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PHYTOCHEMICALS SCREENING, ANTIOXIDANT ACTIVITY AND FRYING QUALITY AS AFFECTED BY AQUEOUS EXTRACT OF MALAYSIANSERAIKAYU (*EUGENIA POLYANTHA)*

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ABSTRACT

SeraiKayuor its scientific name is *Eugenia polyantha* is widely found in the Western part of the South East Asian peninsular and in Western Indonesia. The leaves are commonly taken as “ulam” in Malaysian communities. This paper reports the investigation of the phytochemical constituents and antioxidant potential of aqueous extract from leaves of *E.polyantha* and the frying quality of coconut oil were evaluated during deep frying of French fries. The amounts of total phenolic and flavonoids content were determined spectrometrically. There were three types of parameter used for frying quality of coconut oil; coconut oil without BHT as a negative control, coconut oil with BHT as a positive control and coconut oil with *E.polyantha* as a natural antioxidant. The oil quality was assessed by measuring the peroxide value, free fatty acid, iodin value and viscosity. Phytochemical screening of the crude extracts revealed the presence of different kind of chemical groups such as flavonoids, phenol, tannins, saponins, steroids and terpenoids. The result shows the extract had high phenol(213.15 ±1.1 mg GAE/g plant extract) and flavonoid content (2.47 ± 0.1 mg QE/g plant extract) with high DPPH scavenging ability (IC_{50} value: 0.15 ± 0.01) compared to BHT (IC_{50} value: 0.19 ± 0.01). The result for frying quality of coconut oil indicated that the extract delayed the oil deterioration. The *E.polyantha* extract significantly ($p< 0.05$) lowered the rate of oxidation in crude coconut oil, compared to negative and positive control. In general, the present findings suggest that the crude aqueous extract of *E.polyantha* leaves is a potential source of natural antioxidants and theextract was capable of extending the stability and quality of crude coconut oil and therefore has potential as new source of natural antioxidant for use in deep frying.

KEYWORDS: Eugenia Polyantha, Aqueous Extract, Phytochemicals, Antioxidant Activity, Frying