

Combined Effect of Olive Paste Humidity and Talc Addition During Malaxation on Virgin Olive Oil Volatile and Phenolic Composition.

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The general aim of this study was to improve the knowledge on the technological variables involved in the malaxation operation that affect the overall quality of virgin olive oil, and in particular its content in minor compounds. Volatile and phenolic compounds are in fact the main responsible for the flavour of extra virgin olive oil, and therefore affect the consumers' preference of this highly appreciated food product. Moreover, biophenols are related to the oxidative stability and antioxidant capacity of the oil and possess a high nutritional value.

Several studies have point out the great importance of the kneading operation in the virgin olive oil processing technology. In fact, malaxation is much more than a simple physical separation, since a complex bioprocess take place which is very relevant to the final product quality.

The main goal of this research was therefore to study the combined effect of (i) the olive paste humidity and (ii) the addition of micro-crystalline talc during malaxation on the profile of volatile and individual phenolic compounds in two different monovarietal virgin olive oils: Arbequina and Cornicabra. The influence of the kneading conditions studied on the oil yield mass balance, virgin olive oil quality indexes and the content of other relevant minor compounds were analyzed as well. A fully equipped continuous experimental oil mill plant (Pieralisi, Fattoria) with a capacity of 200 kg/h olive paste was employed.