Antioxidative properties of Pandanus amaryllifolius leaf extracts in accelerated oxidation and deep frying studies

ABSTRACT

The potential uses of Pandanus amaryllifolius leaf extract as a natural antioxidant were evaluated in refined, bleached and deodorized (RBD) palm olein, using accelerated oxidation and deep frying studies at 180 °C from 0 to 40 h. The extracts (optimum concentration 0.2%) significantly retarded oil oxidation and deterioration ($P < 0.05$), comparably to 0.02% BHT in tests such as peroxide value, anisidine value, iodine value, free fatty acid, oxidative stability index (OSI), polar and polymer compound contents. In sensory evaluation studies, different batches of French fries were not significantly different ($P < 0.05$) from one another for oiliness, crispiness, taste and overall acceptability when the same oil was used for up to the 40th hour of frying. P. amaryllifolius leaf extract, which had a polyphenol content of 102 mg/g, exhibited an excellent heat-stable antioxidant property and may be a good natural alternative to existing synthetic antioxidants in the food industry.

Keyword: Frying, Pandanus amaryllifolius leaf extract, Palmolein, Sensory evaluation antioxidant, Accelerated oxidation study