

Changes in Sterols, Fatty Alcohol and Triterpenic Alcohol during Ripe Olive Processing

A. LÓPEZ-LÓPEZ*, F. RODRÍGUEZ GÓMEZ, A. CORTÉS-DELGADO
and A. GARRIDO-FERNÁNDEZ

*Departamento de Biotecnología de Alimentos, Instituto de la Grasa (CSIC), 41012 Sevilla, Spain, *E-mail: all@cica.es*

Abstract: The unsaponifiable matter, sterols and fatty and triterpenic alcohol changes during ripe olive processing were studied. At the end of processing, the values of most of these parameters were within the limits established by the EU Directives for the classification of olive and pomace oils into their diverse categories; but the evaluations were contradictory and showed that such Directives may not be appropriate for expressing their real quality. The univariate analysis of variance showed significant effects of cultivars or processing steps (ps) on unsaponifiable matter, β -sitosterol, delta5-avenasterol, total sterols, 1-docosanol, 1-tetracosanol (ps), erythrodiol and percentage erythrodiol plus uvaol. The application of the principal components analysis showed the relationships among three main groups of compounds (clerosterol, brassicasterol and 1-docosanol; 1-tetracosanol, 1-hexacosanol, erythrodiol and 1-octacosanol; and stigmasterol, campestanol, cholesterol, delta7-avenasterol and campesterol). The discriminant analysis, using these variables, permitted 100% success in the classification according to cultivars and processing steps (68% in case of cross validation).

Keywords: discriminant analysis; fatty alcohols; ripe table olives; sterols; triterpenic alcohols

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