

## **Physicochemical and thermal properties of durian seed flour from three varieties of durian native of Sabah**

### **ABSTRACT**

This study was aimed at assessing the physicochemical and thermal properties of flour, acquired from the seeds of three native Sabah durian species. The three-durian species concerned are the Dalit, Sukang and Pulu. Flour deriving from the seeds of the dalit (DDSF), sukan (DSSF) and pulu (DPSF) durian species, were put through a physicochemical, pasting and thermal characteristics assessment process. The protein content in flours, derived from the seeds of durian native to Sabah, demonstrated a high capacity for the absorption of both water ( $r = -0.855$ ,  $p < 0.01$ ), and oil ( $r = 0.921$ ,  $p < 0.01$ ). DPSF, which holds the most protein content at 6.92%, demonstrated the lowest water absorption capacity, and greatest oil absorption capacity ( $p < 0.05$ ). Moreover, DPSF was observed to have the lowest swelling power, solubility and peak viscosity ( $p < 0.05$ ). In terms of pasting temperature, no outstanding disparities were detected between the three durian seed flours ( $p > 0.05$ ), but they were considered to have high pasting temperatures. The lowest setback viscosity ( $p < 0.05$ ) displayed by DPSF, is an indication that the following gelatinization, will quickly dissolve. Additionally, the enthalpy  $\Delta H$  of DPSF revealed as 0.29 J/g ( $p < 0.05$ ) is deemed significantly low. This undertaking delves into the physicochemical and thermal characteristics of durian seed flour, to its use as composite flour.