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Extraction of phenolic compounds and antioxidant activity of henna leaves extracts (*lawsonia inermis)* using solvent and ultrasound assisted method

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Objective: To assess antioxidant activity of Henna leaf extracts
Methodology: Methanol, ethanol, acetone, chloroform, hexane and water were used to prepare extracts of henna leaves. Effect of sonication on extraction of antioxidant compounds was studied. Total phenolic content of extracts were determined using spectrophotometric method according to the Folin-Ciocalteu and calculated as tannic acid equivalents. Henna leaf extract as a natural antioxidant was evaluated during 16 days storage of refined soybean oil at 63 ºC. Peroxide values (PV) and 2-thiobarbituric acid (TBA) values were used as criteria to assess the antioxidant activity of henna leaves extract. Antioxidant activity of water and methanolic extracts was determined by using the rancimat method (90, 120, 150ºC).
Results and conclusion: Use of water in comparison with methanol resulted in more extraction of phenols. Efficiency of solvents to extract phenolic compounds was methanol>water=ethanol>acetone=chloroform>hexane. Sonication improved the total phenolic compounds of the extracts with shorter extraction times. Samples containing BHA and BHT at 200 ppm and methanolic extract at 800 ppm and 1400 ppm had equal TBA and PV value. Extraction method has significant effect on phenolic compound and antioxidant activity of Henna extract.