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Utilization of Olive Pomace as A Source of Bioactive Compounds in Quality Improving of Toast Bread

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Abstract

Olive oil pomace is produced as by-product with a large quantity during olive oil processing. It is a promising source for polyphenolic compounds and fibers which could be used in food industry. In this work proximate chemical analysis of olive pomace (two-phase olive oil extraction) was studied. Also, seven extracting solvents were tested in extracting the phenolic compounds from the olive pomace (OP). Total phenolic, flavonoids, and flavonols contents of the different extracts were determined. In addition to, the antioxidant activity of the phenolic extracts was investigated using 2, 2-diphenyl-1-picrihydrazyl (DPPH) to assess the extracting efficiency of solvents. The obtained data rivaled that protein, fat, ash and fiber contents of OP were 2.48, 2.33, 1.33 and 20.37% (FW), respectively. It is clear that the OP contains a large quantity of fibers and it had cellulose content about 40.7% of the fiber content. Furthermore, the total phenolic content was varied in the various extracts and ranged from 8.29 to 36.24 mg GAE g -1. While, total flavonoids were ranged from 2.23 to 12.52 mg QE g-1. Methanol and water (80:20) recorded the highest antioxidant activity with EC50 of 1.373µg/µg DPPH while, the acetone extract recorded the lowest antioxidant activity with EC50 of 8.052µg /µg DPPH. Toast bread was fortified with the cellulose isolated from OP at three replacement levels of 2, 4, and 6% and the results showed no significant differences between control sample and the sample fortified with 2% cellulose in most of sensory characteristics tested. Addition of pomace cellulose at replacement level of 2% enhanced the texture of the bead and was more acceptable than the control. The results concluded that olive pomace is a good source for dietary fibers and polyphenolic compound which could be used in the food industry.

Keywords*: Olive pomace, Bioactive compounds and Toast bread*