SCREENING FOR ANTIMICROBIAL ACTIVITY OF SIX SELECTED MEDICINAL PLANTS AGAINST THREE ECONOMICALLY IMPORTANT MICROORGANISMS

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Plants are good sources of phytomedicines. This study investigates the antimicrobial activity of six medicinal plants; *Eclipta alba, Acalypha indica, Brassica juncea, Piper longum, Nigella sativa and Phyllanthus debilis* against *Escherichia coli* and two fungal species: *Aspergillus niger* and *A. flavus*. In the study, leaves, seeds and fruit samples and the whole plant were collected from natural environments and traditional medical shops, washed, air-dried and milled. The study samples were extracted using three solvents namely water, ethanol and methanol with the ratio of 1:5. Portions of the crude extracts were screened against the above microbes by the disc diffusion method using Muller-Hinton agar medium. The antibiotic Chloramphenicol was used as a positive control. Inoculated plates of *E.coli* and fungi were incubated for 24 hrs-48 hrs at 37˚C and room temperature respectively.

An ANOVA carried out revealed that a three-way interaction between the type of microorganism used to the antimicrobial assay, extraction methods employed and the medicinal plant species considered in this study was found to be significant at the p-value of 0.05. The highest antimicrobial activities of water, ethanol and methanol extract against *E. coli* measured in terms of inhibition zone formation were shown by *P. longum* (13.83 mm), *E. alba* (19.83 mm) and *P. debilis* (10.5 mm), respectively. However, the highest inhibition zone formation shown by water extract of *Piper longum* was not significantly different from that of *P. debilis*. A promising antimicrobial activity against *A. niger* with the mean value of 22.17 mm was exhibited by water extract of *E. alba*. Water and methanol extract of *A. indica* revealed to be significantly inhibiting the growth of *A. flavus* compared to other medicinal plants . Although the inhibition of *A. niger* by methanol extracts of all six plants was not different significantly (P=0.05). It was concluded that extracts of all six medicinal plants considered in this study controlled all three microorganisms with different levels of antimicrobial activities.

Keywords: Medicinal plants, antimicrobial activity, *Escherichia coli*, *Aspergillus niger* and *Aspergillus flavus*