

Anthocyanin recovery from mangosteen (*Garcinia mangostana* L.) hull using lime juice acidified aqueous methanol solvent extraction

ABSTRACT

The recovery of anthocyanin from mangosteen (*Garcinia mangostana* L.) hull was investigated using an aqueous methanol solvent acidified by Mexican lime (*Citrus aurantifolia* Swingle) juice in comparison with the conventional HCl acidified methanol solvent. The addition of 0.20 mL lime juice/mL to an aqueous methanol extraction solvent gave a maximum total monomeric anthocyanin (TMA) recovery of 4.742 ± 0.590 mg cy-3-glu/g hull powder compared to 2.950 ± 0.265 when using an HCl acidified extraction solvent at 0.20%. This acidified aqueous methanol extraction solvent using lime juice produced an increase of 60.75% anthocyanin which suggests that this natural lime juice can be a good acidifying agent. The quantity of lime juice or HCl added to the extraction solvent was found to be a more important factor than its pH value in influencing TMA yield. A lower particle size of hull powder of 250 μm to 500 μm was also found to give the highest recovery of anthocyanin ($p < 0.05$).

Keyword: *Garcinia mangostana* L.; Extraction; *Citrus aurantifolia* Swingle; Particle size; Total monomeric anthocyanin; Hydrogen bond formation