

**EXTRACTION OF ANTHOCYANIN FROM HINEMBILLA
(*Antidesma alexiteria*) FRUIT AS A NATURAL FOOD
COLORANT**

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ABSTRACT

Artificial food colorants impart health hazards thus, present study attempts to extract anthocyanin from Hinembilla (*Antidesma alexiteria*) fruit as a natural food colorant with promising antioxidant properties. Anthocyanin was extracted with ultrasound-assisted extraction (UAE) and maceration by using four different solvents (70% ethanol, acidified 70% ethanol, absolute ethanol and acidified absolute ethanol) at 40°C. Total Monomeric Anthocyanin (TMA) pigment content and Total Phenolic Content (TPC) were determined by pH differential method and Folin-Ciocalteu method, respectively. Antioxidant efficacy of extracts were determined by ferric reducing antioxidant power (FRAP) and 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging capacity assays. TMA content ranged from 67.80 to 129.92 mg L⁻¹. DPPH radical scavenging activity as measured by IC₅₀ ranged between 135.33 and 194.90 mg L⁻¹. FRAP ranged from 0.44 to 0.92 μmol Fe²⁺ per gram extract. TPC ranged from 3.33 to 6.77 mg gallic acid equivalents (GAE) per gram extract. Significantly (p<0.05) higher TMA (129.92 mg L⁻¹), FRAP (0.92 μmol Fe²⁺ per gram extract), TPC (6.77 mg GAE per gram extract) and lower IC₅₀ (135.33 mg L⁻¹) values were recorded in UAE with 70% ethanol. Hence, anthocyanin can be extracted effectively with UAE than maceration with comparatively high antioxidant properties. Moreover, 70% ethanol served as the best solvent to extract anthocyanin. The correlation of TPC with DPPH assay (IC₅₀) (R²=0.7) and FRAP values (R²=0.8) was strong, suggesting the phenolic compounds are the major contributor towards the exhibited antioxidant properties. In conclusion, *A. alexiteria* serves as an excellent source of anthocyanin with high antioxidant properties thus suggesting the potential applications as a natural food colorant.

Keywords: Anthocyanin, *Antidesma alexiteria*, Maceration, Ultrasound-assisted extraction