Effect of Olive Leaves Addition and Wastewater Recycling on the Productivity and Quality of Olive Oil Produced by Centrifugation

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Two olive fruit cultivars (Picual and Chemlali) were used to investigate the effect of olive leaves addition (2% w/w) during crushing process as well as wastewater recycling (60 L/100kg paste) during malaxation process on yield, physicochemical properties, fatty acid composition and sensory evaluation of oils produced by centrifugation. Produced oils after the addition of leaves were characterized (with respect to control oils) mostly by: (i) higher polyphenols content (4.2 –5.8%), (ii) similar values of acidity and peroxide, (iii) Similar contents of saturated and unsaturated fatty acids, (iv) more preferable taste and (v) categorized as extra virgin olive oil. Application of wastewater recycling led to increase oil yield by 2.5-3 % and reduce wastewater. The produced olive oils were characterized (with respect to control oils) by: (i) higher content of polyphenols (25%), (ii) similar values of acidity and peroxide, (iii) Similar contents of saturated and unsaturated fatty acids, (iv) similar organolyptic properties and (v) categorized as extra virgin olive oil. Therefore, addition of olive leaves during crushing process and recycling of wastewater during malaxation process could be recommended by production of extra virgin olive oil.

**Key Words:** Olive oil, olive leaves addition, wastewater recycling, quality parameters, fatty acids composition, sensory evaluation.