

Title Citrus peel extract – A natural source of antioxidant
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Abstract

Citrus peel extract as a natural source of antioxidant was evaluated during 6 months storage of refined corn oil at 25 and 45 °C. Extracts of citrus peel were prepared by refluxing the dried ground peel with ethanol, methanol, acetone, hexane, diethyl ether and dichloromethane. Maximum amount of citrus peel extract was obtained with methanol. Antioxidant activity of methanolic extract was assessed by measuring free fatty acid (FFA) content peroxide value (POV) and iodine value (IV) during 6 months storage of refined corn oil at 25 and 45 °C. After 6 months of storage at 45 °C, corn oil containing 1600 and 2000 ppm citrus peel extract, showed lower FFA contents (1.5% and 1.0%), and POVs (8.38 and 7.0 meq kg⁻¹) and higher iodine values (81, 89) than the control sample (FFA 17.0% POV 101 meq kg⁻¹ IV 47). Refined corn oil containing 200 ppm of butylated hydroxy anisole (BHA) and butylated hydroxy toluene (BHT) showed FFA contents of 2.0% and 1.8%, POVs 17.0 and 12.7 meq kg⁻¹ and IVs 84 and 87, respectively, after 6 months of storage at 45 °C. These results show that methanolic extract of citrus exhibited very strong antioxidant activity, which was almost equal to synthetic antioxidants (BHA and BHT). Therefore, the use of citrus peel extract is recommended as a natural antioxidant to suppress development of rancidity in oils and fats.