - 208**	**212 - 214**	**124 - 130**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**161 - 205**	**220 - 232**	

References:

1 - Rotundo A., Marone E. In: *Il germoplasma olivicolo lucano*, Olita-Potenza (2002), pp. 135-138.
2 - Rotundo A., Perri E.,Muzzalupo I., *et al.* In: *Il germoplasma olivicolo meridionale*, (2012 in press).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

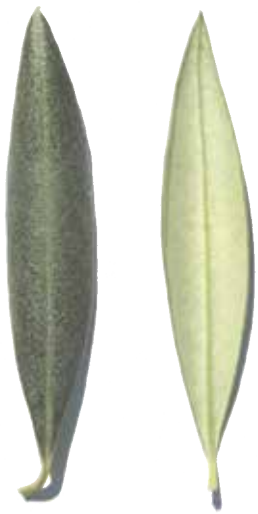
" Racioppella "

(synonymy: Cacaccella, Grappetella, Olivo a racioppella etc.)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (5,63 ± 1,39)**
Oil content (%): **medium (43,34 ± 0,97)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **erect-spreading**
Canopy-density: **medium-sparse**



Leaf characters
Blade length (cm): **medium (5,49 ± 0,45)**
Blade width (cm): **broad (1,51 ± 0,12)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,71 ± 0,72)**
Number of flowers: **medium (14,12 ± 1,27)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,40 ± 0,09)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,38 ± 0,07)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **high**

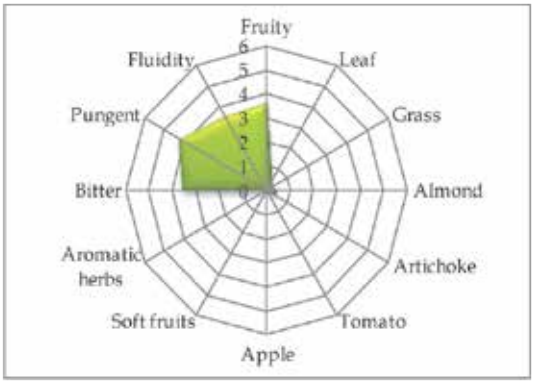
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**11,80 ± 0,85**	Lignoceric acid	**0,05 ± 0,02**
Palmitic acid	**10,26 ± 0,39**	Linolenic acid (ω3)	**0,81 ± 0,02**		
Palmitoleic acid	**1,17 ± 0,73**	Arachic acid	**0,61 ± 0,48**	Unsat./satured	**6,59 ± 0,15**
Stearic acid	**2,44 ± 0,03**	Eicosenoic acid	**0,15 ± 0,17**	ω6/ω3	**14,54 ± 1,48**
Oleic acid	**71,24 ± 0,36**	Behenic acid	**0,09 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of almond and leaves. Balanced taste sensation with a medium bitter and medium-high spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
194 - 198	**177 - 179**	**218 - 222**	**212 - 224**	**124 - 130**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 135**	**164 - 182**	**143 - 143**	**205 - 220**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

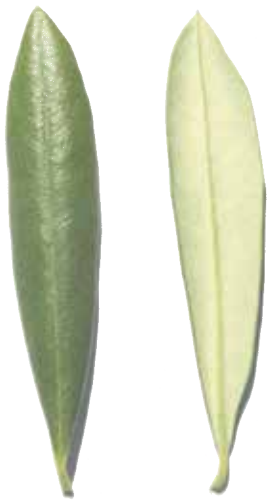
" Raggiola "

(synonymy: Corgiola, Correggiolo, Ragiola, Vergiola, etc.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **low (3,53 ± 0,61)**
Oil content (%): **medium (43,76 ± 1,15)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **dense**



Leaf characters
Blade length (cm): **medium (5,32 ± 0,37)**
Blade width (cm): **medium (1,38 ± 0,16)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,98 ± 0,38)**
Number of flowers: **medium (19,08 ± 1,21)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,40 ± 0,10)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,54 ± 0,09)**
Shape (length/width): **elliptic**
Mucron: **tenuous**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

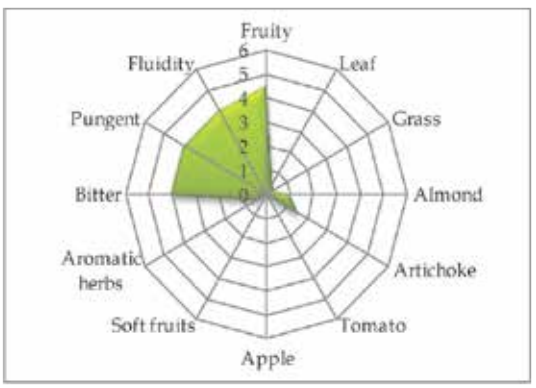
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,81 ± 0,22**	Lignoceric acid	**0,06 ± 0,01**
Palmitic acid	**13,35 ± 0,14**	Linolenic acid (ω3)	**0,87 ± 0,03**		
Palmitoleic acid	**1,64 ± 0,03**	Arachic acid	**0,49 ± 0,12**	Unsat./satured	**5,27 ± 0,12**
Stearic acid	**2,05 ± 0,08**	Eicosenoic acid	**0,39 ± 0,01**	ω6/ω3	**12,46 ± 0,66**
Oleic acid	**68,96 ± 0,26**	Behenic acid	**0,11 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity, medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**179 - 181**	**212 - 222**	**218 - 224**	**126 - 144**	**157 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 182**	**161 - 182**	**185 - 185**	

References:

1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche. ASSAM* (2001), pp. 105-108.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138–140.

" Raja sabina "

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **low (4,22 ± 0,71)**
Oil content (%): **low (42,18 ± 0,79)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,87 ± 0,47)**
Blade width (cm): **broad (1,53 ± 0,17)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,70 ± 1,43)**
Number of flowers: **low (17,08 ± 3,62)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,68 ± 0,36)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,52 ± 0,08)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slighltly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

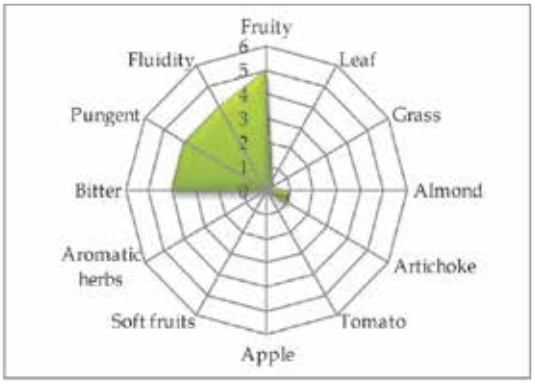
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**9,23 ± 1,30**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**13,28 ± 1,01**	Linolenic acid (ω3)	**0,76 ± 0,06**		
Palmitoleic acid	**1,44 ± 0,06**	Arachic acid	**0,22 ± 0,07**	Unsat./satured	**5,50 ± 0,49**
Stearic acid	**1,70 ± 0,07**	Eicosenoic acid	**0.03 ± 0,01**	ω6/ω3	**12,23 ± 2,64**
Oleic acid	**71,90 ± 2,47**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity, medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 198	**179 - 181**	**212 - 222**	**218 - 224**	**124 - 144**	**157 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 182**	**182 - 210**	**185 - 185**	

References:

1 - Lombardo N. In: *Le risorse genetiche vegetali presso gli* IRSA, MIPAF (2001), 1: pp. 361-405.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Ravece "

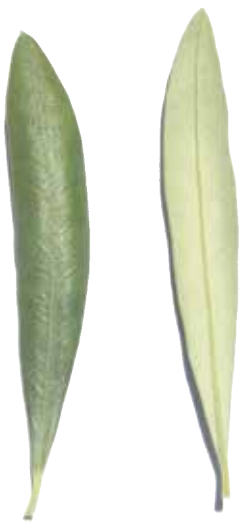
(synonymy: Curatona, Olivona, Ravaiola.)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **low (3,19 ± 0,20)**
Oil content (%): **medium (41,11 ± 1,67)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,98 ± 1,19)**
Blade width (cm): **medium (1,22 ± 0,27)**
Shape (length/width): **elliptic-lanceolate**



Inflorescence characters
Inflorescence length (cm): **medium (2,57 ± 2,38)**
Number of flowers: **low (14,76 ± 0,57)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,86 ± 0,10)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,68 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **scabrous**
Number of grooves: **high**

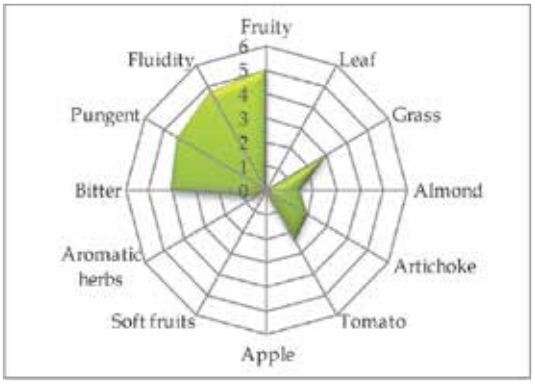
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**4,02 ± 0,40**	Lignoceric acid	**0,08 ± 0,02**
Palmitic acid	**12,43 ± 0,18**	Linolenic acid (ω3)	**0,85 ± 0,07**		
Palmitoleic acid	**2,20 ± 0,57**	Arachic acid	**0,27 ± 0,04**	Unsat./satured	**5,82 ± 0,03**
Stearic acid	**1,61 ± 0,28**	Eicosenoic acid	**0,32 ± 0,02**	ω6/ω3	**4,76 ± 0,87**
Oleic acid	**76,12 ± 0,82**	Behenic acid	**0,12 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of grass and tomato, read sensations of almond and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 194	**181 - 185**	**214 - 218**	**212 - 224**	**124 - 144**	**136 - 136**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**135 - 135**	**164 - 177**	**143 - 150**	**205 - 205**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Raza "

(synonymy: Bezzana, Olivo selvatico, Rezzana, etc.)

Areal distribution or origin area: **Veneto**
Flesh/pit weight ratio: **low (3,29 ± 0,20)**
Oil content (%): **medium (45,49 ± 1,11)**
Purpose: **oil**

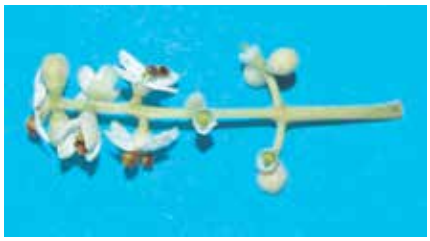
Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **short (4,85 ± 0,44)**
Blade width (cm): **medium (1,30 ± 0,14)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,33 ± 1,43)**
Number of flowers: **low (13,61 ± 0,94)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,17 ± 0,04)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**



Pit characters
Weight of 100 pits (g): **high (0,51 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **tenuous**
Symmetry: **slightly asymmetrc**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

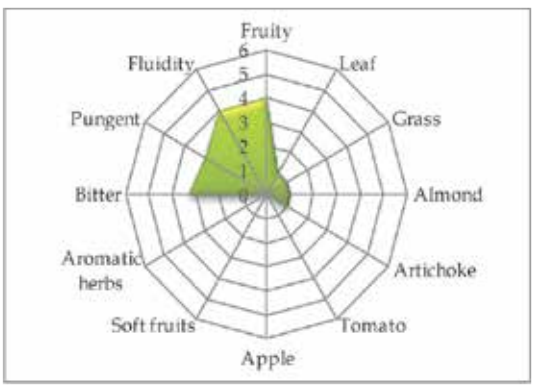
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**8,85 ± 0,13**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**13,74 ± 0,31**	Linolenic acid (ω3)	**0,71 ± 0,04**		
Palmitoleic acid	**2,19 ± 0,03**	Arachic acid	**0,25 ± 0,06**	Unsat./satured	**5,24 ± 0,20**
Stearic acid	**1,81 ± 0,10**	Eicosenoic acid	**0,01 ± 0,01**	ω6/ω3	**12,41 ± 0,47**
Oleic acid	**70,49 ± 0,65**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with good sensation of leaves, grass, and artichoke. Balanced in flavours, with hints of bitter and spicy medium-light intensity. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**179 - 179**	**212 - 222**	**214 - 224**	**126 - 144**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**177 - 182**	**182 - 220**	**185 - 185**	

References:

1 - Carocci Buzi C. In: *Annali Istituto Sperimentale per l'Olivicoltura e l'Oleificio*, Ed. Bracco Imperia (1965), pp. 1-31
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Razzo "

(synonymy: Grossaio, Pendaglio, Razzarolo, etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **medium (5,79 ± 1,07)**
Oil content (%): **medium (43,83 ± 0,25)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **short (4,94 ± 0,37)**
Blade width (cm): **medium (1,06 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,61 ± 1,29)**
Number of flowers: **low (16,61 ± 0,85)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,35 ± 0,08)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **medium (0,36 ± 0,05)**
Shape (length/width): **elliptic**
Mucron: **tenuous**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

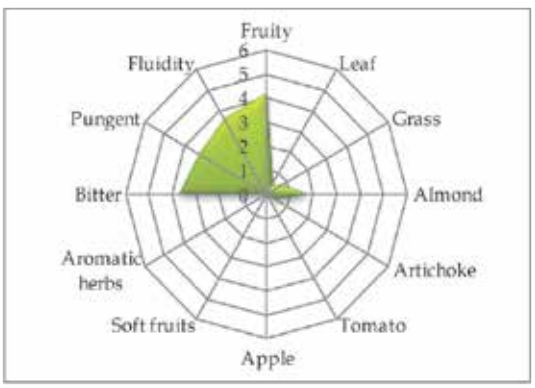
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,63 ± 0,50**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**14,20 ± 0,14**	Linolenic acid (ω3)	**0,73 ± 0,05**		
Palmitoleic acid	**1,31 ± 0,04**	Arachic acid	**0,24 ± 0,05**	Unsat./satured	**4,95 ± 0,11**
Stearic acid	**2,24 ± 0,14**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**14,61 ± 0,23**
Oleic acid	**69,42 ± 0,24**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium - light bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**181 - 185**	**208 - 212**	**210 - 214**	**124 - 130**	**150 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 144	**150 - 150**	**177 - 177**	**154 - 205**	**205 - 205**	

References:

1 - Cimato A., Cantini C., Sani G., In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138–140.

" Razzola "

(synonymy: Corno maurino, Fischiettara, Martina a cornetto, Olivo femmina, Razzuola, etc.)

Areal distribution or origin area: **Liguria**
Flesh/pit weight ratio: **low (4,35 ± 0,15)**
Oil content (%): **medium (46,14 ± 1,96)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,79 ± 0,77)**
Blade width (cm): **broad (1,63 ± 0,23)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,24 ± 2,11)**
Number of flowers: **medium (19,03 ± 1,88)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,38 ± 0,12)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,47 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

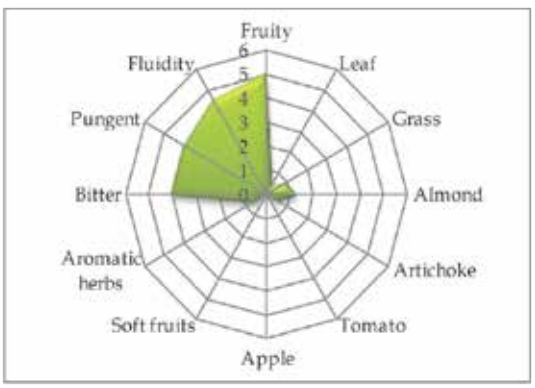
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,99 ± 0,80**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**6,52 ± 0,81**	Linolenic acid (ω3)	**0,92 ± 0,02**		
Palmitoleic acid	**0,97 ± 0,08**	Arachic acid	**0,29 ± 0,02**	Unsat./satured	**10,72 ± 1,00**
Stearic acid	**1,77 ± 0,18**	Eicosenoic acid	**0,01 ± 0,00**	ω6/ω3	**7,65 ± 1,05**
Oleic acid	**81,49 ± 0,11**	Behenic acid	**0,07 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium fruity, with good sensation of almond and aromatic herbs, less grass and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 206	**181 - 181**	**214 - 222**	**218 - 224**	**126 - 144**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**150 - 150**	**177 - 182**	**182 - 205**	**200 - 200**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" Riminino "

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **medium (6,84 ± 0,63)**
Oil content (%): **low (38,45 ± 1,02)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,29 ± 0,52)**
Blade width (cm): **broad (1,63 ± 0,14)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (4,67 ± 0,65)**
Number of flowers: **high (28,59 ± 2,63)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,61 ± 0,27)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,45 ± 0,01)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

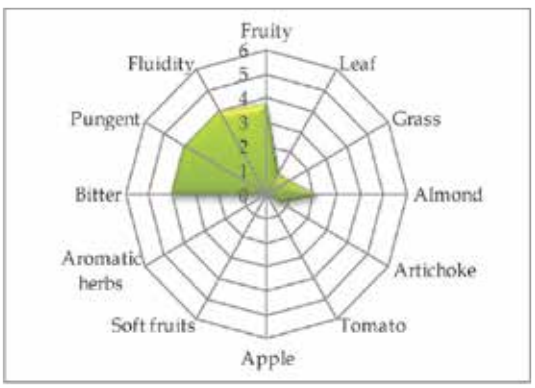
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,76 ± 0,15**	Lignoceric acid	**0,02 ± 0,00**
Palmitic acid	**12,82 ± 0,23**	Linolenic acid (ω3)	**0,71 ± 0,15**		
Palmitoleic acid	**1,28 ± 0,53**	Arachic acid	**0,29 ± 0,05**	Unsat./satured	**5,44 ± 0,27**
Stearic acid	**2,34 ± 0,25**	Eicosenoic acid	**0,01 ± 0,00**	ω6/ω3	**9,74 ± 2,33**
Oleic acid	**74,49 ± 1,92**	Behenic acid	**0,06 ± 0,00**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with good sensation of almond, grass, and artichoke. Balanced in flavours, with hints of bitter and spicy medium intensity. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 198	**177 - 181**	**214 - 222**	**214 - 224**	**126 - 144**	**157 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 182**	**166 - 177**	**143 - 182**	**205 - 205**	

References:

1 - Lombardo N. In: *Le risorse genetiche vegetali presso gli* IRSA, MIPAF (2001), 1: pp. 361-405.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Ritonnella "

(synonymy: Marinella, Romanella, Tonnella, etc.)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (7,24 ± 0,16)**
Oil content (%): **medium (45,36 ± 2,24)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **short (4,81 ± 0,41)**
Blade width (cm): **medium (1,32 ± 0,14)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,73 ± 0,62)**
Number of flowers: **medium (21,19 ± 1,77)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,74 ± 0,18)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,46 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **tenuous**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

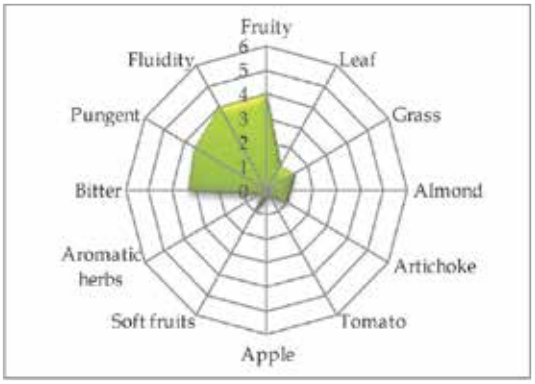
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,72 ± 0,39**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**10,31 ± 0,97**	Linolenic acid (ω3)	**0,87 ± 0,02**		
Palmitoleic acid	**0,71 ± 0,06**	Arachic acid	**0,32 ± 0,04**	Unsat./satured	**4,36 ± 0,14**
Stearic acid	**6,18 ± 0,60**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**9,98 ± 0,18**
Oleic acid	**72,17 ± 0,09**	Behenic acid	**0,05 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of almond, grass and leaves, read sensations of soft fruits. Balanced taste sensation with medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**177 - 181**	**214 - 218**	**212 - 218**	**126 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 150	**143 - 143**	**193 - 193**	**154 - 161**	**213 - 220**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

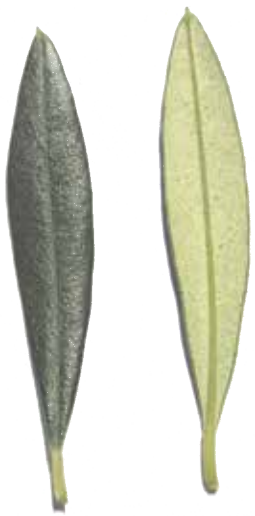
" Rizzitella "

(synonymy: Rizzinella)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **low (3,93 ± 0,56)**
Oil content (%): **medium (41,49 ± 1,79)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium-sparse**



Leaf characters
Blade length (cm): **short (4,28 ± 0,31)**
Blade width (cm): **medium (1,04 ± 0,09)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,41 ± 0,50)**
Number of flowers: **low (17,66 ± 0,88)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,35 ± 0,27)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,40 ± 0,03)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

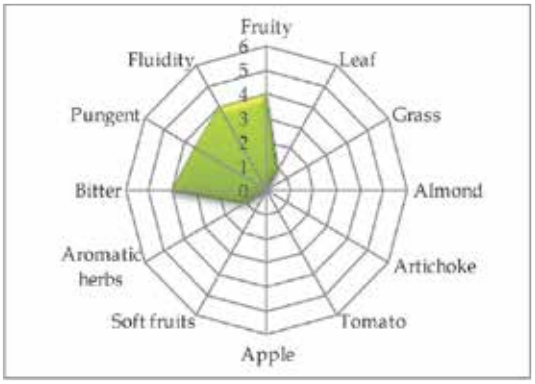
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,75 ± 0,05**	Lignoceric acid	**0,05 ± 0,04**
Palmitic acid	**12,77 ± 0,50**	Linolenic acid (ω3)	**0,69 ± 0,02**		
Palmitoleic acid	**2,03 ± 0,03**	Arachic acid	**0,24 ± 0,05**	Unsat./satured	**5,45 ± 0,15**
Stearic acid	**2,16 ± 0,05**	Eicosenoic acid	**0,17 ± 0,21**	ω6/ω3	**12,71 ± 0,36**
Oleic acid	**70,94 ± 0,03**	Behenic acid	**0,09 ± 0,04**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of aromatic herbs and leaves. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 194	**177 - 179**	**214 - 218**	**214 - 214**	**124 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**177 - 177**	**161 - 161**	**213 - 232**	

References:

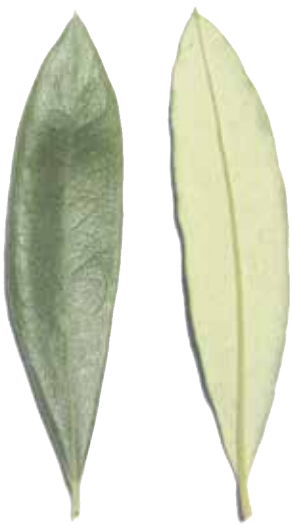
1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Romanella molisana "

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **low (4,85 ± 0,76)**
Oil content (%): **medium (47,97 ± 0,86)**
Purpose: **oil**

Morphological characters

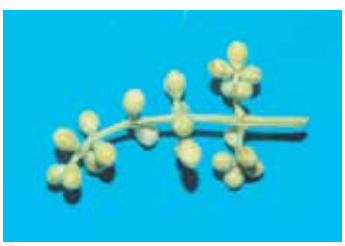
Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium-sparse**



Leaf characters
Blade length (cm): **medium (5,66 ± 0,53)**
Blade width (cm): **medium (1,43 ± 0,13)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,23 ± 0,52)**
Number of flowers: **medium (22,17 ± 1,62)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,95 ± 0,04)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**



Pit characters
Weight of 100 pits (g): **medium (0,34 ± 0,04)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

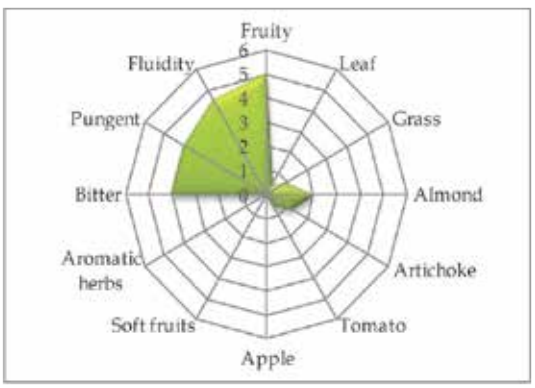
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,49 ± 0,57**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**13,40 ± 0,36**	Linolenic acid (ω3)	**0,75 ± 0,04**		
Palmitoleic acid	**1,47 ± 0,04**	Arachic acid	**0,21 ± 0,03**	Unsat./satured	**5,37 ± 0,18**
Stearic acid	**1,97 ± 0,02**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**8,62 ± 0,30**
Oleic acid	**74,41 ± 0,16**	Behenic acid	**0,05 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass, tomato and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 210	**181 - 181**	**212 - 222**	**214 - 214**	**130 - 126**	**150 - 150**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**177 - 193**	**154 - 205**	**213 - 243**	

References:

1 - Ente regionale di sviluppo agricolo per il Molise. In: *Il germoplasma dell'olivo nel Molise*, Quaderno divulgativo dell'ERSA (2000), n° 5.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

" Rosciola Coltodino "

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **medium (5,53 ± 1,00)**
Oil content (%): **medium (45,60 ± 1,66)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,49 ± 0,43)**
Blade width (cm): **medium (1,23 ± 0,11)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,65 ± 0,49)**
Number of flowers: **medium (24,04 ± 2,31)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,65 ± 0,08)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **low (0,26 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

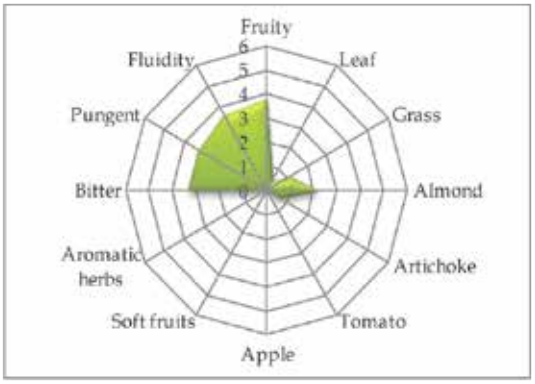
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**12,22 ± 1,47**	Lignoceric acid	**0,02 ± 0,00**
Palmitic acid	**15,89 ± 0,12**	Linolenic acid (ω3)	**0,78 ± 0,03**		
Palmitoleic acid	**1,97 ± 0,07**	Arachic acid	**0,16 ± 0,02**	Unsat./satured	**4,54 ± 0,03**
Stearic acid	**1,66 ± 0,01**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**15,71 ± 2,46**
Oleic acid	**65,22 ± 1,24**	Behenic acid	**0,04 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**179 - 181**	**208 - 218**	**212 - 212**	**126 - 144**	**184 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**182 - 202**	**177 - 182**	**156 - 161**	**200 - 200**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Rosciola di Rotello "

(synonymy: Rusciola)

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **low (3,84 ± 0,34)**
Oil content (%): **medium (48,10 ± 0,08)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,38 ± 0,43)**
Blade width (cm): **medium (1,46 ± 0,21)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,16 ± 0,73)**
Number of flowers: **low (13,55 ± 1,46)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,14 ± 0,18)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,45 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

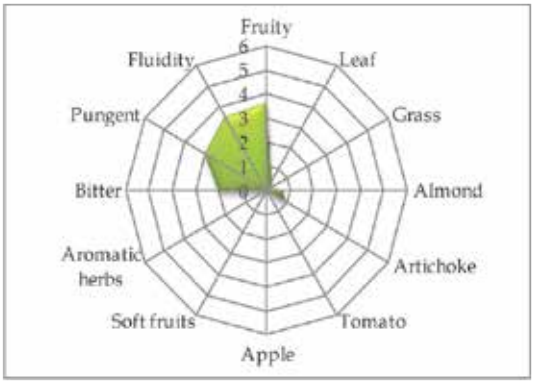
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,87 ± 0,95**	Lignoceric acid	**0,03 ± 0,02**
Palmitic acid	**10,63 ± 2,09**	Linolenic acid (ω3)	**0,89 ± 0,02**		
Palmitoleic acid	**1,99 ± 1,01**	Arachic acid	**0,23 ± 0,08**	Unsat./satured	**7,06 ± 1,54**
Stearic acid	**1,61 ± 0,24**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**9,99 ± 0,86**
Oleic acid	**74,02 ± 0,06**	Behenic acid	**0,07 ± 0,05**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and artichoke. Balanced taste sensation with a medium-light bitter and medium spicy. Medium fluidity**.



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 166	**163 - 177**	**208 - 212**	**214 - 224**	**124 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 177**	**182 - 182**	**205 - 205**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo,* University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

" Rosciola di Venafro "

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **low (4,90± 1,13)**
Oil content (%): **medium (45,42 ± 1,19)**
Purpose: **oil**

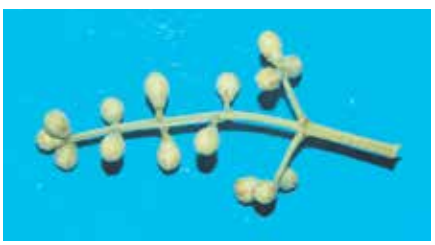
Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (8,83 ± 0,54)**
Blade width (cm): **medium (1,45 ± 0,19)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,54 ± 2,92)**
Number of flowers: **medium (19,99 ± 1,78)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,38 ± 0,22)**
Shape (length/width): **spherical**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **few and large**



Pit characters
Weight of 100 pits (g): **medium (0,43 ± 0,11)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

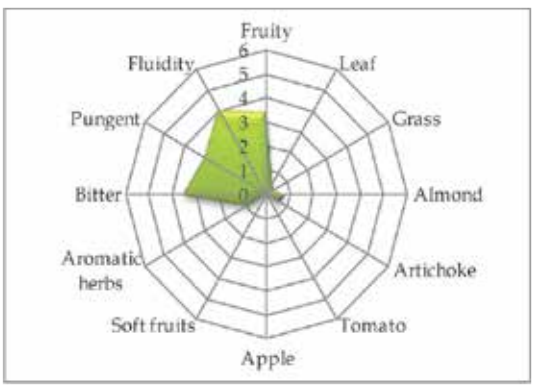
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,64 ± 0,87**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**14,13 ± 0,04**	Linolenic acid (ω3)	**0,79 ± 0,00**		
Palmitoleic acid	**1,88 ± 0,16**	Arachic acid	**0,26 ± 0,01**	Unsat./satured	**5,02 ± 0,03**
Stearic acid	**2,02 ± 0,08**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**13,44 ± 1,05**
Oleic acid	**68,50 ± 0,79**	Behenic acid	**0,06 ± 0,00**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of aromatic herbs, artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium intensity, medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 206	**177 - 181**	**208 - 222**	**214 - 214**	**126 - 144**	**136 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**177 - 193**	**143 - 154**	**213 - 213**	

References:

1 - Ente regionale di sviluppo agricolo per il Molise. In: *Il germoplasma dell'olivo nel Molise*, Quaderno divulgativo dell'ERSA (2000), n° 5.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

" Rosciola "

(synonymy: Raggiola, Rossetta.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **medium (6,79 ± 0,31)**
Oil content (%): **medium (44,55 ± 1,90)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,43 ± 0,37)**
Blade width (cm): **medium (1,22 ± 0,09)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,98 ± 0,55)**
Number of flowers: **medium (20,02 ± 0,60)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,79 ± 0,12)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,24 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

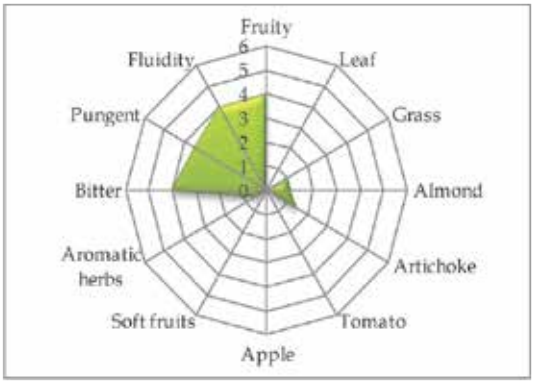
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**13,74 ± 0,70**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**12,45 ± 0,29**	Linolenic acid (ω3)	**0,38 ± 0,02**		
Palmitoleic acid	**1,36 ± 0,01**	Arachic acid	**0,24 ± 0,04**	Unsat./satured	**5,76 ± 0,11**
Stearic acid	**1,91 ± 0,10**	Eicosenoic acid	**0,26 ± 0,02**	ω6/ω3	**36,74 ± 0,95**
Oleic acid	**68,25 ± 1,04**	Behenic acid	**0,09 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of artichoke, read sensations of almond, aromatic herbs and grass. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**177 - 189**	**214 - 222**	**218 - 218**	**126 - 144**	**184 - 197**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**143 - 143**	**177 - 182**	**154 - 205**	**205 - 205**	

References:

1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche*, (2001), ASSAM pp. 109-112.
1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

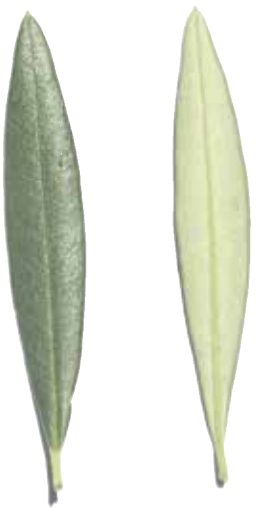
" Rotondella di Sanza "

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (6,39 ± 0,42)**
Oil content (%): **medium (46,51 ± 2,52)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect-spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,58 ± 0,79)**
Blade width (cm): **narrow (1,00 ± 0,19)**
Shape (length/width): **elliptic-lanceolate**



Inflorescence characters
Inflorescence length (cm): **medium (2,74 ± 1,20)**
Number of flowers: **low (15,52 ± 0,72)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,87 ± 0,19)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,39 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Surface: **scabrous**
Number of grooves: **medium**

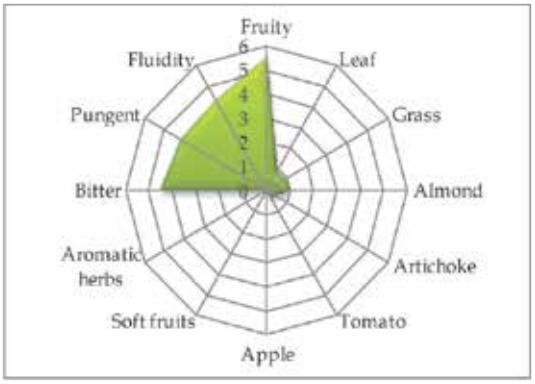
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**3,08 ± 0,30**	Lignoceric acid	**0,06 ± 0,04**
Palmitic acid	**12,08 ± 1,00**	Linolenic acid (ω3)	**0,74 ± 0,12**		
Palmitoleic acid	**1,81 ± 0,26**	Arachic acid	**0,25 ± 0,05**	Unsat./satured	**6,14 ± 0,54**
Stearic acid	**1,47 ± 0,15**	Eicosenoic acid	**0,19 ± 0,14**	ω6/ω3	**4,29 ± 0,98**
Oleic acid	**78,50 ± 1,46**	Behenic acid	**0,09 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**179 - 181**	**212 - 213**	**218 - 218**	**126 - 144**	**157 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 150**	**164 - 182**	**150 - 205**	**205 - 232**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience,* (2009), 44: pp. 582-588.

" Salvia "

(synonymy: Salvia Montelibretti)

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **medium (6,59 ± 0,72)**
Oil content (%): **medium (41,11 ± 0,84)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **short (4,89 ± 0,42)**
Blade width (cm): **medium (1,23 ± 0,13)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **short (2,04 ± 0,57)**
Number of flowers: **low (17,32 ± 2,29)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,60 ± 0,14)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,26 ± 0,07)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

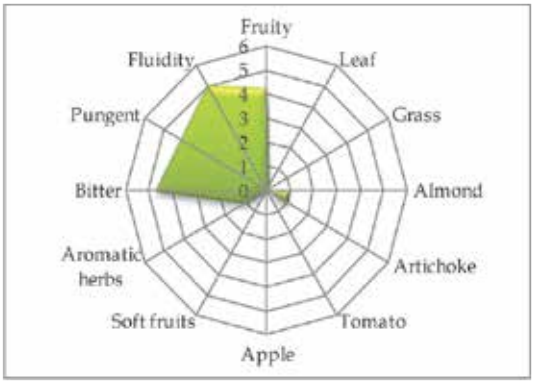
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**7,41 ± 0,80**	Lignoceric acid	**0,07 ± 0,01**
Palmitic acid	**10,90 ± 1,06**	Linolenic acid (ω3)	**0,84 ± 0,08**		
Palmitoleic acid	**1,34 ± 0,05**	Arachic acid	**0,38 ± 0,03**	Unsat./satured	**6,71 ± 0,63**
Stearic acid	**1,67 ± 0,04**	Eicosenoic acid	**0,34 ± 0,04**	ω6/ω3	**8,87 ± 0,14**
Oleic acid	**76,00 ± 0,08**	Behenic acid	**0,10 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with read sensations of aromatic herbs, almond, and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**179 - 181**	**218 - 222**	**218 - 224**	**126 - 144**	**150 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**143 - 143**	**177 - 193**	**154 - 210**	**185 - 185**	

References:

1 - Parlati M. V., Pandolfi S. In: *Olivo e Olio*, (2001), 4: pp. 67-72.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*, University of Bari (in press), ISBN 978-88-88793-97-9.

" Sammartinara "

(synonymy: San Martinara)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (7,87 ± 1,09)**
Oil content (%): **medium (47,43 ± 2,06)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,27 ± 0,50)**
Blade width (cm): **medium (1,47 ± 0,15)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,03 ± 2,45)**
Number of flowers: **low (14,46 ± 0,60)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,04 ± 0,37)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,46 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

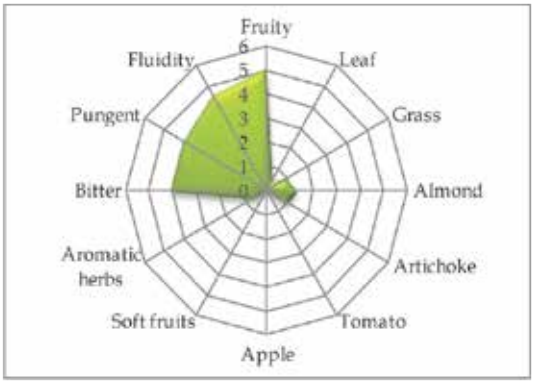
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,00**	Linoleic acid (ω6)	**13,13 ± 0,21**	Lignoceric acid	**0,06 ± 0,05**
Palmitic acid	**12,83 ± 1,03**	Linolenic acid (ω3)	**0,85 ± 0,02**		
Palmitoleic acid	**0,90 ± 0,03**	Arachic acid	**0,23 ± 0,01**	Unsat./satured	**5,13 ± 0,10**
Stearic acid	**2,99 ± 1,28**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**15,49 ± 0,57**
Oleic acid	**68,01 ± 0,16**	Behenic acid	**0,14 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium-high fruity, with good sensation of almond and artichoke, less grass and aromatic herbs. Balanced taste sensation, with bitter and spicy medium. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 162	**179 - 181**	**212 - 212**	**214 - 214**	**126 - 144**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 177**	**182 - 182**	**205 - 205**	

References:

1 - Sottile I. In: *Giornate di studio sulla propagazione delle specie legnose*, Ist. Colt. Arb. Pisa (1964), pp. 21-26.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.
.

" Sammartinenga "

Areal distribution or origin area: **Basilicata**
Flesh/pit weight ratio: **medium (6,77 ± 2,80)**
Oil content (%): **medium (41,74 ± 1,68)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,83 ± 0,58)**
Blade width (cm): **medium (1,04 ± 0,14)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,95 ± 1,25)**
Number of flowers: **medium (22,99 ± 3,41)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,12 ± 0,36)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,28 ± 0,07)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

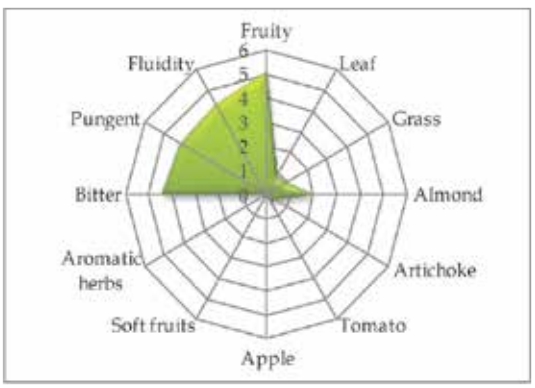
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**6,76 ± 0,32**	Lignoceric acid	**0,06 ± 0,05**
Palmitic acid	**11,69 ± 0,63**	Linolenic acid (ω3)	**0,77 ± 0,20**		
Palmitoleic acid	**1,16 ± 0,18**	Arachic acid	**0,38 ± 0,11**	Unsat./satured	**5,86 ± 0,20**
Stearic acid	**2,37 ± 0,07**	Eicosenoic acid	**0,17 ± 0,21**	ω6/ω3	**9,18 ± 2,83**
Oleic acid	**75,07 ± 0,14**	Behenic acid	0,10 **± 0,04**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 176	**179 - 181**	**208 - 222**	**214 - 214**	**124 - 144**	**136 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 177**	**143 - 182**	**213 - 213**	

References:

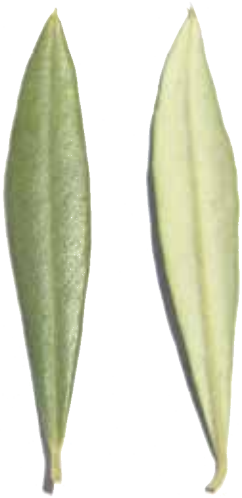
1 - Rotundo A., Marone E. In: *Il germoplasma olivicolo lucano*, Olita - Potenza (2002), pp. 85-88.
2 - Rotundo A., Perri E.,Muzzalupo I., *et al.* In: *Il germoplasma olivicolo meridionale,* (2012 in press).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" San Benedetto "

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (5,02 ± 0,47)**
Oil content (%): **medium (43,30 ± 1,20)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect-spreading**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (5,70 ± 0,44)**
Blade width (cm): **medium (1,12 ± 0,10)**
Shape (length/width): **elliptic - lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,86 ± 0,77)**
Number of flowers: **medium (15,65 ± 1,06)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,98 ± 0,15)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,49 ± 0,07)**
Shape (length/width): **symmetric**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

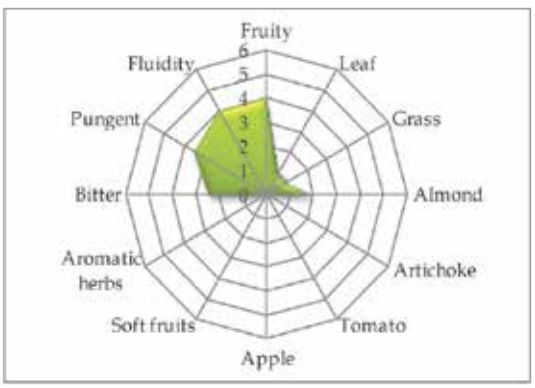
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**12,69 ± 1,47**	Lignoceric acid	**0,04 ± 0,01**
Palmitic acid	**14,55 ± 0,43**	Linolenic acid (ω3)	**0,87 ± 0,08**		
Palmitoleic acid	**3,74 ± 0,66**	Arachic acid	**0,36 ± 0,18**	Unsat./satured	**4,85 ± 0,17**
Stearic acid	**1,69 ± 0,11**	Eicosenoic acid	**0,11 ± 0,15**	ω6/ω3	**14,56 ± 2,35**
Oleic acid	**62,33 ± 0,69**	Behenic acid	**0,09 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of almond, read sensations of grass and leaves. Balanced taste sensation with medium – light bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**179 - 185**	**208 - 212**	**214 - 214**	**124 - 144**	**157 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 143**	**166 - 193**	**154 - 182**	**205 - 205**	

References:

1 - bellomo F. In: *Seminario olive da tavola nell'olivicoltura,* Acc. Naz. Olivo Cerignola (1969), pp. 9-18.
2 - Muzzalupo I., Lombardo N., Salimonti A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 142-148.

" San Francesco "

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **medium (5,00 ± 0,01)**
Oil content (%): **low (35,88 ± 1,78)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,34 ± 0,44)**
Blade width (cm): **broad (5,00 ± 0,11)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,82 ± 1,44)**
Number of flowers: **high (25,58 ± 1,40)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,52 ± 0,11)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,59 ± 0,02)**
Shape (length/width): **elongated**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **low**

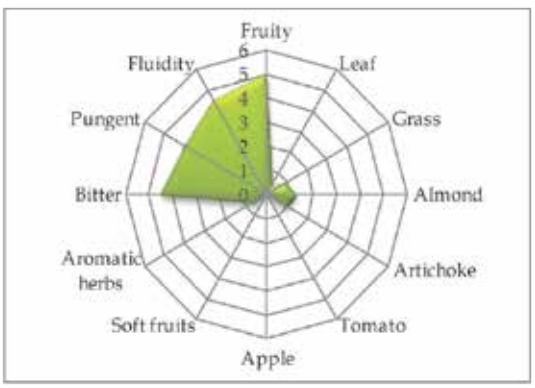
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**4,79 ± 0,44**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**10,68 ± 0,67**	Linolenic acid (ω3)	**0,91 ± 0,09**		
Palmitoleic acid	**0,98 ± 0,01**	Arachic acid	**0,20 ± 0,01**	Unsat./satured	**7,13 ± 0,56**
Stearic acid	**1,41 ± 0,11**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**5,32 ± 1,03**
Oleic acid	**80,10 ± 1,54**	Behenic acid	**0,04 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium fruity, with good sensation of almond and aromatic herbs, less grass and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**179 - 181**	**208 - 208**	**210 - 210**	**126 - 130**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**156 - 182**	**182 - 182**	**213 - 213**	

References:

1 - Cimato A., Cantini C., Sani G., *et al.* In: *Atti convegno tecniche, norme e qualità in olivicoltura,* Uni. Bas.(1993).
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*. University of Bari (in press), ISBN 978-88-88793-97-9.

" Santa Caterina "

(synonymy: Oliva da indolcire, Oliva di San Biagio, Oliva lucchese, etc.)

Areal distribution or origin area: **Toscana**
Flesh/pit weight ratio: **very high (10,13 ± 0,98)**
Oil content (%): **medium (41,40 ± 0,59)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **long (7,14 ± 0,64)**
Blade width (cm): **medium (1,26 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,76 ± 0,51)**
Number of flowers: **low (16,70 ± 2,59)**

Fruit characters
Fresh weight of 100 fruits (g): **very high (7,70 ± 0,52)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **very high (0,72 ± 0,10)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **truncate**
Surface: **rugose**
Number of grooves: **medium**

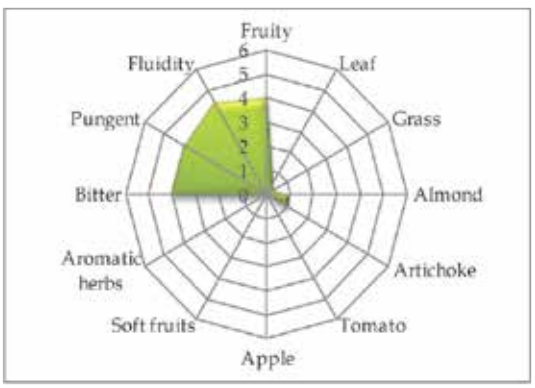
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**11,17 ± 1,44**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**12,06 ± 1,31**	Linolenic acid (ω3)	**0,97 ± 0,02**		
Palmitoleic acid	**0,50 ± 0,02**	Arachic acid	**0,17 ± 0,04**	Unsat./satured	**6,23 ± 0,70**
Stearic acid	**1,56 ± 0,13**	Eicosenoic acid	**0,01 ± 0,00**	ω6/ω3	**11,56 ± 1,24**
Oleic acid	**72,56 ± 0,61**	Behenic acid	**0,05 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium-light intensity. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 194	**185 - 185**	**208 - 208**	**210 - 212**	**124 - 144**	**136 - 197**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**156 - 164**	**150 - 182**	**220 - 220**	

References:

1 - Cimato A., Cantini C., Sani G., In: *L'olivo in Toscana: il germoplasma autoctono*, Ed. ARSIA (2001).
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Santa Maria "

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (6,18 ± 0,46)**
Oil content (%): **medium (48,21 ± 0,21)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (6,27 ± 0,52)**
Blade width (cm): **broad (1,62 ± 0,14)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,72 ± 2,03)**
Number of flowers: **medium (15,58 ± 2,49)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,42 ± 0,10)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,20 ± 0,00)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

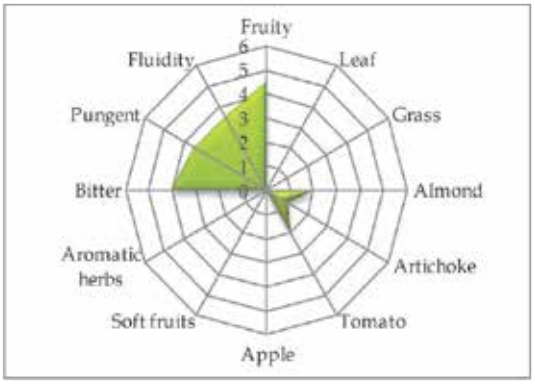
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**10,41 ± 1,10**	Lignoceric acid	**0,08 ± 0,08**
Palmitic acid	**11,21 ± 1,42**	Linolenic acid (ω3)	**0,72 ± 0,01**		
Palmitoleic acid	**2,45 ± 0,48**	Arachic acid	**0,28 ± 0,03**	Unsat./satured	**6,51 ± 0,87**
Stearic acid	**1,56 ± 0,12**	Eicosenoic acid	**0,09 ± 0,11**	ω6/ω3	**14,55 ± 1,40**
Oleic acid	**70,82 ± 0,02**	Behenic acid	**0,11 ± 0,06**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of almond, tomato and artichoke. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 172	**173 - 179**	**214 - 218**	**214 - 218**	**124 - 144**	**157 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 150	**143 - 143**	**164 - 177**	**154 - 205**	**205 - 205**	

References:

1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

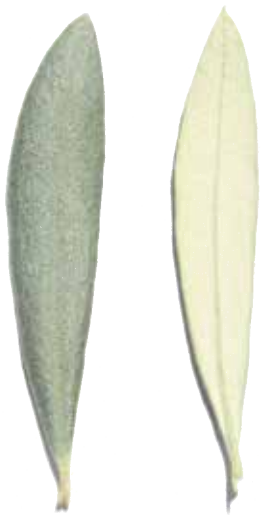
" Sant'Agatese "

(synonymy: Aliva d'oggi, Comune, Ogliara, Palermitana, Ugghiara, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (7,77 ± 0,61)**
Oil content (%): **medium (47,29 ± 0,20)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect-spreading**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (5,50 ± 0,33)**
Blade width (cm): **medium (1,27 ± 0,10)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,66 ± 1,44)**
Number of flowers: **low (15,81 ± 0,52)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,40 ± 1,41)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,52 ± 0,18)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

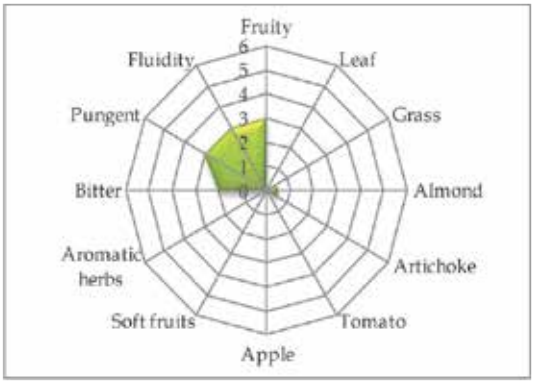
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**8,54 ± 0,80**	Lignoceric acid	**0,05 ± 0,04**
Palmitic acid	**14,58 ± 0,25**	Linolenic acid (ω3)	**0,71 ± 0,06**		
Palmitoleic acid	**0,99 ± 0,42**	Arachic acid	**0,26 ± 0,02**	Unsat./satured	4,85 **± 0,05**
Stearic acid	**2,01 ± 0,19**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	12,05 **± 0,79**
Oleic acid	**71,47 ± 0,45**	Behenic acid	**0,09 ± 0,03**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-light, with read sensations of artichoke, almond and grass. Balanced taste sensation with medium-light spicy and bitter. Medium-light fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**177 - 189**	**208 - 222**	**214 - 214**	**124 - 126**	**150 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 177**	**182 - 182**	**213 - 213**	

References:
1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 66-70.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

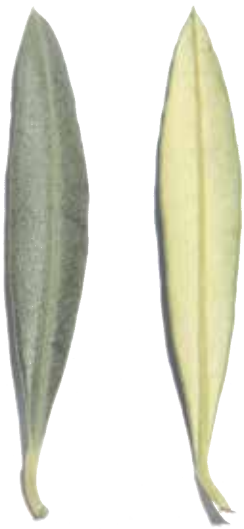
" Sant'Agostino "

(synonymy: Grossa di Andria, Oliva di Andria, Oliva grossa, etc.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **high (8,73 ± 0,21)**
Oil content (%): **medium (48,14 ± 2,33)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (6,32 ± 0,77)**
Blade width (cm): **broad (1,56 ± 0,21)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,80 ± 0,62)**
Number of flowers: **low (14,55 ± 1,38)**

Fruit characters
Fresh weight of 100 fruits (g): **very high (6,71 ± 1,50)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **very high (0,70 ± 0,09)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

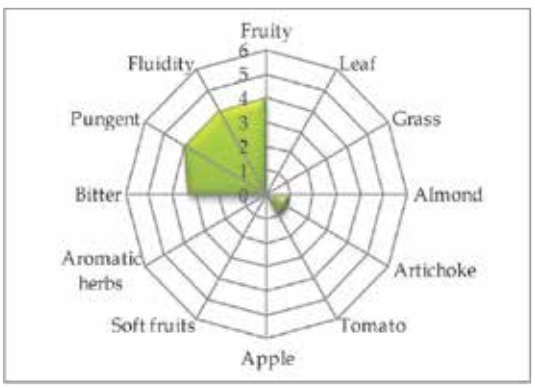
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,41 ± 0,15**	Lignoceric acid	**0,06 ± 0,04**
Palmitic acid	**12,69 ± 1,40**	Linolenic acid (ω3)	**0,92 ± 0,09**		
Palmitoleic acid	**0,73 ± 0,02**	Arachic acid	**0,31 ± 0,20**	Unsat./satured	**5,67 ± 0,28**
Stearic acid	**1,92 ± 0,55**	Eicosenoic acid	**0,19 ± 0,24**	ω6/ω3	**10,28 ± 0,80**
Oleic acid	**73,09 ± 0,15**	Behenic acid	**0,11 ± 0,07**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond, artichoke and tomato. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 198	**177 - 181**	**212 - 212**	**210 - 214**	**124 - 144**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 166**	**154 - 154**	**108 - 108**	

References:
1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 85-88.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Santomauro "

(synonymy: Verace.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **medium (7,10 ± 2,96)**
Oil content (%): **medium (42,22 ± 3,15)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,26 ± 0,39)**
Blade width (cm): **medium (1,05 ± 0,09)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,80 ± 0,28)**
Number of flowers: **low (17,23 ± 2,95)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,39 ± 0,66)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,44 ± 0,61)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

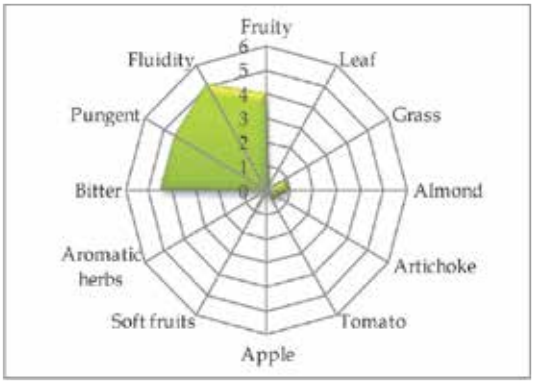
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**2,52 ± 0,32**	Lignoceric acid	**0,04 ± 0,03**
Palmitic acid	**12,22 ± 0,70**	Linolenic acid (ω3)	**0,93 ± 0,11**		
Palmitoleic acid	**1,80 ± 0,06**	Arachic acid	**0,26 ± 0,04**	Unsat./satured	**6,08 ± 0,47**
Stearic acid	**1,43 ± 0,20**	Eicosenoic acid	**0,15 ± 0,21**	ω6/ω3	**2,78 ± 0,72**
Oleic acid	**78,54 ± 1,31**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of almond, grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 198	**177 - 179**	**208 - 222**	**214 - 2124**	**124 - 144**	**157 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**143 - 143**	**166 - 182**	**143 - 205**	**205 - 232**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 25.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

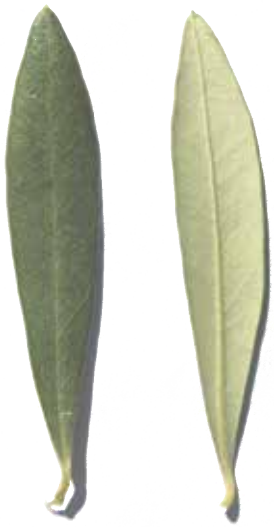
" Sargano di Fermo "

(synonymy: Rosciola di Sirolo, Sargana, Sargano, etc.)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **low (4,85 ± 0,61)**
Oil content (%): **medium (47,96 ± 0,78)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **medium (5,30 ± 0,38)**
Blade width (cm): **medium (1,38 ± 0,12)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,92± 0,81)**
Number of flowers: **low (17,77 ± 1,33)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,61 ± 0,11)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,45 ± 0,03)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **low**

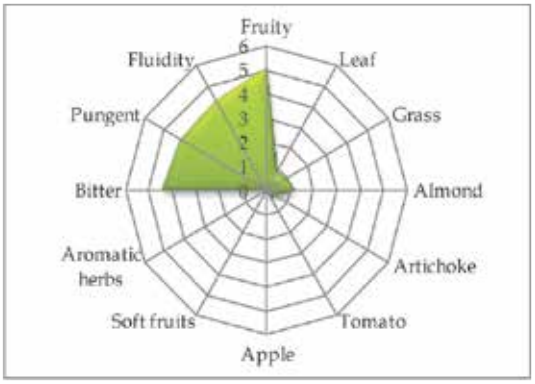
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,90 ± 0,49**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**9,03 ± 0,10**	Linolenic acid (ω3)	**0,93 ± 0,03**		
Palmitoleic acid	**0,71 ± 0,04**	Arachic acid	**0,33 ± 0,02**	Unsat./satured	**8,24 ± 0,15**
Stearic acid	**1,51 ± 0,03**	Eicosenoic acid	**0,01 ± 0,00**	ω6/ω3	**7,29 ± 0,26**
Oleic acid	**80,09 ± 0,21**	Behenic acid	**0,09 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 198	**179 - 181**	**214 - 222**	**218 - 224**	**124 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 182**	**182 - 210**	**185 - 185**	

References:

1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche*, (2001), ASSAM pp. 117-120.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138–140.

" Sargano di San Benedetto "

(synonymy: Sargano)

Areal distribution or origin area: **Marche**
Flesh/pit weight ratio: **low (4,21 ± 0,76)**
Oil content (%): **medium (40,13 ± 0,18)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **short (4,83 ± 0,41)**
Blade width (cm): **narrow (0,97 ± 0,13)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (4,35 ± 2,98)**
Number of flowers: **high (26,25 ± 0,09)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,58 ± 0,12)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,30 ± 0,02)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

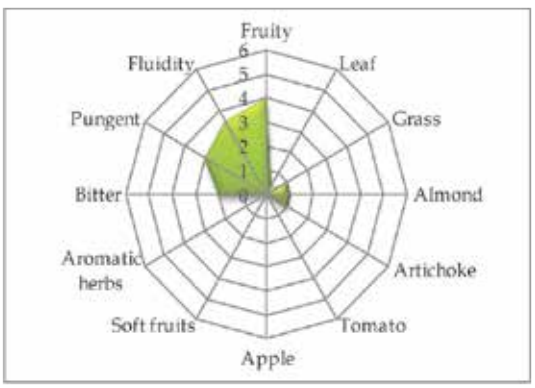
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**12,55 ± 1,50**	Lignoceric acid	**0,02 ± 0,00**
Palmitic acid	**16,62 ± 0,75**	Linolenic acid (ω3)	**0,76 ± 0,03**		
Palmitoleic acid	**2,61 ± 0,03**	Arachic acid	**0,27 ± 0,04**	Unsat./satured	**4,25 ± 0,24**
Stearic acid	**1,79 ± 0,06**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**16,53 ± 1,40**
Oleic acid	**62,99 ± 0,62**	Behenic acid	**0,08 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond, grass, and artichoke. Balanced taste sensation with a medium-light bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**177 - 177**	**218 - 222**	**214 - 214**	**130 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**135 - 135**	**166 - 167**	**154 - 205**	**200 - 205**	

References:

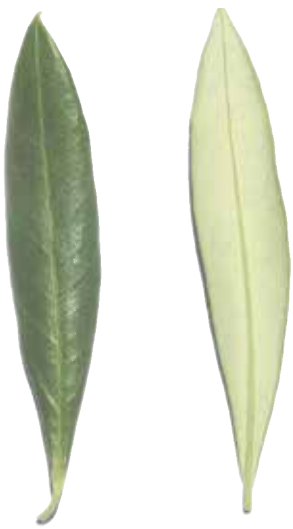
1 - Pannelli G., Alfei B., Santinelli A. In: *Varietà di olivo nelle Marche*, (2001), ASSAM pp. 121-124
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138–140.

“ Scarpetta ”

Areal distribution or origin area: **Basilicata**
Flesh/pit weight ratio: **low (4,42 ± 0,84)**
Oil content (%): **medium (48,82 ± 1,96)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**



Leaf characters
Blade length (cm): **medium (6,86 ± 1,24)**
Blade width (cm): **broad (1,63 ± 0,33)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,93 ± 1,23)**
Number of flowers: **low (15,98 ± 2,46)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,97 ± 0,27)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,34 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

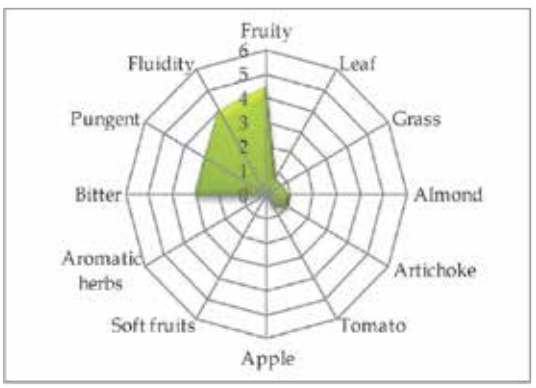
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**9,50 ± 1,34**	Lignoceric acid	**0,06 ± 0,04**
Palmitic acid	**9,78 ± 0,91**	Linolenic acid (ω3)	**0,95 ± 0,04**		
Palmitoleic acid	**0,39 ± 0,02**	Arachic acid	**0,48 ± 0,10**	Unsat./satured	**6,22 ± 0,28**
Stearic acid	**3,66 ± 0,48**	Eicosenoic acid	**0,15 ± 0,11**	ω6/ω3	**9,94 ± 1,11**
Oleic acid	**74,49 ± 2,09**	Behenic acid	**0,12 ± 0,05**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and artichoke, read sensations of grass and tomato. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 198	**179 - 181**	**208 - 218**	**212 - 221**	**124 - 124**	**150 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 182**	**143 - 143**	**200 - 200**	

References:
1 - Rotundo A., Marone E. In: *Il germoplasma olivicolo lucano*, Olita - Potenza (2002), pp. 151-154.
2 - Rotundo A., Perri E.,Muzzalupo I., *et al.* In: *Il germoplasma olivicolo meridionale,* (2012 in press).
3 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

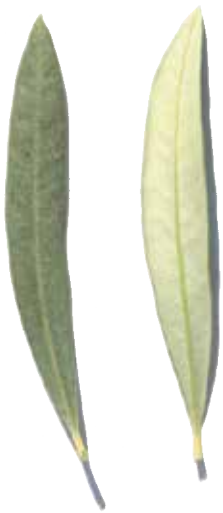
" Semidana "

(synonymy: Olia di Riola, Olieddu terzu, Terza, etc.)

Areal distribution or origin area: **Sardegna**
Flesh/pit weight ratio: **medium (5,05 ± 0,37)**
Oil content (%): **medium (44,46 ± 2,71)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **weak**
Growth habit: **spreading**
Canopy-density: **medium-sparse**



Leaf characters
Blade length (cm): **medium (6,73 ± 0,70)**
Blade width (cm): **medium (1,28 ± 0,17)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,86 ± 1,51)**
Number of flowers: **medium (18,57 ± 1,48)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,45 ± 0,37)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **obvious**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (0,60 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

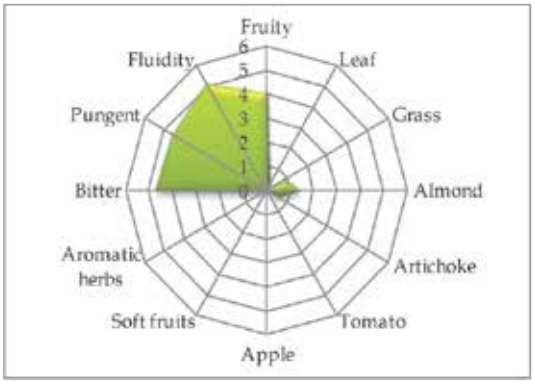
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,69 ± 1,85**	Lignoceric acid	**0,04 ± 0,00**
Palmitic acid	**12,15 ± 1,34**	Linolenic acid (ω3)	**0,81 ± 0,23**		
Palmitoleic acid	**1,03 ± 0,36**	Arachic acid	**0,27 ± 0,08**	Unsat./satured	**5,87 ± 0,45**
Stearic acid	**2,06 ± 0,45**	Eicosenoic acid	**0,03 ± 0,01**	ω6/ω3	**13,52 ± 1,64**
Oleic acid	**71,93 ± 0,05**	Behenic acid	**0,08 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of almond, grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 172	**185 - 185**	**214 - 214**	**214 - 218**	**130 - 144**	**136 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 150	**135 - 135**	**164 - 193**	**150 - 161**	**200 - 200**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*. University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

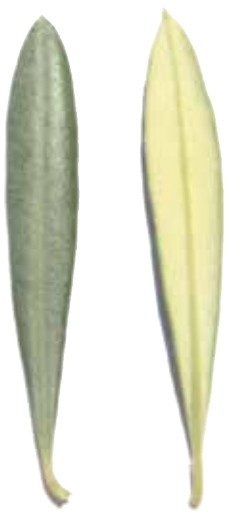
" Sessana "

(synonymy: Cicinella, Minucciolo, etc.)

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (6,18 ± 0,25)**
Oil content (%): **medium (46,05 ± 0,75)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium sparse**



Leaf characters
Blade length (cm): **medium (5,92 ± 0,45)**
Blade width (cm): **medium (1,46 ± 0,18)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,65 ± 1,06)**
Number of flowers: **low (17,71 ± 1,66)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,99 ± 0,18)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **low (0,28 ± 0,03)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

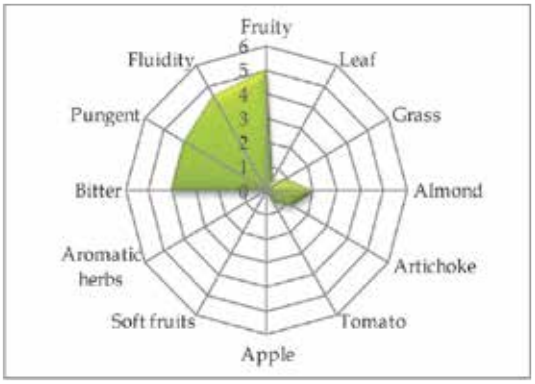
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**6,58 ± 0,99**	Lignoceric acid	**0,09 ± 0,08**
Palmitic acid	**11,46 ± 0,45**	Linolenic acid (ω3)	**0,97 ± 0,02**		
Palmitoleic acid	**1,18 ± 0,26**	Arachic acid	**0,29 ± 0,05**	Unsat./satured	**6,32 ± 0,16**
Stearic acid	**1,75 ± 0,24**	Eicosenoic acid	**0,24 ± 0,19**	ω6/ω3	**6,78 ± 0,87**
Oleic acid	**76,29 ± 0,63**	Behenic acid	**0,09 ± 0,05**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass, tomato and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**181 - 185**	**214 - 214**	**214 - 224**	**126 - 130**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 177**	**182 - 205**	**213 - 213**	

References:

1 - Pugliano G., Flaminio G., Pugliano M.L., *et al.* In: *La risorsa genetica dell'olivo in Campania*, SE. S.I.R.C.A. Ed. Napoli, (2000).
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Simona "

(synonymy: Simone)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **low (3,96 ± 0,18)**
Oil content (%): **medium (40,63 ± 3,23)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,94 ± 0,52)**
Blade width (cm): **medium (1,35 ± 0,19)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **long (3,91 ± 0,87)**
Number of flowers: **high (20,16 ± 2,42)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,69 ± 0,28)**
Shape (length/width): **elongated**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Niplle: **absent**
Lenticels: **may and small**

Pit characters
Weight of 100 pits (g): **medium (0,35 ± 0,05)**
Shape (length/width): **elongated**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

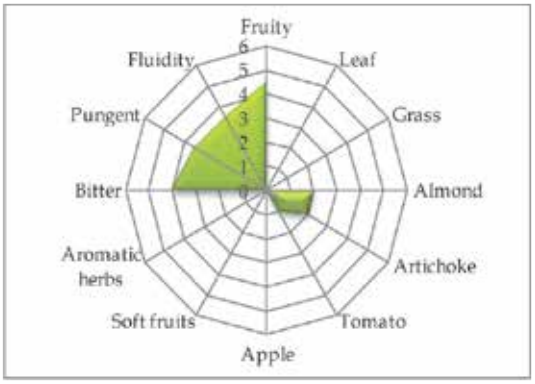
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**3,31 ± 0,54**	Lignoceric acid	**0,10 ± 0,05**
Palmitic acid	**10,30 ± 0,98**	Linolenic acid (ω3)	**0,71 ± 0,06**		
Palmitoleic acid	**0,89 ± 0,20**	Arachic acid	**0,42 ± 0,06**	Unsat./satured	**6,36 ± 0,55**
Stearic acid	**2,85 ± 0,15**	Eicosenoic acid	**0,22 ± 0,14**	ω6/ω3	**4,65 ± 0,69**
Oleic acid	**80,41 ± 1,79**	Behenic acid	**0,13 ± 0,04**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of almond, artichoke and tomato. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 182	**175 - 181**	**212 - 222**	**210 - 210**	**124 - 126**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**166 - 166**	**166 - 177**	**154 - 154**	**108 - 170**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Istituto Sperimentale per l'Olivicoltura (2004), pp. 89-82.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Sinopolese "

(synonymy: Calabrese, Chianota, Coccitano, Pizzocorno, Seminarota, etc.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **high (3,58 ± 0,32)**
Oil content (%): **medium (42,82 ± 4,12)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,81 ± 0,82)**
Blade width (cm): **medium (1,50 ± 0,27)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,07 ± 1,74)**
Number of flowers: **xmedium (22,17 ± 1,82)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,46 ± 0,11)**
Shape (length/width): **elongated**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,34 ± 0,07)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

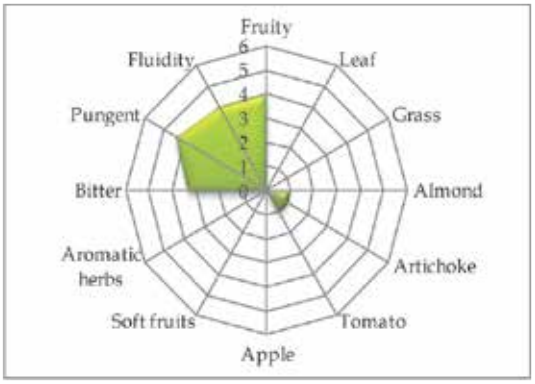
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**6,46 ± 2,20**	Lignoceric acid	**0,04 ± 0,02**
Palmitic acid	**12,25 ± 0,83**	Linolenic acid (ω3)	**0,70 ± 0,15**		
Palmitoleic acid	**0,96 ± 0,30**	Arachic acid	**0,36 ± 0,16**	Unsat./satured	**5,66 ± 0,86**
Stearic acid	**2,49 ± 0,88**	Eicosenoic acid	**0,10 ± 0,16**	ω6/ω3	**9,42 ± 2,97**
Oleic acid	**75,52 ± 1,28**	Behenic acid	**0,11 ± 0,07**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond, artichoke and tomato. Balanced taste sensation with a medium-high bitter and medium-light spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**177 - 179**	**212 - 214**	**212 - 212**	**124 - 130**	**170 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 193**	**154 - 210**	**164 - 205**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 13.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

" Sirole "

(synonymy: Sirole, Sirole Soratte, Sirole Soratte 1, etc.)

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **medium (7,27 ± 0,41)**
Oil content (%): **medium (44,80 ± 0,19)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **short (4,57 ± 0,39)**
Blade width (cm): **medium (1,12 ± 0,18)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,45 ± 0,10)**
Number of flowers: **low (14,73 ± 1,80)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,34 ± 0,37)**
Shape (length/width): **elongated**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **medium (0,33 ± 0,09)**
Shape (length/width): **elongated**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

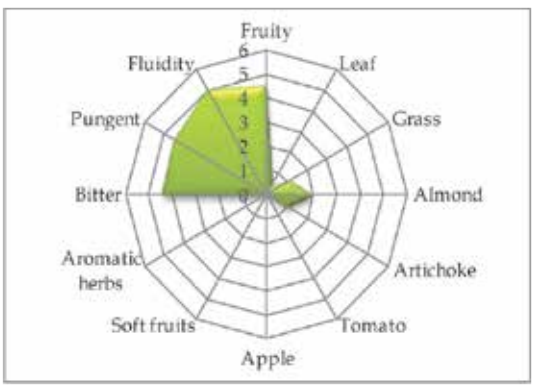
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,93 ± 0,42**	Lignoceric acid	**0,06 ± 0,00**
Palmitic acid	**14,06 ± 1,28**	Linolenic acid (ω3)	**0,92 ± 0,08**		
Palmitoleic acid	**1,30 ± 0,08**	Arachic acid	**0,29 ± 0,12**	Unsat./satured	**4,73 ± 0,56**
Stearic acid	**2,92 ± 0,47**	Eicosenoic acid	**0,34 ± 0,07**	ω6/ω3	**12,00 ± 1,48**
Oleic acid	**67,93 ± 1,11**	Behenic acid	**0,13 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass, leaves, and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
176 - 206	**181 - 185**	**214 - 222**	**218 - 224**	**130 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**135 - 135**	**177 - 182**	**182 - 210**	**185 - 220**	

References:

1 - Parlati M. V., Pandolfi S. In: *Olivo e Olio,* (2001), 4: pp. 67-72.
2 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.

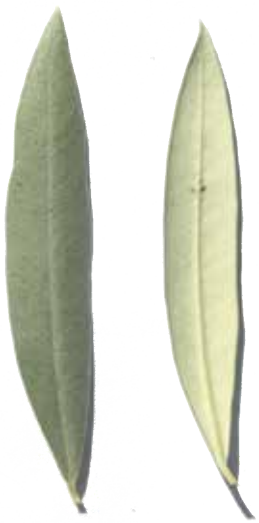
" Sperone di gallo "

(synonymy: Oliva torta, Olivona, Tortarella, Zampa di gallo, etc.)

Areal distribution or origin area: **Molise**
Flesh/pit weight ratio: **high (9,82 ± 1,01)**
Oil content (%): **medium (48,86 ± 0,46)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect**
Canopy-density: **medium-sparse**



Leaf characters
Blade length (cm): **long (7,48 ± 0,98)**
Blade width (cm): **broad (2,06 ± 0,35)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,58 ± 0,92)**
Number of flowers: **medium (19,85 ± 2,32)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,21 ± 007)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **medium (0,39 ± 0,03)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **pointed**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

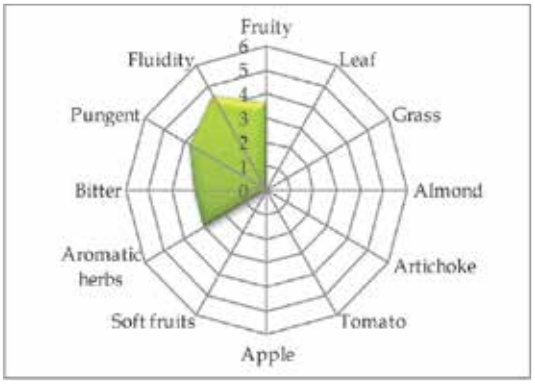
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,01**	Linoleic acid (ω6)	**15,64 ± 1,04**	Lignoceric acid	**0,05 ± 0,04**
Palmitic acid	**16,19 ± 1,50**	Linolenic acid (ω3)	**0,72 ± 0,02**		
Palmitoleic acid	**2,01 ± 0,19**	Arachic acid	**0,43 ± 0,17**	Unsat./satured	**4,05 ± 0,38**
Stearic acid	**3,00 ± 0,37**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**21,65 ± 1,55**
Oleic acid	**60,01 ± 0,26**	Behenic acid	**0,10 ± 0,05**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of aromatic herbs. Balanced taste sensation with medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 172	**169 - 179**	**212 - 212**	**214 - 214**	**130 - 130**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 193**	**182 - 182**	**213 - 213**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*. University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci*. (2008), 22(2): pp. 129-135.

" Termite di Bitetto "

(synonymy: Cima di Bitetto, Mele di Bitetto, Oliva mele, Termite, etc.)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (7,07 ± 0,76)**
Oil content (%): **medium (47,26 ± 0,21)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,38 ± 0,68)**
Blade width (cm): **board (1,58 ± 0,22)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,80 ± 0,53)**
Number of flowers: **low (14,46 ± 2,68)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,22 ± 0,68)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,56 ± 0,07)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

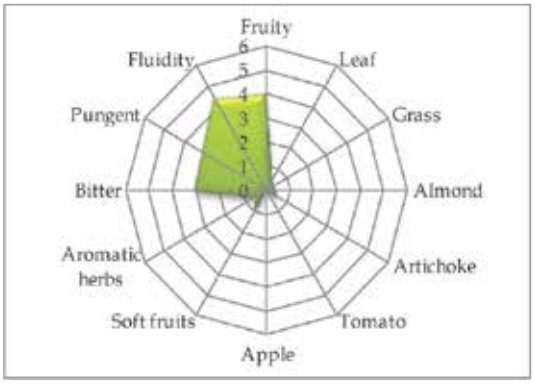
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,92 ± 1,37**	Lignoceric acid	**0,02 ± 0,01**
Palmitic acid	**16,04 ± 2.74**	Linolenic acid (ω3)	**0,86 ± 0,04**		
Palmitoleic acid	**2,87 ± 1,94**	Arachic acid	**0,17 ± 0,03**	Unsat./satured	**4,62 ± 0,78**
Stearic acid	**1,28 ± 0,02**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**12,69 ± 0,99**
Oleic acid	**64,92 ± 0,59**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of artichoke and soft fruits. Balanced in flavours, with hints of bitter and spicy medium-light intensity. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 194	**179 - 179**	**208 - 212**	**214 - 214**	**124 - 144**	**150 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 182**	**143 - 205**	**108 - 170**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 93-96.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Terza Grande "

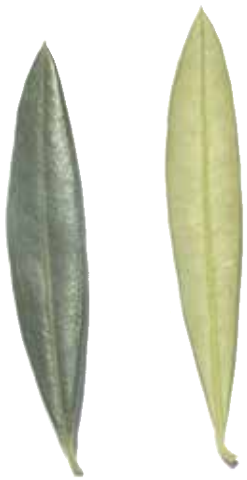
(synonymy: Di Bosa, Di Cuglieri, Olia Terza, Terza, etc.)

Areal distribution or origin area: **Sardegna**
Flesh/pit weight ratio: **medium (5,65 ± 0,10)**
Oil content (%): **medium (42,46 ± 0,57)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,11 ± 0,34)**
Blade width (cm): **medium (1,21 ± 0,11)**
Shape (length/width): **elliptic-lanceolate**



Inflorescence characters
Inflorescence length (cm): **medium (2,60 ± 0,67)**
Number of flowers: **low (15,31 ± 1,52)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,13 ± 1,03)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **obvious**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,60 ± 0,06)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

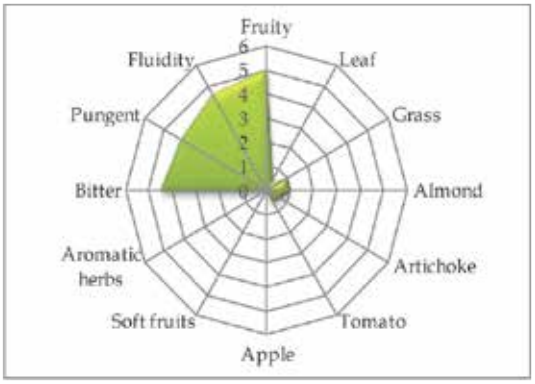
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**x8,00x ± 1,57**	Lignoceric acid	**0,06 ± 0,05**
Palmitic acid	**12,13 ± 0,81**	Linolenic acid (ω3)	**0,83 ± 0,08**		
Palmitoleic acid	**1,29 ± 0,17**	Arachic acid	**0,31 ± 0,10**	Unsat./satured	**6,12 ± 0,66**
Stearic acid	**1,56 ± 0,35**	Eicosenoic acid	**0,19 ± 0,24**	ω6/ω3	**9,77 ± 2,87**
Oleic acid	**74,42 ± 3,04**	Behenic acid	**0,08 ± 0,03**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass, tomato, and artichoke. Balanced taste sensation with a medium-high bitter and medium spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 198	**179 - 181**	**214 - 222**	**214 - 221**	**126 - 144**	**157 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 150	**143 - 143**	**164 - 177**	**150 - 161**	**213 - 213**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo* . University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience,* (2009), 44: pp. 582-588.

" Tombarello "

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **medium (5,14 ± 1,44)**
Oil content (%): **medium (44,95 ± 4,80)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **short (4,36 ± 0,30)**
Blade width (cm): **medium (1,27 ± 0,16)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,74 ± 0,55)**
Number of flowers: **medium (19,34 ± 1,60)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,49 ± 0,14)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,25 ± 0,04)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **low**

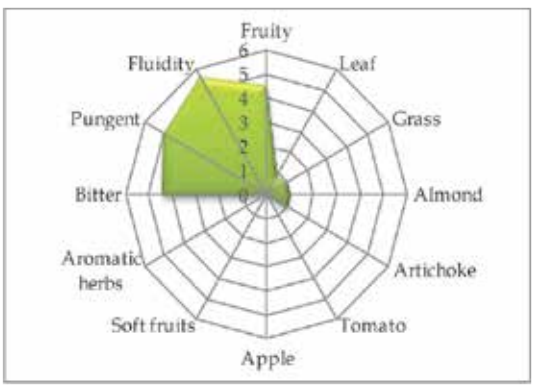
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**7,41 ± 1,14**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**13,70 ± 0,91**	Linolenic acid (ω3)	**0,67 ± 0,03**		
Palmitoleic acid	**1,72 ± 0,20**	Arachic acid	**0,35 ± 0,09**	Unsat./satured	**5,07 ± 0,41**
Stearic acid	**2,29 ± 0,16**	Eicosenoic acid	**0,08 ± 0,12**	ω6/ω3	**10,98 ± 1,49**
Oleic acid	**71,91 ± 2,04**	Behenic acid	**0,08 ± 0,12**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 206	**177 - 177**	**212 - 212**	**212 - 212**	**130 - 144**	**150 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**177 - 193**	**143 - 182**	**205 - 205**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 25.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

" Tonda di Alife "

Areal distribution or origin area: **Campania**
Flesh/pit weight ratio: **medium (5,86 ± 0,29)**
Oil content (%): **medium (42,05 ± 1,79)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,62 ± 0,37)**
Blade width (cm): **medium (1,36 ± 0,12)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,12 ± 0,45)**
Number of flowers: **medium (22,13 ± 1,72)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,29 ± 0,07)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,34 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

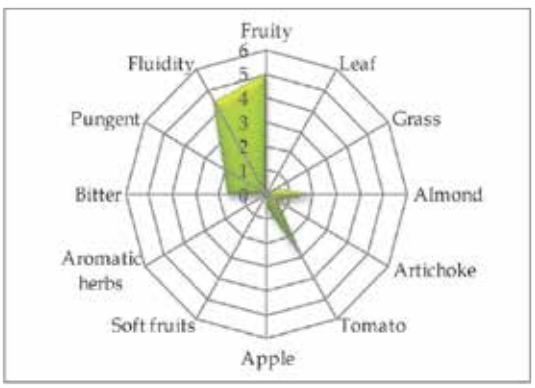
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**10,13 ± 0,87**	Lignoceric acid	**0,02 ± 0,00**
Palmitic acid	**15,65 ± 0,35**	Linolenic acid (ω3)	**0,96 ± 0,02**		
Palmitoleic acid	**1,42 ± 0,10**	Arachic acid	**0,24 ± 0,02**	Unsat./satured	**4,68 ± 0,17**
Stearic acid	**1,59 ± 0,16**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**10,51 ± 0,65**
Oleic acid	**68,79 ± 1,50**	Behenic acid	**0,07 ± 0,00**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of tomato, read sensations of almond. Balanced taste sensation with medium-light spicy and bitter. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**181 - 185**	**214 - 214**	**214 - 214**	**124 - 126**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**166 - 166**	**164 - 193**	**150 - 154**	**205 - 205**	

References:

1 - Various authors. In: *Catalogo Nazionale delle Varietà di Olivo*. University of Bari (in press), ISBN 978-88-88793-97-9.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Tonda di Filadelfia "

(synonymy: Oliva di Pentone, Strongolese, Tonda di Filogaso, Tonda dolce, etc.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **high (7,90 ± 1,79)**
Oil content (%): **high (51,45 ± 5,14)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,95 ± 0,74)**
Blade width (cm): **broad (1,51 ± 0,11)**
Shape (length/width): elliptic

Inflorescence characters
Inflorescence length (cm): **short (2,40 ± 1,21)**
Number of flowers: **low (14,00 ± 1,46)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,22 ± 0,64)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,36 ± 0,03)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

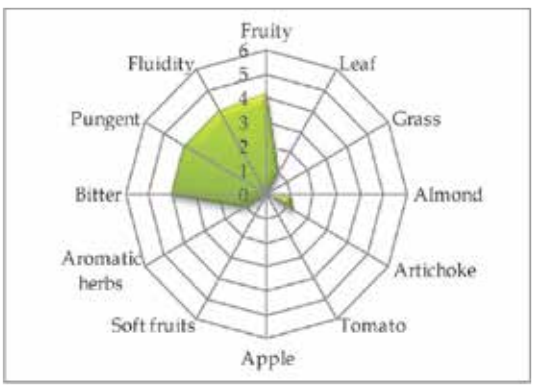
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**7,55 ± 1,00**	Lignoceric acid	**0,02 ± 0,00**
Palmitic acid	**11,10 ± 0,01**	Linolenic acid (ω3)	**0,79 ± 0,02**		
Palmitoleic acid	**1,09 ± 0,35**	Arachic acid	**0,25 ± 0,04**	Unsat./satured	**6,53 ± 0,14**
Stearic acid	**1,89 ± 0,19**	Eicosenoic acid	**0,02 ± 0,00**	ω6/ω3	**9,52 ± 1,00**
Oleic acid	**76,13 ± 0,04**	Behenic acid	**0,05 ± 0,01**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with read sensations of artichoke, almond, and leaves. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**177 - 185**	**212 - 222**	**212 - 218**	**126 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**143 - 205**	**205 - 232**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 23.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

" Tonda di Filogaso "

(synonymy: Oliva di Pentone, Strongolese, Tonda di Filadelfia, Tonda Dolce, etc.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **medium (6,24 ± 1,73)**
Oil content (%): **medium (46,58 ± 2,19)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,26 ± 0,57)**
Blade width (cm): **broad (1,59 ± 0,18)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **long (3,53 ± 0,18)**
Number of flowers: **medium (23,75 ± 2,97)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,90 ± 0,33)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,30 ± 0,06)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **smooth**
Number of grooves: **medium**

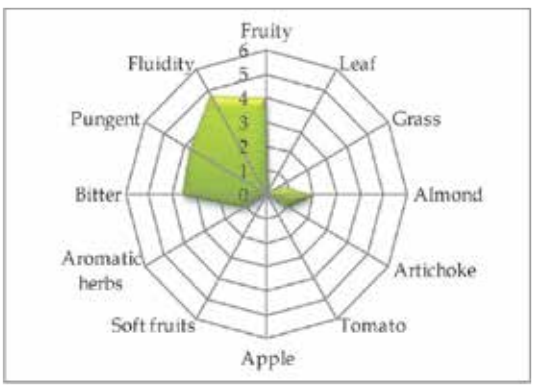
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,02 ± 0,02**	Linoleic acid (ω6)	**6,69 ± 0,26**	Lignoceric acid	**0,04 ± 0,03**
Palmitic acid	**11,49 ± 0,72**	Linolenic acid (ω3)	**0,72 ± 0,04**		
Palmitoleic acid	**1,08 ± 0,30**	Arachic acid	**0,27 ± 0,03**	Unsat./satured	**6,17 ± 0,38**
Stearic acid	**2,11 ± 0,07**	Eicosenoic acid	**0,03 ± 0,03**	ω6/ω3	**9,24 ± 0,39**
Oleic acid	**76,46 ± 0,69**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **medium fruity, with good sensation of almond and aromatic herbs, less grass and artichoke. Balanced taste sensation, with bitter and spicy medium. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**177 - 179**	**212 - 212**	**212 - 250**	**124 - 124**	**157 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**166 - 166**	**143 - 182**	**205 - 205**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 24.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

" Tonda di Strongoli "

(synonymy: Olivo di Pentone, Strongolese, Tonda di Filadelfia, Tonda di Filogaso, etc.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **high (8,58 ± 0,60)**
Oil content (%): **medium (51,88 ± 2,91)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,19 ± 0,61)**
Blade width (cm): **medium (1,01 ± 0,14)**
Shape (length/width): **lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,44 ± 1,0)**
Number of flowers: **low (17,08 ± 1,13)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,10 ± 1,49)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (0,53 ± 0,13)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **low**

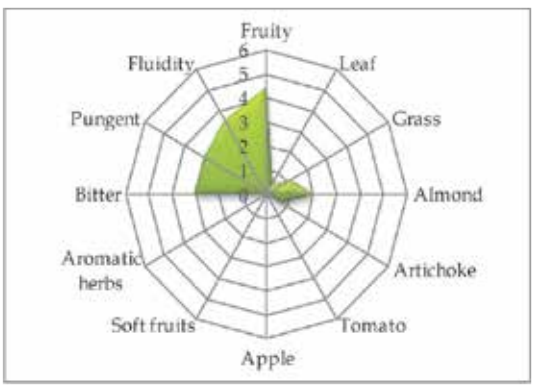
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,03 ± 0,03**	Linoleic acid (ω6)	**7,95 ± 1,56**	Lignoceric acid	**0,03 ± 0,00**
Palmitic acid	**13,04 ± 0,67**	Linolenic acid (ω3)	**0,85 ± 0,05**		
Palmitoleic acid	**1,46 ± 0,45**	Arachic acid	**0,23 ± 0,05**	Unsat./satured	**5,52 ± 0,26**
Stearic acid	**1,88 ± 0,07**	Eicosenoic acid	**0,04 ± 0,02**	ω6/ω3	**9,29 ± 1,31**
Oleic acid	**72,93 ± 1,14**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**177 - 185**	**212 - 222**	**212 - 218**	**124 - 126**	**136 - 150**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**166 - 193**	**143 - 182**	**205 - 220**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 15.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

" Tonda dolce di Partanna "

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **high (8,87 ± 0,57)**
Oil content (%): **medium (48,55 ± 0,03)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (6,39 ± 0,68)**
Blade width (cm): **broad (1,53 ± 0,17)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,61 ± 0,66)**
Number of flowers: **low (14,45 ± 2,17)**

Fruit characters
Fresh weight of 100 fruits (g): **high (5,30 ± 0,71)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Niplle: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,54 ± 0,04)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards base**
Apex: **rounded**
Base: **truncate**
Surface: **scabrous**
Number of grooves: **low**

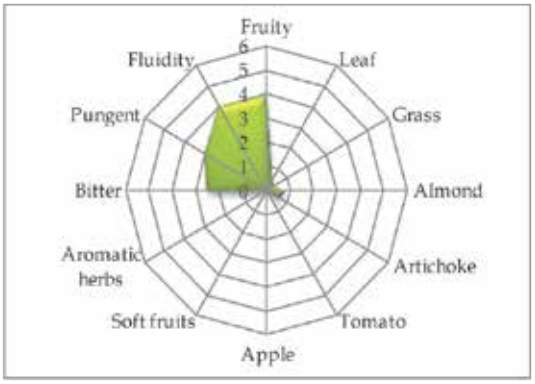
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**9,73 ± 0,08**	Lignoceric acid	**0,04 ± 0,01**
Palmitic acid	**10,18 ± 0,11**	Linolenic acid (ω3)	**0,89 ± 0,13**		
Palmitoleic acid	**0,81 ± 0,03**	Arachic acid	**0,26 ± 0,01**	Unsat./satured	**6,90 ± 0,04**
Stearic acid	**2,23 ± 0,03**	Eicosenoic acid	**0,02 ± 0,01**	ω6/ω3	**11,01 ± 1,46**
Oleic acid	**75,22 ± 0,29**	Behenic acid	**0,05 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of artichoke and almond. Balanced in flavours, with hints of bitter and spicy medium – light intensity, medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 182	**177 - 181**	**212 - 212**	**214 - 214**	**144 - 144**	**157 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**166 - 193**	**182 - 182**	**205 - 205**	

References:

1 - Mulè R., Fodale A. S., Parlati M. V.,, *et al.* In: *Frutticoltura,* (1992), 11 pp. 25-29.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Tonda Iblea "

(synonymy: Alimena, Cetrala, Ferlisa, Nuciddara, Tunna, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (7,17 ± 0,65)**
Oil content (%): **high (54,23 ± 0,58)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **spreading-erect**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,15 ± 0,30)**
Blade width (cm): **medium (1,15 ± 0,13)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (1,86 ± 0,37)**
Number of flowers: **low (12,93 ± 3,70)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,84 ± 1,48)**
Shape (length/width): **spherical**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,65 ± 0,07)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

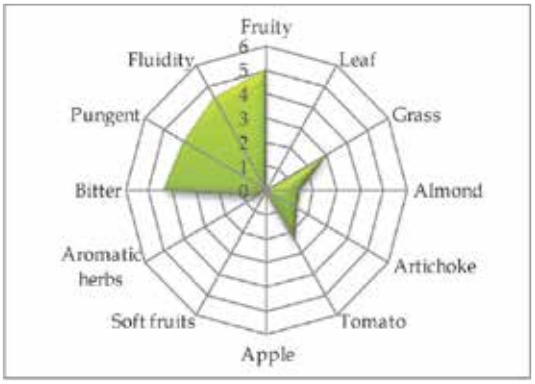
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,03 ± 0,03**	Linoleic acid (ω6)	**8,82 ± 0,61**	Lignoceric acid	**0,04 ± 0,02**
Palmitic acid	**13,44 ± 0,57**	Linolenic acid (ω3)	**0,85 ± 0,03**		
Palmitoleic acid	**1,23 ± 0,23**	Arachic acid	**0,28 ± 0,04**	Unsat./satured	**5,34 ± 0,29**
Stearic acid	**1,94 ± 0,14**	Eicosenoic acid	**0,10 ± 0,14**	ω6/ω3	**10,37 ± 0,83**
Oleic acid	**72,11 ± 1,17**	Behenic acid	**0,07 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of grass and tomato, read sensations of almond and artichoke. Balanced taste sensation with a medium- bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**169 - 177**	**208 - 212**	**210 - 214**	**124 - 144**	**136 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**154 - 154**	**108 - 205**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 72-76.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

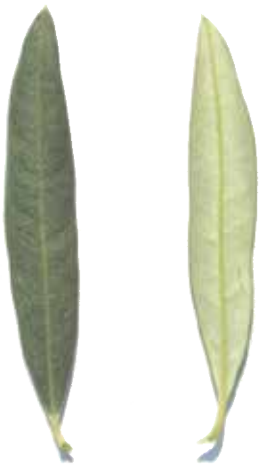
" Tondina "

(synonymy: Amaro, Roggianella, Roggianese, Spezzanota, Vernile, etc.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **high (7,54 ± 0,92)**
Oil content (%): **low (39,70 ± 0,88)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **dense**



Leaf characters
Blade length (cm): **medium (5,23 ± 0,44)**
Blade width (cm): **medium (1,13 ± 0,12)**
Shape (length/width): **elliptic - lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (3,02 ± 1,34)**
Number of flowers: **medium (19,38 ± 2,57)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,60 ± 0,26)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,37 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

Biochemical Characters

Fatty Acid Composition

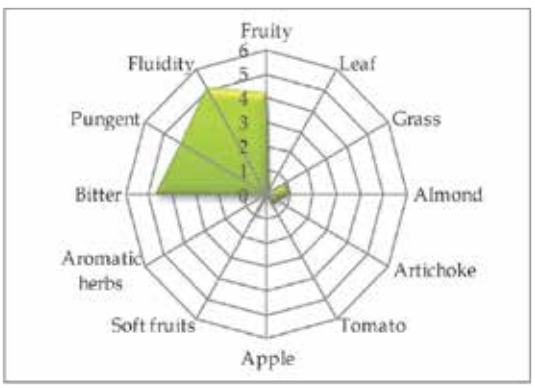
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	0,**01 ± 0,01**	Linoleic acid (ω6)	**4,75 ± 3,09**	Lignoceric acid	**0,07 ± 0,06**
Palmitic acid	**12,40 ± 0,78**	Linolenic acid (ω3)	**0,89 ± 0,18**		
Palmitoleic acid	**1,31 ± 0,27**	Arachic acid	**0,29 ± 0,16**	Unsat./satured	**5,93 ± 0,38**
Stearic acid	**1,59 ± 0,34**	Eicosenoic acid	**0,19 ± 0,14**	ω6/ω3	**5,11 ± 2,41**
Oleic acid	**77,11 ± 3,31**	Behenic acid	**0,08 ± 0,03**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of almond, grass and artichoke. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**177 - 179**	**208 - 222**	**214 - 214**	**126 - 144**	**159 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
150 - 150	**143 - 143**	**166 - 182**	**143 - 182**	**205 - 232**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp:17.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

" Tortiglione "

Areal distribution or origin area: **Abruzzo**
Flesh/pit weight ratio: **high (9,47 ± 0,37)**
Oil content (%): **medium (41,86 ± 2,07)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect—spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (4,87 ± 0,65)**
Blade width (cm): **medium (1,21 ± 0,15)**
Shape (length/width): **elliptic - lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,66 ± 2,81)**
Number of flowers: **low (17,39 ± 2,58)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,69 ± 0,27)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **low (0,20 ± 0,04)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

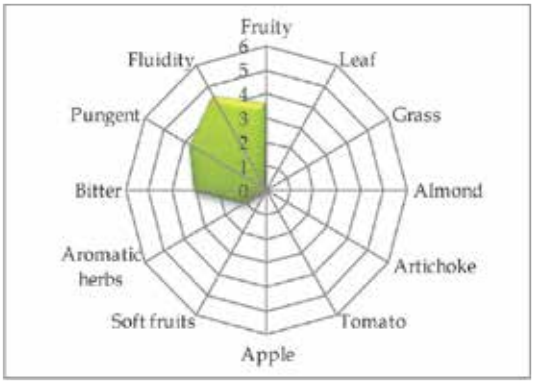
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**9,45 ± 0,50**	Lignoceric acid	**0,04 ± 0,01**
Palmitic acid	**10,90 ± 0,87**	Linolenic acid (ω3)	**0,88 ± 0,01**		
Palmitoleic acid	**0,85 ± 0,21**	Arachic acid	**0,43 ± 0,11**	Unsat./satured	**6,47 ± 0,79**
Stearic acid	**2,19 ± 0,40**	Eicosenoic acid	**0,16 ± 0,19**	ω6/ω3	**10,73 ± 0,72**
Oleic acid	**74,46 ± 1,93**	Behenic acid	**0,10 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of aromatic herbs. Balanced taste sensation with medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**179 - 181**	**208 - 212**	**214 - 224**	**124 - 126**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**166 - 166**	**177 - 177**	**154 - 210**	**220 - 243**	

References:

1 - Pietrangeli E., Russo A., In: *Olivi D'Abruzzo*, Grafiche di Prinzio (1997), pp. 32-33.
2 - Muzzalupo I., Salimonti A., Caravita M. A., *et al. Adv. Hort. Sci.* (2008), 22(2): pp. 129-135.

" Toscanina "

(synonymy: Oliva a grappa)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **low (4,51 ± 0,61)**
Oil content (%): **medium (39,79 ± 0,02)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,44 ± 0,80)**
Blade width (cm): **medium (1,47 ± 0,27)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (3,14 ± 0,58)**
Number of flowers: **medium (16,62 ± 1,87)**

Fruit characters
Fresh weight of 100 fruits (g): **low (1,78 ± 0,27)**
Shape (length/width): **spherical**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,30 ± 0,04)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

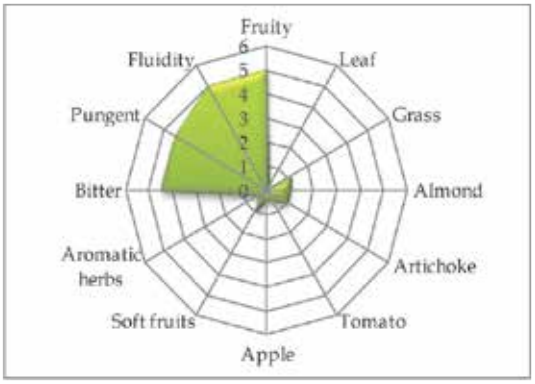
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**3,53 ± 0,70**	Lignoceric acid	**0,04 ± 0,03**
Palmitic acid	**11,02 ± 0,56**	Linolenic acid (ω3)	**0,76 ± 0,02**		
Palmitoleic acid	**1,17 ± 0,12**	Arachic acid	**0,32 ± 0,12**	Unsat./satured	**6,74 ± 0,30**
Stearic acid	**1,51 ± 0,14**	Eicosenoic acid	**0,17 ± 0,26**	ω6/ω3	**4,63 ± 0,78**
Oleic acid	**8,24 ± 1,27**	Behenic acid	**0,09 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and grass, read sensations of soft fruits. Balanced taste sensation with a medium-high bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 198	**177 - 181**	**218 - 218**	**210 - 214**	**124 - 144**	**150 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 177**	**161 - 182**	**164 - 164**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 97-100.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Tunnulidda "

(synonymy: Marsalesa, Marsalese, Marsalisa, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (5,93 ± 1,02)**
Oil content (%): **medium (49,72 ± 1,28)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,52 ± 0,44)**
Blade width (cm): **medium (1,40 ± 0,19)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **medium (2,72 ± 0,11)**
Number of flowers: **low (15,73 ± 2,57)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,72 ± 0,29)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **absent**
Lenticels: **few and large**

Pit characters
Weight of 100 pits (g): **high (0,54 ± 0,05)**
Shape (length/width): **ovoid**
Mucron: **abvious**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **smooth**
Number of grooves: **medium**

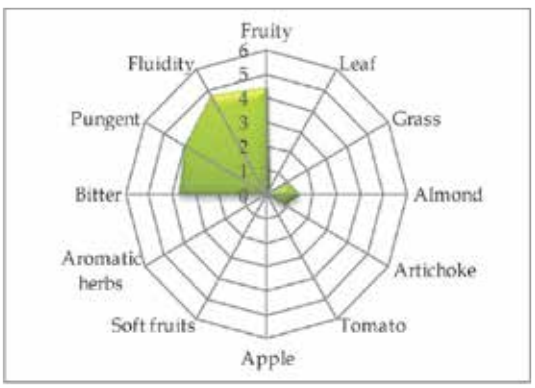
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**9,47 ± 0,81**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**7,19 ± 1,23**	Linolenic acid (ω3)	**0,86 ± 0,04**		
Palmitoleic acid	**0,96 ± 0,72**	Arachic acid	**0,25 ± 0,05**	Unsat./satured	**9,21 ± 0,06**
Stearic acid	**2,35 ± 1,16**	Eicosenoic acid	**0,03± 0,00**	ω6/ω3	**11,07 ± 1,44**
Oleic acid	**77,86 ± 2,49**	Behenic acid	**0,06 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with hints of almond and read sensations of grass and artichoke. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
172 - 182	**169 - 181**	**208 - 212**	**214 - 214**	**126 - 144**	**159 - 184**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**182 - 182**	**205 - 205**	

References:

1 - Bottari V., Spina P. In: *Le varietà di olivo coltivate in Sicilia*, Ann. Sper. Agr. (1953), 7: pp. 937-1004.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Vaddara "

(synonymy: Agghiarica, Gaddarica, Gallarichi, Vaddarica, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (5,42 ± 1,11)**
Oil content (%): **medium (40,84 ± 2,84)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium-strong**
Growth habit: **erect-spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **medium (5,02 ± 1,06)**
Blade width (cm): **medium (1,31 ± 0,25)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **short (2,14 ± 0,49)**
Number of flowers: **medium (19,44 ± 3,18)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,37 ± 0,54)**
Shape (length/width): **ovoid**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards base**
Apex: **pointed**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and large**

Pit characters
Weight of 100 pits (g): **high (0,53 ± 0,09)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

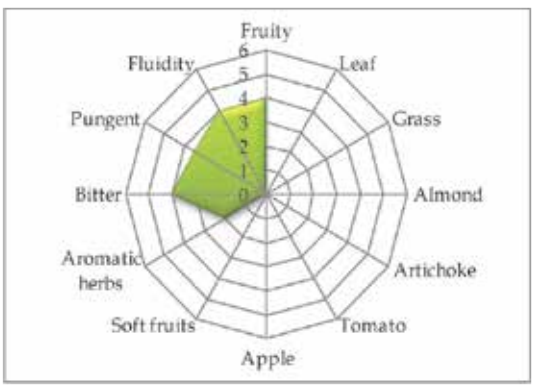
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**19,14 ± 5,05**	Lignoceric acid	**0,08 ± 0,01**
Palmitic acid	**15,41 ± 2,44**	Linolenic acid (ω3)	**0,74 ± 0,06**		
Palmitoleic acid	**3,17 ± 1,27**	Arachic acid	**0,32 ± 0,01**	Unsat./satured	**4,57 ± 0,64**
Stearic acid	**1,73 ± 0,12**	Eicosenoic acid	**0,25 ± 0,07**	ω6/ω3	**25,84 ± 4,63**
Oleic acid	**55,68 ± 4,84**	Behenic acid	**0,11 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium, with taste of aromatic herbs. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 198	**179 - 179**	**208 - 212**	**210 - 214**	**124 - 124**	**157 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**177 - 193**	**154 - 182**	**164 - 205**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 182-186.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Vallanella "

(synonymy: Vallanella Ravebianca

Areal distribution or origin area: **Lazio**
Flesh/pit weight ratio: **medium (6,11 ± 2,83)**
Oil content (%): **medium (44,29 ± 1,80)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-dense**

Leaf characters
Blade length (cm): **long (7,02 ± 0,42)**
Blade width (cm): **medium (1,49± 0,15)**
Shape (length/width): **elliptic-lanceolata**

Inflorescence characters
Inflorescence length (cm): **medium (2,76 ± 1,63)**
Number of flowers: **low (15,50 ± 4,27)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,93 ± 1,99)**
Shape (length/width): **ovoid**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **obvious**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **high (0,57 ± 0,08)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Surface: **rugose**
Number of grooves: **medium**

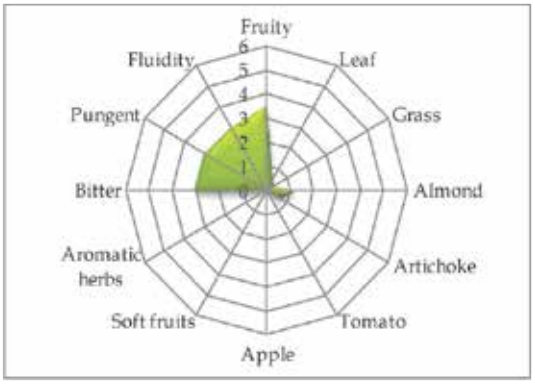
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**8,48 ± 2,12**	Lignoceric acid	**0,03 ± 0,01**
Palmitic acid	**10,35 ± 0,68**	Linolenic acid (ω3)	**0,98 ± 0,12**		
Palmitoleic acid	**0,42 ± 0,05**	Arachic acid	**0,48 ± 0,15**	Unsat./satured	**6,77 ± 0,89**
Stearic acid	**2,32 ± 0,83**	Eicosenoic acid	**0,28 ± 0,25**	ω6/ω3	**8,90 ± 3,27**
Oleic acid	**76,60 ± 0,89**	Behenic acid	**0,10 ± 0,01**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium - light, with hints of almond and artichoke. Balanced in flavours, with hints of bitter and spicy medium intensity, medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 206	**173 - 175**	**208 - 212**	**214 - 224**	**130 - 144**	**170 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 193**	**143 - 210**	**213 - 232**	

References:

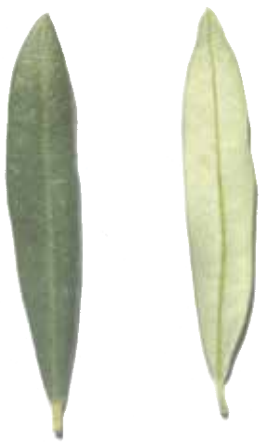
1 - Parlati M. V., Pandolfi S. In: *Olivo e Olio,* (2001), 4: pp. 67-72.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Verdello "

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (6,03 ± 0,08)**
Oil content (%): **medium (50,35 ± 0,26)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading-erect**
Canopy-density: **medium**



Leaf characters
Blade length (cm): **short (4,51 ± 0,44)**
Blade width (cm): **narrow (0,95 ± 0,12)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,97 ± 1,56)**
Number of flowers: **medium (21,78 ± 3,48)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (2,39 ± 0,45)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,30 ± 0,01)**
Shape (length/width): **elliptic**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

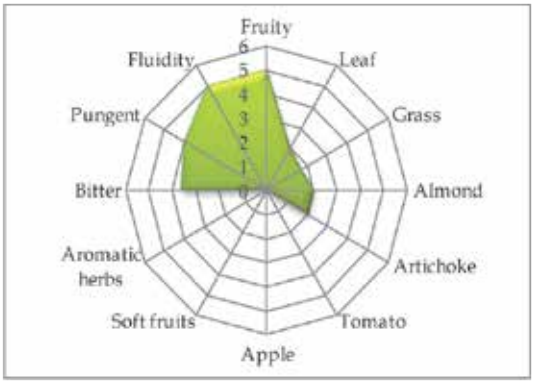
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**13,05 ± 1,38**	Lignoceric acid	**0,04 ± 0,02**
Palmitic acid	**13,12 ± 0,67**	Linolenic acid (ω3)	**0,91 ± 0,07**		
Palmitoleic acid	**0,88 ± 0,17**	Arachic acid	**0,30 ± 0,03**	Unsat./satured	**5,58 ± 0,44**
Stearic acid	**1,78 ± 0,34**	Eicosenoic acid	**0,16 ± 0,18**	ω6/ω3	**14,40 ± 1,86**
Oleic acid	**68,98 ± 1,88**	Behenic acid	**0,09 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with taste of artichoke and almond, read sensations of grass and leaves. Balanced taste sensation with medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**181 - 181**	**212 - 222**	**210 - 214**	**124 - 126**	**159 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**150 - 150**	**166 - 166**	**143 - 143**	**170 - 220**	

References:

1 - Caruso T., Cartabellotta D., Motisi A., *et all*. In: *Cultivar di olivo siciliane*, Università degli Studi di Palermo (2007), pp. 124-128.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Vocio "

(synonymy: Corniolo da curare, Corniolo dolce, Olivo da pasto, Olivoce, Voce, etc.)

Areal distribution or origin area: **Umbria**
Flesh/pit weight ratio: **high (7,76 ± 0,49)**
Oil content (%): **medium (45,82 ± 0,08)**
Purpose: **dual purpose**

Morphological characters

Tree characters
Vigour: **medium-weak**
Growth habit: **erect-spreading**
Canopy-density: **medium**

Leaf characters
Blade length (cm): **medium (5,45 ± 0,47)**
Blade width (cm): **medium (1,20 ± 0,17)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **medium (2,55 ± 1,07)**
Number of flowers: **low (15,17 ± 1,54)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,86 ± 0,29)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,44 ± 0,01)**
Shape (length/width): **ovoid**
Mucron: **obvious**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **truncate**
Surface: **rugose**
Number of grooves: **low**

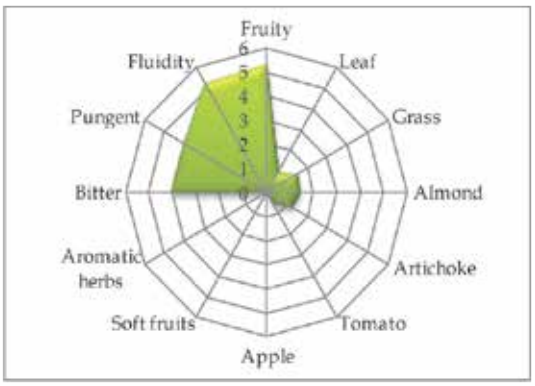
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**18,38 ± 0,56**	Lignoceric acid	**0,08 ± 0,01**
Palmitic acid	**14,42 ± 0,49**	Linolenic acid (ω3)	**0,66 ± 0,02**		
Palmitoleic acid	**1,23 ± 0,04**	Arachic acid	**0,39 ± 0,03**	Unsat./satured	**4,81 ± 0,14**
Stearic acid	**2,13 ± 0,04**	Eicosenoic acid	**0,35 ± 0,04**	ω6/ω3	**28,05 ± 0,06**
Oleic acid	**60,80 ± 0,07**	Behenic acid	**0,15 ± 0,02**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of almond, grass and artichoke, read sensations of leaves. Balanced taste sensation with a medium bitter and spicy. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 206	**177 - 181**	**214 - 214**	**214 - 214**	**130 - 144**	**150 - 157**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**143 - 143**	**166 - 177**	**161 - 205**	**205 - 213**	

References:

1 - Pannelli G., Alfei B., D' Ambrosio A., *et al.* In: *Varietà di olivo in Umbria*, Ed. Pliniana (2000), pp. 1-6.
2 - Muzzalupo I., Stefanizzi F., Bucci C., *et al.* In *Acta Italus Hortus,* (2011), 1: 138 –140.

" Zaituna "

(synonymy: Saracena, Saracinesca, Siracusana, Verdisi, Zaituni, etc.)

Areal distribution or origin area: **Sicilia**
Flesh/pit weight ratio: **medium (6,24 ± 1,60)**
Oil content (%): **medium (49,05 ± 1,59)**
Purpose: **table**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **erect**
Canopy-density: **sparse**

Leaf characters
Blade length (cm): **medium (5,56 ± 0,45)**
Blade width (cm): **medium (1,27 ± 0,11)**
Shape (length/width): **elliptic-lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,35 ± 1,50)**
Number of flowers: **low (12,58 ± 2,70)**

Fruit characters
Fresh weight of 100 fruits (g): **high (4,00 ± 1,99)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,54 ± 0,18)**
Shape (length/width): **ovoid**
Mucron: **absent**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **pointed**
Surface: **rugose**
Number of grooves: **medium**

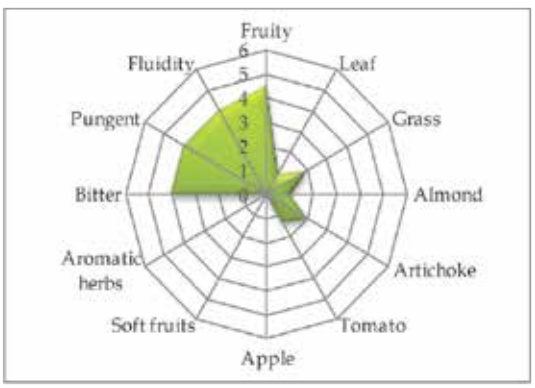
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,03 ± 0,01**	Linoleic acid (ω6)	**3,92 ± 1,37**	Lignoceric acid	**0,06 ± 0,01**
Palmitic acid	**11,44 ± 0,77**	Linolenic acid (ω3)	**0,84 ± 0,13**		
Palmitoleic acid	**0,68 ± 0,13**	Arachic acid	**0,24 ± 0,05**	Unsat./satured	**6,19 ± 0,25**
Stearic acid	**2,05 ± 0,50**	Eicosenoic acid	**0,04 ± 0,02**	ω6/ω3	**4,60 ± 0,91**
Oleic acid	**79,77 ± 0,79**	Behenic acid	**0,11 ± 0,08**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with good sensation of grass, artichoke, almond and tomato. Balanced in flavours, with hints of bitter and spicy medium-high intensity. Medium-high fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed. For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
182 - 206	**177 - 177**	**212 - 212**	**214 - 214**	**124 - 144**	**150 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
140 - 140	**150 - 150**	**166 - 193**	**182 - 182**	**108 - 108**	

References:

1 - Bottari V., Spina P. In: *Le varietà di olivo coltivate in Sicilia*, Ann. Sper. Agr. (1953), 7: pp. 937-1004.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience,* (2009), 44: pp. 582-588.

" Zimbimbo "

(synonymy: Nzimbibolo)

Areal distribution or origin area: **Puglia**
Flesh/pit weight ratio: **medium (5,66 ± 1,34)**
Oil content (%): **medium (39,72 ± 1,98)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **strong**
Growth habit: **spreading-erect**
Canopy-density: **dense**

Leaf characters
Blade length (cm): **medium (5,54 ± 0,36)**
Blade width (cm): **broad (1,62 ± 0,16)**
Shape (length/width): **elliptic**

Inflorescence characters
Inflorescence length (cm): **short (2,13 ± 0,38)**
Number of flowers: **low (13,92 ± 0,96)**

Fruit characters
Fresh weight of 100 fruits (g): **low (2,00 ± 0,32)**
Shape (length/width): **ovoid**
Symmetry: **slightly asymmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **rounded**
Niplle: **tenuous**
Lenticels: **many and small**

Pit characters
Weight of 100 pits (g): **medium (0,35 ± 0,04)**
Shape (length/width): **elliptic**
Mucron: **obvious**
Symmetry: **asymmetric**
Position of maximum transverse diameter: **central**
Apex: **pointed**
Base: **pointed**
Surface: **rugose**
Number of grooves: **low**

Biochemical Characters

Fatty Acid Composition

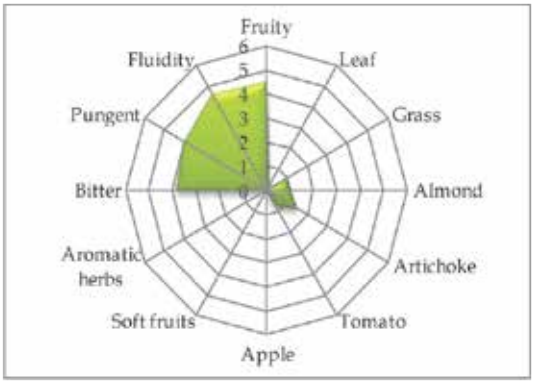
Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,01**	Linoleic acid (ω6)	**10,88 ± 1,12**	Lignoceric acid	**0,07 ± 0,00**
Palmitic acid	**12,68 ± 1,28**	Linolenic acid (ω3)	**0,53 ± 0,06**		
Palmitoleic acid	**2,41 ± 0,54**	Arachic acid	**0,24 ± 0,04**	Unsat./satured	**5,97 ± 0,55**
Stearic acid	**1,12 ± 0,06**	Eicosenoic acid	**0,29 ± 0,02**	ω6/ω3	**20,61 ± 4,53**
Oleic acid	**69,35 ± 1,10**	Behenic acid	**0,07 ± 0,02**		

Organoleptic oil values

Sensory Analysis (*Panel test*)

Comment: **fruity medium-high, with hints of artichoke, read sensations of grass, tomato and almond. Balanced taste sensation with a medium bitter and spicy. Medium fluidity.**



Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
198 - 198	**177 - 179**	**208 - 218**	**214 - 224**	**124 - 144**	**157 - 170**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**135 - 135**	**177 - 182**	**182 - 182**	**108 - 108**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Contributo alla caratterizzazione del germoplasma olivicolo pugliese,* Ist. Sper. Olivic. (2004), pp. 101-104.
2 - Muzzalupo I., Stefanizzi F., Perri E. *HortScience* (2009), 44: pp. 582-588.

" Zinzifarica "

(synonymy: Zinzolarica, Zuzufarica.)

Areal distribution or origin area: **Calabria**
Flesh/pit weight ratio: **high (7,74 ± 2,23)**
Oil content (%): **medium (48,22 ± 0,18)**
Purpose: **oil**

Morphological characters

Tree characters
Vigour: **medium**
Growth habit: **spreading**
Canopy-density: **medium-sparse**

Leaf characters
Blade length (cm): **medium (5,25 ± 0,63)**
Blade width (cm): **medium (1,13 ± 0,07)**
Shape (length/width): **elliptic—lanceolate**

Inflorescence characters
Inflorescence length (cm): **short (2,37 ± 1,26)**
Number of flowers: **low (16,21 ± 1,88)**

Fruit characters
Fresh weight of 100 fruits (g): **medium (3,92 ± 0,08)**
Shape (length/width): **spherical**
Symmetry: **symmetric**
Position of maximum transverse diameter: **central**
Apex: **rounded**
Base: **truncate**
Niplle: **absent**
Lenticels: **few and small**

Pit characters
Weight of 100 pits (g): **high (0,47 ± 0,11)**
Shape (length/width): **ovoid**
Mucron: **tenuous**
Symmetry: **symmetric**
Position of maximum transverse diameter: **towards apex**
Apex: **rounded**
Base: **rounded**
Surface: **scabrous**
Number of grooves: **medium**

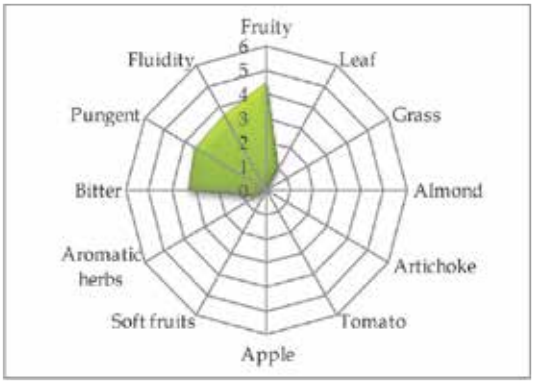
Biochemical Characters

Fatty Acid Composition

Table 1. Average values (express in % ± standard deviations) of the fatty acids methyl esters and nutritional ratios obtained from single cultivar olive oils.

Myristic acid	**0,01 ± 0,00**	Linoleic acid (ω6)	**14,66 ± 1,55**	Lignoceric acid	**0,05 ± 0,03**
Palmitic acid	**12,60 ± 0,50**	Linolenic acid (ω3)	**0,75 ± 0,03**		
Palmitoleic acid	**0,11 ± 0,01**	Arachic acid	**0,32 ± 0,06**	Unsat./satured	**5,77 ± 0,25**
Stearic acid	**1,84 ± 0,12**	Eicosenoic acid	**0,11 ± 0,18**	ω6/ω3	**19,63 ± 2,54**
Oleic acid	**68,34 ± 1,98**	Behenic acid	**0,10 ± 0,04**		

Organoleptic oil values



Sensory Analysis (*Panel test*)

Comment: **fruity medium, with read sensations of aromatic herb and leaves. Balanced taste sensation with medium bitter and spicy. Medium fluidity.**

Molecular Markers

Table 2. Microsatellites (SSR) *loci* analyzed.
For each *locus* the allele size (expressed in base pairs) is reported.

DCA09	*DCA18*	*GAPU59*	*GAPU71A*	*GUPA71B*	*GAPU103A*
162 - 198	**177 - 179**	**212 - 222**	**214 - 214**	**126 - 144**	**150 - 159**
UDO01	*UDO03*	*UDO12*	*UDO28*	*UDO39*	
144 - 144	**143 - 143**	**177 - 177**	**143 - 182**	**205 - 205**	

References:

1 - Lombardo N., Perri E., Muzzalupo I., *et al.* In: *Il germoplasma olivicolo calabrese*, Ist. Sper. Olivic.(2003), pp: 24.
2 - Perri E., Mazzotti F., Muzzalupo I., *et al.* In: *Relazione attività, CO.R.ASS.OL.* (2003).
3 - Muzzalupo I., Chiappetta A., Benincasa C., *et al Sci Hortic-Amsterdam*, (2010), 126: pp. 324-329.

Authored by Innocenzo Muzzalupo

The olive (Olea europaea) is increasingly recognized as a crop of great economic and health importance world-wide. Olive growing in Italy is very important, but there is still a high degree of confusion regarding the genetic identity of cultivars. This book is a source of recently accumulated information on olive trees and on olive oil industry. The objective of this book is to provide knowledge which is appropriate for students, scientists, both experienced and inexperienced horticulturists and, in general, for anyone wishing to acquire knowledge and experience of olive cultivation to increase productivity and improve product quality.

The book is divided into two parts: I) the olive cultivation, table olive and olive oil industry in Italy and II) Italian catalogue of olive varieties. All chapters have been written by renowned professionals working on olive cultivation, table olives and olive oil production and related disciplines. Part I covers all aspects of olive fruit production, from site selection, recommended varieties, pest and disease control, to primary and secondary processing. Part II contains the chapter on the description of Italian olive varieties. It is well illustrated and includes 200 elaiographic cards with colour photos, graphs and tables.

ISBN 978-953-51-5342-9

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