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## Antibacterial properties of Kelulut, Tualang and Acacia honey against fourteen clinically-isolated strains of bacteria-infecting wound (Conference Paper)

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### Abstract

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Bacterial infection is the most common cause of prolonged wound healing period. Honey has been known as an effective antibacterial agent due to its peroxide and non-peroxide activities to prevent bacterial infection. This study aims to investigate antibacterial property of three varieties of Malaysian honey represented by two multifloral; Kelulut and Tualang, and one monofloral; Acacia against fourteen isolated bacteria from wounds of three patients. Agar well diffusion assay was used to screen the antibacterial property of these honey. Minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) were performed for antibacterial evaluation at a concentration range of 60% (w/v) to 5% (w/v). This method was utilised to analyse the total and non-peroxide activities of the honey against all clinically isolated bacterial strains. The initial screening has demonstrated Kelulut as a strong antibacterial agent than Tualang and Acacia which was comparable to medical-grade Manuka (UMF 18+). The MICs for Kelulut, Tualang, and Acacia were observed to range from 5% (w/v) to 12.5% (w/v), 12.5% (w/v) to 30% (w/v), and 25% (w/v) to 50% (w/v) respectively, while the range was between 5% (w/v) and 15% (w/v) for Manuka. The difference for peroxide and non-peroxide activities recorded were statistically significant ( $p < 0.05$ ) for Kelulut, Tualang, and Manuka, excluding Acacia. Malaysian honey do possess antibacterial property against clinically isolated bacteria from wound in which Kelulut honey was identified to have a close similarity to the medical-grade Manuka. Based on our results, Kelulut has shown the strongest antibacterial activity and can be considered as one of the alternative treatments to reduce the healing period of infected wound. © 2020 Author(s).

### SciVal Topic Prominence ⓘ

Topic: Manuka Honey | Leptospermum Scoparium | Stingless Bees

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### Author keywords

Antibacterial agent Honey Non-peroxide activity Peroxide

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