

## **Effect of drying on physicochemical and functional properties of stingless bee honey**

### **ABSTRACT**

The study aimed to evaluate the effect of drying on the functional quality of stingless bee (*Heterotrigona itama*) honey. The honey was subjected to vacuum drying (40–60°C), vacuum evaporation (40–60°C), and freeze drying, respectively, to achieve a standardized moisture content. The dehydrated honey seemed to have a significant ( $p < .05$ ) darker color (lower  $L^*$  and higher  $b^*$  values) as compared to the raw honey. Results suggested that the dryness of the dehydrated honey has significantly affected its antioxidant capacity except oxygen radical absorbance capacity (ORAC) assay. It seems vacuum drying at 60°C for 2.2 hr produced honey with higher total phenolic ( $300.24 \pm 6.81$  mg GAE/kg) and flavonoid contents ( $273.83 \pm 2.52$  mg QE/kg), which were also characterized by the highest 2,2-azinobis-(3-ethylbenzothiazoline-6-sulphonate) (ABTS) ( $371.34 \pm 2.57$   $\mu$ mol TE/100 g) and ferric reducing antioxidant power (FRAP) ( $344.20 \pm 6.81$   $\mu$ mol Fe<sup>2+</sup>/100 g). Rosmarinic acid and quercetin are the most dominant phenolic compounds found in the dehydrated honey. In conclusion, vacuum drying could be an efficient way to improve honey physicochemical and functional stability.