

Phytochemical Screening and Antimicrobial Activity of Microglossa Pyrifolia Lam Kuntze Plant Extracts on Escherichia coli, Candida albicans and Staphylococcus aureus

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Abstract

Microglossa pyrifolia is a plant in the family Asteraceae which consists of many medicinal plants. It has been used globally for traditional medicine, in Africa it is used by many communities as a cure for varied diseases. In Bungoma Kenya the leaves are dried then burnt and the resulting concoction used in treating the circumcision wound. Studies on it have focussed on its antiparasitic properties though its antimicrobial activity has not been investigated. The objectives of this study were to: investigate the antimicrobial properties of *M. pyrifolia* extracts, determine the concentration that is most effective and to identify the phytochemicals present in the plant. The leaves of the plant were collected from Kamusinga village in Bungoma, they were dried under the shade then crushed to obtain fine powder which was then used to obtain the crude plant extracts using Soxhlet apparatus with water and methanol as solvents. The extracts were then constituted to 10%, 7.5%, 5% and 2.5%. A control experiment was done using distilled water. The extracts were subjected to qualitative test for the identification of various phytochemical constituents. The antimicrobial assay was performed by agar well and disc diffusion methods. Treatments were replicated thrice and the plates examined for zones of inhibition. Terpenoids, saponins, alkaloids, flavonoids and steroids were the major phytochemical groups detected. There was a significant difference in the effect of the concentration ($p < 0.05$) to the inhibition zone for the three microorganisms at 7.5% indicating that this was the optimal concentration for use. The activity of the extracts on the microorganisms was significantly different at $p < 0.05$ for *S. aureus* and *E. coli* at concentrations of 0% and 10% however *C. albicans* was significantly different from the rest at $p < 0.05$. This study reveals that this plant contains bioactive constituents and its use in the treatment of wounds should be investigated further for sustainable use and for posterity.

Key words: *Traditional medicine, phytochemical analysis, antimicrobial activity.*