

Determination of the antioxidant activity and bioactive compounds of mulberry fruit extracts

ABSTRACT

White mulberry (*Morus alba* L.) is a berry native to China which fruit is usually eaten fresh or after processed. Its bioactive compounds vary depending on species, cultivation, location and others. In this study, the total flavonoids content, total phenolic content, total anthocyanins content and antioxidant activity of *Morus alba* L. fruit grown in Tuaran, Sabah were analyzed. Fruit was extracted with 60°C hot water and 80% ethanol, while the total bioactive compounds analysis utilized aluminum chloride, Folin-Ciocalteu and pH differential method in determining the flavonoids, phenolic, and anthocyanins content. Their antioxidant activity was determined using Free Radical Scavenging 2,2-Dyphenyl-1-Pikrilhidrazil (DPPH), Ferric Reduction Antioxidant Power (FRAP) and Radical Cation 2,2'-Azino-bis (3-ethylbenzthiazoline-6-sulphonic acid (ABTS) assay. As a result, significantly higher ($p < 0.05$) content of total flavonoids (104.34 mg QE mg⁻¹), phenolic (1.21 mg GAE mg⁻¹) and anthocyanins (0.74 mg c-3-ge mg⁻¹) were obtained from ethanolic extract than the hot water extract. Also, significantly higher ($p < 0.05$) antioxidant activity was observed in ethanolic extract for DPPH (0.50 mg mL⁻¹), FRAP (3.74 mm Fe (II) g⁻¹) and ABTS (6.05 mg AEAC g⁻¹). Data showed that ethanol solvent (80%) is a better solvent for *Morus alba* L. fruit's extraction.