Abstract

The present work deals with the ethnoecological studies on the herbaceous flora of Sahiwal Division with special reference to the documentation of ethnobotanical data, phytosociological notes and ethnopharmacological testing of ethnomedicinally important herbs including their antimicrobial, antioxidant and anthelmintic potential. The local people, herbal healer/ hakims were interviewed through questionnaire to collect and document the ethnobotanical data on the local herbaceous plants. In total, 180 herbal plant species, 177 belonging to 43 angiospermic, one species to one gymnospermic and two to pteridophytic families, were found in common use by the local inhabitants as forage / fodder, medicinal, food, feed and various other uses. The crude extracts of five ethnomedicinally important plants were obtained in polar and non-polar solvents (Water, methanol, chloroform and n-hexane) by maceration method. The % age yield was found maximum in *Cuscuta campestris* distilled water extract and minimum in *Aerva javanica* n-hexane extract. The antimicrobial activity tested by agar well diffusion method indicated strongest antibacterial and antifungal activity by *Persicaria glabra* against *Psedumonas aeruginosa* and *Aspergillus niger,* respectively. The antioxidant activity was found quite convincing when revealed through six different assays. The highest antioxidant activity was shown by *Cistanche tubulosa* as revealed by $ABTS^{+}$ Assay, TPC determination, TFC determination and Total antioxidant activity. The highest anthelmintic activity was shown by *Cistanche tubulosa* while least by *Polygonum glabra.* Vegetation of the study area was sufficient only for documentation, but insufficient for any economic purpose, yet some plants had shown very important phytosociological attributes. There was no much change in the soil parameters, yet ecological parameters like frequency, distribution and community structure were changing district wise. The TWINSPAN analysis of the vegetation of the study area divided it in to 3 groups and 12 associations, consisting of 159 plant species, in 222 quadrats.