

## **STEROLS AND FATTY ACID PROFILE OF MATURE AND NON-MATURE OLIVE OIL FROM DIFFERENT REGIONS OF MESSINIA IN GREECE**

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Messinian olive oil is a fully balanced olive oil with a special characteristic the presence of monounsaturated fatty acids which give an essential value to olive oils and their presence is essential in a balanced diet.

High concentrations of monounsaturates in relation to saturated and polyunsaturated fatty acids present an indicator of high olive oil quality. Analysis of last year's olive oil in comparison to this year's showed an increase in K232 regarding last year's olive oil and an increase in the peroxide number. Both results were quite normal due to the resulting olive oil oxidation. K and peroxide number is judged normal and within the limits of extra virgin olive oil. This is due to the best storage conditions employed.

According to our measurements we concluded that the presence of light functioned catalytically on the olive oil increasing the degree of oxidation and destroying the chlorophyll. This resulted in rancidity and discolouration. Olive oil measurements were also carried out in different regions of Messinia. The same olive variety (koroneiki) is being used throughout Messinia and with no differences in climatologic conditions. The region with the best organoleptic characteristics is that of the northeast region starting from Kopanaki and reaching the Messinian Mani. Moreover, olive oil received from the agricultural organisations of Messinia at a height of 100-400 metres possesses an excellent quality as well as organoleptic characteristics.

Determination of sterols was carried out in mature and non-mature olive oil. Comparing the last year's mature and balanced extra virgin olive oil (20-1-2006) with this year's (15-1-2007), regarding sterols content, we saw that D7-stigmastenol and total erythrodiol values as well as total sterol values do not correspond to normal values and fall outside the permissible levels compared to this year's extra virgin olive oil, where values fall within permissible levels. Hence, we conclude that this year's olive oil is mature and has come from a seed that contained a fully developed oil whereas last year's olive oil has come from a mature seed that contained a non-developed oil. The oil is non-developed or under-developed that is why the sterol fractions are not in balance with each other as it would be expected, for example total sterols are too much down the 1000 mg/kg of olive oil whereas campesterol is over the permissible level.