



A COMPARATIVE STUDY ON *In vitro* ANTIMICROBIAL POTENTIAL OF DIFFERENT PARTS OF THE MEDICINAL PLANT, *WATTAKAKA VOLUBILIS* (L.F.) STAPF

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ABSTRACT

The medicinal plant *Wattakaka volubilis* has been used as a folk medicine for the treatment of fissures in the feet and rheumatic pain. The traditional medicinal practitioners have been prepared ointments by using various parts of the plant to treat wounds, tinea pedis, scabies and plantar psoriasis. The current study was designed to compare the anti-bacterial potential of different parts of the plant against *Escherichia coli* (ATCC 25922) and *Staphylococcus aureus* (ATCC 25923). The dried plant materials were extracted in distilled water and absolute methanol by cold maceration. Agar well diffusion method and the macro-broth dilution assay were performed to determine the antibacterial potential of each extract. Gentamycin was used as the positive control, while the respective solvent used as the negative control. The zone of inhibition of each extract was compared with positive and negative controls. The minimum inhibitory concentration (MIC) was used to confirm the results obtained by agar diffusion method. Among the various parts of the plant, the highest zone of inhibition was shown by methanolic flower extract. Comparatively, flower extracts exerted a higher inhibition against *S. aureus* than *E. coli*, while all the other test extracts showed a higher inhibition against *E. coli* than *S. aureus*. The MIC against *S. aureus* for methanolic flower extract was 125 mg/ml, while the value against *E. coli* was 250 mg/ml. The aqueous flower extract showed 125 mg/ml value against *S. aureus* and 500 mg/ml against *E. coli*. The observed MIC value against *S. aureus* for all the other test extracts was higher than the value against *E. coli*. The results of the current study suggest further studies on the flower extract may lead to discovery of novel anti-bacterial agents active against more virulent pathogenic strains of *S. aureus*.

Keywords: antibacterial potential, *Wattakaka volubilis*, folk medicine, agar well diffusion