

**UNIVERSITI TEKNOLOGI MARA**

**PHYTOCHEMICAL AND  
ANTIOXIDANT PROPERTIES OF  
GELAM AND NENAS HONEY**

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Project submitted in fulfillment of the requirements for  
the degree of  
**Bachelor in Medical Laboratory Technology  
(Hons.)**

**Faculty of Health Sciences**

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## DECLARATION BY STUDENT

Project entitled “Phytochemical and Antioxidant Properties of Gelam and Nenas Honey” is a presentation of my original research work. Whenever contributions of others are involved, every effort is made to indicate this clearly, with due reference to literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Project Supervisor, Mr. Norhisham Haron. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Medical Laboratory Technology (Hons).

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*In the name of Allah, The Most Gracious, The Most Merciful*

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## ABSTRACT

Gelam and Nenas honey are Malaysian wild monofloral honeys and were named according to their floral sources. Both honeys had been reported to have therapeutic properties and beneficial effects to human health. The information on the phytochemical and antioxidant properties of Gelam and Nenas honey with its potential use as a natural antioxidant agent or supplement are still scarce. Hence, the present study was aimed to investigate the phytochemical and antioxidant properties of Gelam and Nenas honey. Total phenolic and flavonoid content of selected honeys were determined spectrophotometrically. The antioxidant properties were measured using 2, 2-diphenyl-1-picrylhydrazyl (DPPH) and ferric reducing power (FRAP) assays. The total phenolic content of Gelam honey was  $21.162 \pm 0.0296$  mg GAE/kg while Nenas honey was  $28.767 \pm 0.0553$  mg GAE/kg. The flavonoid content of Gelam honey was  $2.911 \pm 0.0003$  mg QE/kg while Nenas honey was  $2.897 \pm 0.0017$  mg QE/kg. Gelam and Nenas honey were able to scavenge DPPH with the  $IC_{50} = 1.352 \pm 0.011$  mg/mL and  $3.261 \pm 0.012$  mg/mL, respectively. The reducing power value of Gelam and Nenas honey were  $0.27 \pm 0.035$  mg/mL and  $0.39 \pm 0.014$  mg/mL, respectively. In conclusion, the presence of phytochemical compounds in Gelam and Nenas honey may contribute to their antioxidant activities that could be very useful as a source of antioxidants.

Keywords: *Honey, gelam, nenas, phytochemical, antioxidant*