

ABSTRACT

The present study aimed to investigate the ethnopharmacological potential of crude extracts of all parts of *Verbena tenuisecta* Briq. and *Polygonum plebeium* R.Br., in terms of their phytochemical analysis, antimicrobial activity, antioxidant assay and anthelmintic activity. The crude extracts were obtained by using maceration technique in solvents of different polarities, e.g. *n*-hexane and chloroform as non-polar and methanol and water as polar solvents. The highest %age yield was obtained from the chloroform extract of flower of *V. tenuisecta* Briq, i.e. 24.21%, while 19.41% was found to be maximum in the *n*-hexane extract of flower of *Polygonum plebeium* R.Br. The qualitative phytochemical analysis of *V. tenuisecta* Briq. and *P. Plebeium* executed that all the crude extracts possessed a significant range of phytochemicals, i.e. Alkaloids, flavonoids, reducing sugars, tanins, saponins, phenols, terpenoids and cardiac glycosides. In antimicrobial appraisal the maximum zone of inhibition was measured for the ethanol extract of flower of *V. tenuisecta* Briq. against *Staphylococcus aureus*, i.e. 72 ± 0.5 mm, while in the case of *P. plebeium* R.Br. the maximum potential was exhibited by the ethanol extract of flower, i.e. 43 ± 0.03 mm against *Escherichia coli*. The antimycotic evaluation documented that both the fungal strains, i.e. *Aspergillus niger* and *Aspergillus oryzae* were uniformly susceptible to all the crude extracts of *V. tenuisecta* Briq. The *n*-hexane extract of flower of *P. plebeium* had the maximum activity against *Aspergillus oryzae*, i.e. 38 ± 0.00 mm. The MIC evaluation supported the results of zone of inhibition. The growth of microbes was inhibited in the range of 5mg/ml to 1.25mg/ml plant extract concentration. The antioxidant inquisition revealed that leaf macerates of *V. tenuisecta* Briq. were found to be potent for their TPC, TFC and DPPH activity. The stem macerates were persuasive for ABTS assay, while the flower macerates displayed best % bound iron. Among all the crude extracts of *P. plebeium* R.Br. leaf macerates showed significant presence of TFC and DPPH activity, root macerates possessed the high content of TPC, whereas flower extracts exhibited the good potential for TEAC value. Both the leaf and flower macerates showed the moderate %age bound iron. The anthelmintic activity against *Haemonchus contortus* exhibited significant by leaf extracts of *V. tenuisecta* Briq. and *P. plebeium* R.Br as compared to the standard anthelmintic agent, oxfendazole.