

**PHYTOCHEMICAL SCREENING AND
ANTIBACTERIAL ACTIVITY OF LOCAL SABAH
HONEY IN COMPARISON TO NON-LOCAL
HONEY AGAINST *Staphylococcus aureus*
AND *Pseudomonas aeruginosa***

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ABSTRACT

PHYTOCHEMICAL SCREENING AND ANTIBACTERIAL ACTIVITY OF LOCAL SABAH HONEY IN COMPARISON TO NON-LOCAL HONEY AGAINST *Staphylococcus aureus* AND *Pseudomonas aeruginosa*

Honey is a by-product of flower nectar and the upper aero-digestive tract of the honey bee, which is concentrated through a dehydration process inside the bee hive. It has been used both as food and medicine since ancient times. Seven types of honeys were studied to determine their phytochemical constituents and antibacterial activity against *S. aureus* (ATCC 4330) and *P. aeruginosa* (ATCC 10145). Five of the honey samples were local honey and two were non-local honey samples. Local honeys included farmed honey, 'kelulut' honey and wild honey from Gombizau Village. Two local honeys were obtained from Korporasi Pembangunan Desa (KPD) Store which are tropical honey and wild honey. Two non-local honeys are obtained from Makkah namely Khaula honey and Makkah honey. Qualitative analysis were conducted to test the presence of phytochemical constituents in honey. Antibacterial activity was determined by using well diffusion method. Phytochemical screening showed the presence of six constituents in all honey namely terpenoid, alkaloid, steroid, carbohydrate, reducing sugar and pentose, while cardiac glycoside was detected only in one of non-local honey (Makkah honey). Well diffusion showed no inhibition zone formed against *S. aureus* (ATCC 4330) and *P. aeruginosa* (ATCC 10145). This indicated that there is no antibacterial activity present in all honeys. As a conclusion, phytochemical constituent found in all honey are terpenoid, alkaloid, steroid, carbohydrate, reducing sugar and pentose while cardiac glycoside was found only in one of non-local honey (Makkah honey). Although qualitative analysis indicated the presence of antibacterial constituent, all honeys showed no inhibition zone against *S. aureus* (ATCC 4330) and *P. aeruginosa* (ATCC 10145). However, 'kelulut' honey in raw form showed potential antibacterial activity. This indicated that there is a potential in bioactivity of 'kelulut' honey where further analysis is required. Quantitative analysis on phytochemical constituents and determination of optimum concentration of honey for antibacterial activity could be carried out further. Besides, more systematic studies could be conducted to determine the effect of different plant species, geographical location and other related factors on honey's phytochemical constituents and antibacterial activity. This would contribute in better understanding and improve the possibilities to produce honey with better medicinal value.