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Antioxidant and Antimicrobial Activities of Onion Peels Extract and Fortification of White Wheat Flour to Prevent Health Hazard

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The oxidation eliminates health benefits of edible oil and cause many human hazards, which can be reduced by using natural antioxidant phenolic extracts. Yellow onion peel has been reported to contain the phenols of different structures. When olive oil is fortified by antioxidant's extract from onion peels, it can decrease oxidation. This study aims to delay oxidation in virgin olive oil. The samples of onion peels and olive oil were collected and stored in a good condition until use. The onion peels were washed, dried and ground samples were introduced into the 80% aqueous ethanol (ethanol: water, 80:20 v/v) with a ratio of 1:30 (sample: solvent) for 30 minutes along with ultrasonic shaking. The extracts were separated from the residues by filtering through filter paper. The combined extracts were concentrated and freed of solvent under vacuum at 45oC, using rotary evaporator. The dried crude concentrated extracts were stored in a refrigerator (-4 ◦C) until needed The total phenolic content and antioxidant activity of onion peels extract will estimate it. The onion peel extracts will be added in three concentrations (300, 600 & 900 ppm) to the virgin olive oil. Treated and untreated (control) oil samples will be stored in the dark at ambient temperature (approx. 25C and 40C) for 80 days. The samples will be analyzed before and after the extract is added with acid value, Peroxidevalue, Lodinevalue, Anisidinevalue, K232 and k270. The yellow onion skin extracts have antimicrobial activity in relation to E. coli, Pseudomonas aeruginosa, Staphylococcus epidermidis and Staphylococcus aureus as the method will determine. The extract showed antioxidant and antimicrobial activity; it was effective in preventing formation of hazardous compounds, and therefore increased shelf life of oils.

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