

Characterization and quantification of dragon fruit (*Hylocereus polyrhizus*) Betacyanin pigments extracted by two procedures

ABSTRACT

A method for the extraction of betacyanins pigments of dragon fruit (*Hylocereus polyrhizus*) grown in Malaysia was studied. A processing scheme consisting of solvent system selection (ethanolic and aqueous ethanolic) was proposed to study the effect of water in enhancing betacyanin recovery from the pulp of *H. polyrhizus* fruit. Betacyanins, in concentrated extracts from the dragon fruit (*H. polyrhizus*), were identified as betanin, phyllocactin, hylocerenin and their respective C-15 isoforms using High-performance liquid chromatographic (HPLC) analysis. Structural alteration was monitored by using selected solvent systems. As for the relative peak area ratios, some betacyanins showed a higher stability than others. Betanin, one of the main betacyanin in selected Malaysian *H. polyrhizus* cultivars, displayed the most stable structure. Comparing the peak area ratios of individual betacyanins, it was noticed that ethanolic assay might induce co-occurring of the C-15 isoforms.

Keyword: Dragon fruit; *Hylocereus polyrhizus*; Betacyanins; Betanin; Phyllocactin; Hylocerenin