

## **Effect of extraction conditions of *Carica papaya* leaves aqueous extracts and its resulting infusion with “kelulut” honey to its antioxidant activity**

### **ABSTRACT**

*Carica papaya* is a tropical plant belonging to the Caricaceae family. Rich in phytochemical content, its leaves especially are renowned for having many health benefits, namely anticancer properties and as supplement in treating dengue disease. This study thus aimed to optimise aqueous extraction and to determine the effect of honey infusion on the leaves extract which was analysed using TPC, TFC, FRAP and DPPH assays respectively. The optimal extraction conditions for aqueous extraction were determined to be at 70°C for 20 minutes where its TPC was  $9.97 \pm 0.47$  mg GAE/mL ( $p < 0.05$ ), TFC was totaled at  $2.63 \pm 0.52$  mg QUE/mL ( $p < 0.05$ ) while its FRAP assay was amounted at  $16.84 \pm 1.10$  mg TE/mL. Radical scavenging values using DPPH assay was recorded to be at 87.53% with its IC50 at  $492.54 \pm 2.45$  mg TE/mL ( $p < 0.05$ ). Study on the infusion of “kelulut” honey from *Trigona* species with the leaves extract provides evidence that not only does it improve the taste of the bitter papaya extract; the positive synergy also increases the overall antioxidant activity. Antioxidant values are found to increase in accordance with increasing honey dosage (max 4 tbsp.), where its TPC was valued at  $21.66 \pm 0.54$  mg GAE/mL ( $p < 0.05$ ), FRAP test at  $24.02 \pm 0.87$  mg TE/mL ( $p < 0.05$ ), radical scavenging activity at 98.2% and lower IC50 value at  $408.02 \pm 5.0$  mg TE/mL. Future study can therefore be done to improve and perhaps release the product commercially.