

Monitoring the Physicochemical and Sensory Properties of Virgin Olive Oils from de-stoned Olives

Ranalli, A., Marchegiani, D., Pardi, D., Pardi, D.,

CRA–Consiglio per la Ricerca e la sperimentazione in Agricoltura – Istituto Sperimentale per l'Elaiotecnica, Viale Petruzzi 75, 65013 Città Sant'Angelo (Pe), Italy

In the last few years much attention has been paid to de-stoned oils considered to have high added value as well as marked palatability and health properties. In fact, these oils are prepared using destoners in the place of crushers; these latter machines exert violent action on the vegetable tissues, thus causing a “mechanical and thermal stress” of olive paste, with consequent decrease of oil quality. Such a decrease also is to be ascribed to the presence of kernels in stoned olive paste, whose tissues are very rich in oxidoreductase enzymes (especially peroxidase ones). We carried out experimental olive oil extractions from de-stoned and stoned *Coratina* and *Caroleo* olive varieties. In some experiments the de-stoned olives were treated with: (i) *Maxoliva* enzyme complex (having depolymerising effects); (ii) micronised food talc (exerting draining actions); and (iii) both enzyme and talc. The oil samples were fully characterised. Analytical methods HRGC, HPLC, HPSEC, GC-MS, LC-MS, TLC and others were used. The de-stoned oil samples exhibited higher value concerning volatiles, total biophenolics, *o*-diphenols, ligstroside and oleuropein aglycons (dialdehydic forms of elenolic acid linked to either tyrosol or hydroxytyrosol), endurance to oxidation and phytosterols, and lower values relating to pigments (chlorophylls, pheophytins, xanthophylls, and carotenes). Their integral colour index (assessed from chroma and brightness values) was thus lower. Finally, they displayed more marked fragrance and quality level of aroma and flavour (which was also more harmonic and equilibrated). Hence, they were scored more by the panellists.