

Technological Ripening Indices for Olive Oil Fruits

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To achieve extra virgin olive oil with a high quality standard, it is essential that crushing of olive drupes be performed at an appropriate technological ripening stage. In our previous work, sugar concentration was proposed as an accurate reproducible index for technological ripening (Cherubini *et al.*, 2009). The aim of this work was to determine the value of those chemical components of olives that may be responsible for achievement of an appropriate ripening stage, for each olive cultivar over years. As a result of the biochemical phenomenon of oil formation in olive fruits, sugar concentration during ripening was shown to follow a sigmoidal decrease and sometimes an oscillating trend around a minimum value. This trend resulted to be the cause of an opposite sigmoidal increase in the oil content (Migliorini *et al.*, 2011; Nergiz and Engez., 2000). Phenolic content during ripening showed a decreasing linear trend in most cases. Collected data was statistically processed, and it was possible to define ranges of chemical contents able to establish an optimal harvest stage for each olive cultivar. Three-D diagrams were applied to our experimental data to show the effect of harvesting time (i.e. day after full blooming) on sugar and oil contents of olive fruits.

References Cherubini C, Migliorini M, Mugelli M, Viti P, Berti A, Cini E and Zanoni B. Towards a technological ripening index for olive oil fruit. *J Sci Food Agric* **89**: 671-682 (2009). Nergiz C and Engez Y, Compositional variation of olive during ripening. *Food Chem* **69**:55-59 (2000).