

# **Basil and Oregano Flavoured Olive Oil – the Influence of Herb Processing on Oil Oxidative Stability**

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Home-made flavoured olive oils, prepared with the use of fresh or dried herbs, are gaining popularity as a part of the search of new tastes and health promoting ingredients. It is known that the flavouring with dried herbs can delay the oxidation of olive oil. However, there is no data on the influence of herbal flavour additives preparation procedure on the oxidative stability of olive oils. In this work flavoured olive oils were prepared with blanched, oven-dried and microwave-dried basil and oregano, and the oxidation stability of thus flavoured olive oil was studied with the Electron Spin Resonance (ESR) technique.

PBN spin trap was used and the formation of free radicals during accelerated aging at 70°C for 6 hours was monitored according to Velasco with modifications [1], using X-band spectrometer at 9.3 GHz. The ESR method was combined with determining well-established oxidation status indicator, peroxide value (PV), and the content of carotenoids and phenolics as antioxidants that can influence the oxidative stability of oil, as well as improve its pro-health properties. All parameters were determined after 4 and 8 weeks of storage (room temperature, no light), as this is the average time of storing home-made olive oils, with olive oil without additives as a control sample.

There was no significant influence of the flavouring on the peroxide value of olive oils, while the radical adducts concentration was lower for flavoured oils than for the control sample. For all samples only lipid-derived spin adducts were observed. As for the antioxidants, the carotenoid concentration was slightly higher for all flavoured oils as compared with parent oil, and increased during storage for oils flavoured with blanched and oven-dried herbs. In contrast, the phenolics content decreased significantly with time, with the most prominent decrease for blanched herbs oils and the least prominent for microwave dried herbs oil.

[1] J. Velasco, M. L. Andersen, L. H. Skibsted, *Food Chemistry*, 85, 623–632 (2004)