

Betalain extraction from *Hylocereus polyrhizus* for natural food coloring purposes.

ABSTRACT

Coloring preparations from *Hylocereus polyrhizus* have recently received attention because peel and/or aril of the fruit exhibit a high content of betacyanins. These pigments are of special interest due to their potential as a red food colorants with a high stability at neutral pH. To improve production yield and to obtain a concentrated *Hylocereus* fruit extract, Pectinex Ultra SP-L in various dosages was applied to degrade the mucilage and make seed removal easier. Analytical methods were used to assess characteristic quality parameters of the treated samples against a control. Colour stability and overall betacyanin retention was assessed to monitor pigment retention. Moreover, individual betacyanin stability for each sample was monitored by comparing peak areas of the respective pigments. Betanin, phyllocactin, hylocerenin, and their respective C15 -isomers were identified as the major betacyanin components in treated samples. Interestingly, these isomers appeared to be indicative of enzymation, while the control showed rather little contents. In addition, betanin and isobetanin presented best stability in all treatments whereas phyllocactin degraded fastest as reflected in lower values for the phyllocactin isomerization index.

Keyword: *Hylocereus polyrhizus*; Betacyanins; Natural red food colorant; Enzymatic treatment; Concentrated extract.