

## **Effect of Ripening Degree on Olive Oil Sesquiterpene Hydrocarbons**

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Sesquiterpene hydrocarbons are plant metabolites implicated in several physiological functions throughout development and in response to biotic and abiotic environmental factors. As their production is under genetic and environmental control, recent studies revealed that the sesquiterpene composition of virgin olive oil may be taken into consideration as genetic or geographical marker of virgin olive oil origin. In fact, despite of their low concentration in olive oil, they showed a high differentiation depending on variety and growing conditions of the olive trees, while they seem to be scarcely influenced by technological factors involved in oil production.

Nevertheless, there is scarce information available on the qualitative and quantitative composition of olive oils sesquiterpene fraction, as well as on their dependence on factors other than genetic and geography. The composition of olive oil is largely determined, among other factors, by the fruit ripening degree, so that the harvest time can have a deep influence on the sesquiterpenic profile of virgin olive oils.

The aim of the present study was to determine the influence of olive ripening degree on the presence of sesquiterpene hydrocarbons in virgin olive oil 'Chemleli' grown in Tunisian geographical area. Headspace analysis of oils from olives harvested from October to February showed a great influence of the olives harvest date on the content of more than twenty sesquiterpenic hydrocarbons identified in oil. Most of these sesquiterpenes decreased with the olive ripening, while some other showed a noticeable increment with time. These results give further insights on the factors affecting sesquiterpenes content of virgin olive oil, and on their possible role as virgin olive oil markers.