

## **Oxidation Volatiles in Virgin Olive Oil as Result of Olive Paste Malaxation Conditions**

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In this work the effect of olive paste malaxation conditions: time(60 and 90 min), temperature (18, 30 and 40°C) and micronized talc addition (0 and 1%) was evaluated for 3 crop years. 'Picual' olive fruits harvested in November were used and the oil extracted at industrial scale. Volatiles were extracted by HS-SPME and analysed by FID-GC. Those oxidation volatiles from linoleic and linolenic acids, by lipoxygenase pathway, hexanal and t-2-hexenal respectively are the main responsible of green flavour in virgin olive oils. Their content decreased as malaxation time increased, achieving the higher concentrations at lower kneading temperature: 18°C.

t,t-2,4-heptadienal, from linolenic acid by autoxidation process, lowered for longer malaxation time.

Nonanal and decanal are produced from oleic acid autoxidation. Higher malaxation temperature gave virgin olive oils with greater nonanal content. The highest decanal content was obtained kneading the olive paste at 30 °C although was lower at 40°C. Micronized talc addition had non significant effect on oxidation volatiles.