Effect of Hinembilla (*Antidesma alexiteria*) Extract on Oxidative Stability of Selected Edible Oils

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Oxidation of oil is a major challenge in food processing sector which leads to deterioration of quality. Though, synthetic antioxidants are effective in preventing rancidity of oils, these substances show adverse health effects. Thus, the present study aimed to utilize natural antioxidant extracted from Hinembilla (*Antidesma alexiteria*) to retard the rancidity of selected edible oils. Extract was prepared with 70% ethanol using ultrasoundassisted extraction. The antioxidant efficacy of extract was measured using 2,2-diphenyl1-picrylhydrazyl (DPPH) radical scavenging capacity and Folin-Ciocalteu method was used to measure total phenolic content (TPC). Free fatty acid (FFA) content and peroxide value (PV) of sunflower oil (SO) and virgin coconut oil (VCO) were measured at 3-day intervals after addition of extract at three different concentration levels *viz* 500, 1,000, and 2,000 ppm, and α-tocopherol (500 ppm) was used as the positive control and the experiment was continued for 21days at 65±1°C. Antioxidant activity (IC_{50}) and TPC of the extract were 135.33±4.49 µg mL^{-1} and 6.77±0.03 mg GAE per gram extract, respectively. FFA content and PV of both oils were increased with the time. FFA content and PV of SO (FFA:0.14%; PV:12.23 meq kg^{-1}) and VCO (FFA:0.22%; PV:1.19 meq kg^{1}) added with extract at 2,000 ppm were significantly lower ($p<0.05$) than those of positive control; SO with α-tocopherol (FFA:0.22%, PV:17.94 meq kg^{-1}) and VCO with αtocopherol (FFA:0.29%, PV:1.39 meq kg^{-1}) after 21 days. In conclusion, Hinembilla extract had a positive impact on oxidative stability of selected oils at 1,000 and 2,000 ppm levels. Hence, *A. alexiteria* fruit is an excellent antioxidant source which can be effectively used to stabilize the oxidation of edible oils.

Keywords: Antioxidant, Free fatty acid, Peroxide value, DPPH, Virgin coconut oil