

Fatty acids, triacylglycerols, thermal properties, morphology and antioxidant activity of *Canarium odontophyllum* seed oil

ABSTRACT

Canarium odontophyllum Miq. (Dabai) is an underutilized fruit and its oil has the potential to broaden the availability of healthy edible oil. The objective of this study was to determine the physicochemical and thermal properties, fatty acid and triacylglycerol profiles, morphological behavior, and antioxidant capabilities of dabai seed oil (DSO) by using chromatographic and thermal techniques. The results showed that DSO has a low unsaturation values, high peroxide and refractive index values with a melting point at body temperature. DSO showed 56.47% saturated fatty acids, 40% unsaturated fatty acids and 29.88% of 1,3-dipalmitoyl-2-oleoyl-glycerol content. Some crystals showed larger than 30 μm in size and others smaller, including spherical, dot-covered spherulites between 0.5 and 5 μm in size. In addition, the amount of ferric reducing power and phenolic contents of DSO were 3.62 ± 0.10 mMol of Fe^{2+}/g and 21.73 ± 0.98 mg GAE per 100 g of samples. The DSO mimics the composition of palm stearin and palm oil mid fraction and showed comparable physicochemical and thermal properties to that of commercial cocoa butter. The results showed that the DSO has a traceable amount of antioxidant activity and good potential to be developed as a healthy edible oil resource.