Abstract

Different plant parts (leaves, stem and fruits) of *Heterophragma adenophyllum, Vallaris solanacea* and *Cirsium arvense* belonging to family Bignoniaceae, Apocynaceae and Asteraceae/Compositae respectively extracted in polar and non-polar solvents were evaluated for their phytochemical screening, antimicrobial, antioxidant and anthelmintic activity. The phytochemical screening of plants extracts in polar and non polar solvents showed the presence of Terpenoids, Glycosides, Flavonoids, Tannins, Steroids, Alkaloids and Reducing sugars in almost all the extracts of the investigated plants. Antimicrobial activity was tested against two Gram positive bacteria (*Bacillus subtilis, Staphylococcus aureus)*, two Gram negative bacteria (*Escherichia coli, Pseudomonas aeruginosa)* and two fungal strains (*Aspergillus niger, Fusarium solani).* Leaves, stem and fruits extracts of all plants showed different degree of antimicrobial activity. Water extracts *of Heterophragma adenophyllum* proved more resistant to Gram -ve bacteria while water extracts of *Vallaris solanacea* showed remarkable inhibitory effect against all bacterial strains. *Cirsium arvense* displayed the maximum inhibition zones against all bacterial strains. Hexane, Ethanol and water extracts of *C.arvense* were found more resistant to both the tested fungi. However, other extracts also displayed the significant zones of inhibition against the fungi. The results thus obtained were compared with those of the standard antimicrobial agents. Antioxidant potential of all the plants extracts was studied using seven different antioxidant assays,such as Metal Chelating assay, ABTS, Ferric Reducing Antioxidant Power (FRAP),Superoxide radical scavenging activity,Total Flavanoid Contents,Total phenolic contents and 2,2- Diphenyl 1-Picryl Hydrazine (DPPH) Assay. Among all the investigated plants *H.adenophyllum* and *V.solanacea* were the best metal chelaters, in terms of ABTS assay *H.adenophyllum* exhibited the best TEAC value, maximum FRAP value was obtained in *V.solanacea.* All extracts of *Cirsium arvense* proved the good scavengers of superoxide radical. *C.arvense* and *H.adenophyllum* displayed the best and almost similar results. Best flavonoids contents were obtained in *H.adenophyllum* while the highest phenolic contents were analysed in *V.solanacea.* Higher DPPH scavenging power was observed in *H.adenophyllum.* **Anthelmintic** experimentation results indicated the excellent vermicidal activity by all the plants extracts and found to be anthelmintic against *Haemonchus contortus.*