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MEETING ABSTRACT OP

Refining of olive oil using sulphites during oil production

Chrysostomos Tsitsipas* and Dimitrios Gerasopoulos

Food Processing & Engineering Laboratory, Department of Agriculture, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

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Abstract: Extra virgin olive oil is a source of bioactive compounds intake, with great nutritional value and beneficial health properties. Preserving the nutritional value and sensory profile is the big challenge during VOO's production and shelf life. One of the main "enemies" of quality is oxidative degradation, through chemical or enzymatic pathways. In the present study, the possibility of intervention to interrupt the chain of oxidative reactions, using potassium metabisulphite, was investigated. Although the use of any chemical compound in the production of olive oil is prohibited, this method could be applied to the production of olive oil from fruits of degraded quality. The experimental design included the production of olive oil with the addition of metabisulphites during the fruit milling stage, but also during olive paste malaxation, at levels of 1500 ppm, 2000 ppm and 2500 ppm. The results of the analyses of the olive oil, which was obtained after the use of potassium metabisulphite during milling, showed a zeroing of the peroxide number from the use of 1500 ppm of salt, which in the control was 16 meq O_2/kg. The acidity value did not change compared to that of the control, up to the concentration of 2500 ppm. The UV absorbance values showed a statistically significant decrease compared to the control, which indicates the synergy of the metabisulphite salts in partially removing oxidation intermediates. At the same time, the total phenolic value showed a decrease of up to 33%, at the concentration of 2500 ppm. A similar picture was shown by the analyses of the samples, after the use of sulphites in olive paste malaxation.

Keywords: Extra virgin olive oil, oxidative degradation, potassium metabisulphite, peroxide value, phenolic compounds

ORCID
Chrysostomos Tsitsipas: 0009-0004-2232-3844
Dimitrios Gerasopoulos: 0000-0002-0262-6993

*Corresponding Author: Chrysostomos Tsitsipas.
Email: ctsitsip@agro.auth.gr

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