

## **Chemical composition and DSC thermal properties of two species of *Hylocereus cacti* seed oil: *hylocereus undatus* and *Hylocereus polyrhizus*.**

### **ABSTRACT**

Two types of pitaya (*Hylocereus cacti*) seeds (*Hylocereus undatus* and *Hylocereus polyrhizus*) were investigated in this study. The fatty acid, phenolic, tocopherol, and sterol contents of the extracted seed oil were analysed. The results showed that the pitaya seeds contained a high amount of oil (18.33–28.37%). The three major fatty acids in the *H. undatus* seed oil (WFSO) and *H. polyrhizus* seed oil (RFSO) were linoleic, oleic, and palmitic acids. The total tocopherol contents in the WFSO and RFSO were 36.70 and 43.50 mg/100 g, respectively. The phytosterol compounds identified in the WFSO and RFSO were cholesterol, campesterol, stigmasterol, and  $\beta$ -sitosterol. Seven phenolic acid compounds were identified in the WFSO and RFSO, namely, gallic, vanillic, syringic, protocatechuic, p-hydroxybenzoic, p-coumaric, and caffeic acids. WFSO and RFSO can be differentiated by their  $T_{off}$  and  $T_{on}$  values in the DSC thermal curves. This study reveals that pitaya seed oil has a high level of functional lipids and can be used as a new source of essential oil.

**Keyword:** *Hylocereus undatus*; *Hylocereus polyrhizus*; Pitaya seed oil; Thermal properties; Tocopherol; Phytosterol; Phenolic acid.