THE EFFECT OF HEATING ON THE ANTIOXIDANTS CONTENT IN EDIBLE OIL

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ABSTRAK

Terdapat banyak jenis minyak masak dengan pelbagai jenama boleh didapati di pasaran. Jenis-jenis minyak yang digunakan dalam analisis kandungan antioksidan adalah minyak kelapa sawit, minyak zaiton, minyak canola, minyak bunga matahari, minyak kacang soya, minyak jagung, minyak bijan, minyak 'rice bran' minyak campuran dan minyak ayurvedic. Apabila sampel-sampel minyak tersebut dipanaskan pada suhu yang berbeza, kandungan antioksidannya menunjukkan kesan negatif. Kandungan antioksidan di dalam semua sampel minyak menunjukkan pola menurun apabila dipanaskan. Sampel yang mengandungi kandungan antioksidan tertinggi pada semua suhu 180 ^{o}C ialah minyak jagung, diikuti minyak kelapa sawit, minyak bunga matahari, minyak zaiton, minyak canola, minyak ayurvedic, minyak 'rice bran', minyak campuran, minyak kacang soya dan minyak bijan. Oleh itu, minyak jagung merupakan minyak yang paling sesuai digunakan untuk memasak pada suhu tinggi.

ABSTRACT

There are many types edible oils with various brand found in the market. The types of oils involved in the analysis for the antioxidants content were palm oil, olive oil, canola oil, sunflower oil, soy bean oil, corn oil, gingerly oil, rice bran oil, mixed oil and ayurvedic oil. The method used to evaluate the amount antioxidants in this study was 2, 2-diphenyl-1-picrylhydrazyl (DPPH). In this test, the scavenging of the DPPH radicals was followed by monitoring the decrease in absorbance at 515 nm. Heating the oil samples to various temperatures shows negative effect on the antioxidants content. The antioxidants content in all types of oils showed decreasing pattern when subjected to heat. The sample with highest antioxidants content at the temperature 180 ^{o}C is corn oil, followed by palm oil, sunflower oil, olive oil, canola oil, ayurvedic oil, rice bran oil, mixed oil, soy bean oil and lastly gingerly oil. Therefore, corn oil is the most suitable type of oil for high temperature cooking such as frying.

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LIST OF ABREVIATIONS

BHA	Butylated Hydrosyanysole
BHT	Butylated Hydroxytoluene
ROS	Reactive Oxygen Species
TBHQ	Tertiary Butyhydroquinone
ROOH	Hydroperoxides
DPPH	2,2-diphenyl-1-picrylhydrazyl
mM	milli mole
mL	milli litre