

Functional Properties of Aromatized Virgin Olive Oil by Rosemary (*Rosmarinus officinalis*)

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The idea, aromatization of food products with vegetables, herbs, and spices has been an increasing topic in food science and industry. The final product of this idea provides new concepts with increased functional properties. In the present study, it was aimed to display influences of an aromatic plant addition into virgin olive oil on the functional properties of this product. Rosemary (*Rosmarinus officinalis*) was used to flavor the virgin olive oil produced by cold hand pressing of olive fruits after crushing and malaxation. Ground rosemary was added into the crushed olive fruits just before malaxation at the specified percentages. Well mixed olive-rosemary paste was introduced into laboratory scale hydraulic press for separation of oil from olive pomace. During the malaxation process, additive amount (%), mixing temperature (°C) and time (min) were examined according to experimental design specified for this study and their effects on the functional properties of aromatized olive oil was investigated. Our results indicated that an addition of rosemary increased the antioxidant activity of olive oil due in part to its favorable effect on total phenolic content of final product. Meanwhile total carotenoids, and chlorophyll content of oils were also determined since these compounds were the main contributors of the antioxidant activity. Response surface methodology was used for the optimization of malaxation of crushed olive fruit-rosemary mixture to obtain aromatized virgin olive oil in terms of its functional properties and bioactive content. The proposed model indicated the high rosemary significance on antioxidant activity in the studied concentration ranges, whereas temperature was found to possess an intensifier effect just in case of an interaction with rosemary. Malaxation time displayed no effect on it. Models for bioactives were also presented.