

**EXTRACTION OF ANTIMICROBIAL
COMPOUND(S) FROM GELAM
COMB HONEY AND
MULTIFLORAL
COMB HONEY**

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ABSTRACT

Comb honey is the honey that present in its original comb. Honey is mainly sold on the basis of its therapeutic properties contributed by its antibacterial agents. The objective of this study was to investigate the antimicrobial agents of ethanolic and ethyl acetate extracts of the gelam comb honey and multifloral comb honey at different concentration by using well diffusion method. Four Gram positive (*B. cereus*, *B. subtilis*, *S. aureus*, *S. epidermidis*) and four Gram negative bacteria (*E. coli*, *P. aeruginosa*, *S. typhi*, *S. maeescens*) were used. The comb honeys were extracted using 40mL of ethanol or ethyl acetate at three different concentrations ranging from 80% to 100% and at the maceration time of 24 and 48 hours. At maceration time of 48 hours, ethyl acetate extracts of gelam comb honey at 90% concentration and ethanolic extracts at 100% concentration exhibit largest inhibition zone against *P. aeruginosa* at 12.3 ± 0.6 mm and 12.7 ± 0.6 mm respectively. Whereas the 90% concentration of ethanolic extracts and ethyl acetate extracts of multifloral comb honey at 48 hours showed highest antimicrobial activity against *B. cereus* at 11.3 ± 0.6 mm and 15.0 ± 1.0 respectively. Collectively, the best maceration time and concentration was 48 hours and 90% concentration. The different solvent, solvent concentration and maceration time also will influence the extraction of active compound(s) from the comb honey. The variation of antimicrobial activity of both comb honey might be related to the different floral sources, geographical factors and the active compound(s) present in the comb honey. Further studies can be done on recovering most of the antimicrobial compounds through combination of liquid-liquid extraction and solid phase extraction technique. The causative agents which involved in the antimicrobial activity of comb honey needed to be clarified through phytochemical analysis.

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