

Phenolic and Volatile Profiles in Olive Fruit and Virgin Olive Oil: effect of the Olive Cultivar and Fruit Maturation

Salvador M.D., Gómez-Rico A. and Fregapane G.

Departamento de Química Analítica y Tecnología de los Alimentos,
Universidad de Castilla - La Mancha, Ciudad Real, España.

Volatile and phenolic compounds are 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.

The phenolic and volatile profiles of virgin olive oils depend on both the chemical and biochemical (e.g. enzymes activities) composition of the olive fruits processed and the technological conditions employed by the oil mill during processing. On the other hand, the composition characteristics of the olive fruits depend on some agronomical factors, mainly the olive cultivar, the ripening stage of the fruit, the pedoclimatic conditions and the irrigation management.

Several studies have shown the important differences existing between phenols contents in different olive cultivars, as well as their evolution with fruit ripening. Moreover, phenolic and volatiles compounds have also been used to classify or discriminate between virgin olive oil samples on the basis of the olive fruits maturation stage, geographical origin or variety.

The ultimate goal of this research is therefore to further improve the current knowledge with regard to the phenolic and volatile profiles in the olive fruits and virgin olive oils, due to their important role in the oil quality and because they could be used as cultivar markers. In this poster, the experimental work carried out to determine the effect of the cultivar and the degree of ripening on the phenolic and volatile compositions of both (i) the olive fruits and (ii) their corresponding virgin olive oils of six Spanish varieties (Arbequina, Cornicabra, Morisca, Picolimón, Picudo and Picual) is reported.