

## **AN IN DEPTH STUDY OF OLIVE OIL AND ITS NUTRITIONAL VALUE**

**Studies carried out over the past three decades show that the mortality rate caused by cardiovascular diseases in Italy were less than the rate in other western countries.**

**The reason for these differences seemed to lie in the diet especially the quality of fat intake such as cereals, vegetables, fruits, allot of fish and little meat, and in particular organic olive oil as the main culinary fat.**

**From a chemical point of view, the components of olive oil tend to be divided in saponifiable fraction (those transforming in soap when it is treated with an alkaline hydroxide) and another insaponifiable fraction.**

**The first fraction, which constitutes 97-99% of the total olive oil, is made up by traiglycerides, a small portion of free fatty acid responsible for the acidity degree of the olive oil**

**The second fraction is composed of different substances with a heterogeneous composition called secondary compounds of the olive oil.**

**Although the proportion of these compounds is minor (1-3%) they are very important from a nutritional point of view, quality and stability of the olive oil. In fact due to its high specificity, the secondary compounds are used as quality criteria**

### **SAPONIFIABLE FRACTION**

**The most important fatty acid is OLEIC ACID, with an unsaturated nature and which constitutes 55-83% of the content in fatty acids**

**The following saturated fatty acids are composed entirely between 13 and 21%. The most representative acid is Palmitic acid while the less representative is Stearic acid**

**Finally the polyunsaturated fats are fatty acids that appear less frequently; mainly Linoleic acid whose proportion ranges between 4 and 22%, the least appearing is Linolenic acid.**

**The content of fatty acids of olive oil varies significantly depending on the olive varietal grown, the most health giving is the CASALIVA grown around Lake Garda in Northern Italy.**

**Other factors that can modify qualitatively the fatty content of olive oil are the latitude, agronomic and climatic conditions, again these factors are significant to the high quality of the olives grown on cool high slopes such as Lake Garda**

#### **INSAPONIFIABLE FRACTION**

**Biological studies have recently highlighted the nutritional and beneficial health values due to its antioxidant, hypolipemic or antiatherogenic activity**

#### **HYDROCARBONS**

**Hydrocarbons set up the 32-50% of the insaponifiable fraction.**

**The main hydrocarbon in olive oil is Squalene, intermediate product for the biosynthesis of cholesterol and precursor of other molecules such as phytosterol. Its presence in the olive oil can be up to 750 mg per 100, a quantity that is larger than other seed oils.**

**The B-Carotene is another hydrocarbon present in olive oil, together with the chlorophyll is responsible for the yellowish green colour of extra virgin olive oil. It is a pigment that acts in the photosynthesis and protects the plant from oxidation, but its interest from a nutritional point of view lies in its activity as PROVITAMIN A.**

#### **TOCOPHEROLS**

**Tocopherols give stability to the olive oil and play a beneficial role to one's health due to its antioxidant activity**

#### **PHYTOSTEROLS**

**They are compounds of the Squalene which have a structural function since they are constituent of the vegetal cellular membranes.**

**The components are related to the quality of the olive oil, but physiologically they are important because of their biological action against cholesterol particularly with organically grown olives.**

**The most abundant phytosterol is B-Sitosterol that represents 90-95% of the total sterols**

#### **PHENOLIC COMPOUNDS**

**They are compounds that are characteristic of green aromatic plants whose basic unit is phenol.**

**More than 8,000 vegetal phenols are known; among them are Gallic, Coumaric, Caffeic and Cinnamic acids**

#### **NUTRITIONAL BENEFITS OF ORGANIC HS OLIVE OIL**

**Olive oil consumption will give us a great caloric contribution due to its great composition on triglycerides, which is approx 900 Kcal per 100g**

**The fatty acid that composes these triglycerides will be OLEIC acid which will be translated in the creation of more resistant membranes to oxidation, a reduction in the fraction of LDL (Low Density Lipoprotein) and an increase in the fraction of HDL (High Density Lipoprotein) with positive cardiovascular advantages that this implies. This fatty acid will be the precursor of the essential fatty acids W-3 and W-6 indispensable in our organism**

### **TOCOPHEROL**

**In a physiological level, tocopherol will have an ante oxidant activity since this compound is able to neutralise the free radicals in the body.**

**This activity is also produced on the lipids of the organism preventing Peroxidatio of the cellular membranes.**

### **B-CAROTENE**

**This compound has a great relevance in a vascular level because it prevents the oxidation of the molecules of LDL, the most important cause of the cardiovascular pathologies.**

**Furthermore, this molecule has an activity as po-vitamin A, which once absorbed will become retinol in our organism. It has influence on our vision and the creation of epithelial tissues.**

### **PHYTOSTEROLS**

**Phytoserols have a great importance at a physiological level thanks to its lipid lowering capacity.**

**Its activity is to compete at the intestinal level with the dietetic cholesterol reducing its absorption.**

### **POLIPHENOL**

**In these molecules there is an important antioxidant power. Also they have an anti-inflammatory effect due to its intervention in the production of Interleukins and Prostaglandins, two molecules responsible for the inflammatory process**

### **CONCLUSION**

**The most important tocopherol is the ALA TOCOPHEROL which is 95% of the total and it has the most important activity as VITAMIN E. The concentration of tocopherol in olive oil depends on several factors such as the varietal of olive, the degree of ripeness and the harvest date, again the perfect combination is achieved on the higher slopes of northern Italy around Lake Garda where the ‘Casaliva’ varietal flourishes in the cooler climate.**

**There is now conclusive evidence that high quality (HS) organic extra virgin olive oil, particularly from olives grown in Northern Italy has numerous health benefits due to:**

**Unsaturated fats (Oleic)**

**B-Carotene**

**Phosterols such as el B—sisterol**

**Phenolic compounds such as Coumaric acid**

## **Monte Castello Silver H.S. Extra Virgin Olive Oil**

At the Agricola Monte Castello Estate, my family resurrected an ancient olive grove 500 metres above Lake Garda in northern Italy which had hundreds of olive trees many of which were over 100 years old. With the help of the agronomist Renzo Furlani who is the expert on the olive trees for this area, our olive trees have come to life once again to produce exceptional olive oil.

Now, our full time agronomist Marco Penitenti who was trained by Snr Furlani continues in his footsteps and selects only the finest oil to be bottled under our Monte Castello Silver label

By planting 60% Casaliva, 30% Leccino and 10% Pendolino olive varieties, ensuring the taste has a wonderful harmonious balance.

We have also been granted H.S. (High Standard) certification which is only given to those growers who comply exactly with the stringent rules and regulations surrounding the production of the highest superior quality extra virgin olive oil.

At Monte Castello the result of severe pruning produces the highest quality fruit, which is then pressed only once within two hours of being hand-picked, crucial to

maintain maximum freshness and eliminate the risk of oxidation. As a result of natural filtration through muslin so as not to bruise the oil, we have succeeded in producing by organic farming and Bio Dynamic methods a limited production olive oil of exceptional finesse and quality, the finest in the region.

Monte Castello Silver is characterized by its intense fruity flavour with a hint of pepper

This prestigious olive oil is completely free of cholesterol and high in antioxidants especially vitamin A, E, and K, and serves as a perfect complement to all types of food

**OUR MONTE CASTELLO OLIVE OIL WAS VOTED  
NUMBER 1 IN THE WORLD'S BLIND TASTING AND IS  
NOW AVAILABLE IN WILLIAMS SONOMA STORES  
ACROSS THE UNITED STATES OF AMERICA**