

ABSTRACT

The present research work was carried out to investigate the anatomical, phytochemical and antioxidant studies of some ethnoveterinary grasses from different zones of district Hafizabad. Total four species were collected from Different villages of Hafizabad in the months of May and June 2021. The collected species were identified as Cenchrus setigerus Vahl, Diplachne fusca (L.) P. Beauv., Imperata cylindrica (L.) Raeuschel and Sporobolus coromendelianus Kunth. For anatomical studies, the stem and leaves were cut into thin sections by free hand section cutting techniques. The anatomical characters observed were compact epidermal layer, large cortical cells, thickened sclerenchyma, central and scattered vascular bundles, large metaxylem, small protoxylem, pitted phloem and centrally located pith.

In order to examine the phytochemical and antioxidant potential, the crude methanol extract by maceration techniques was prepared and subjected to fractionation with n-hexane, petroleum ether, chloroform and water. Diplachne fusca showed strong scavenging activity i.e. 75.87 ± 0.14 in the methanol extract of DPPH at a concentration of $250 \mu\text{L}$. The total antioxidant activity evaluated by phosphomolybdenum activity showed best results in methanol fraction of Diplachne fusca. At a concentration of $125 \mu\text{L}$, the methanol extract displayed maximum reduction potential i.e., 1.20 ± 0.06 . The methanol extracts of all the grasses exhibited maximum ferric reducing antioxidant power except Imperata cylindrica that showed maximum power i.e., 1.77 ± 0.054 TE $\mu\text{M}/\text{ml}$ in chloroform extracts. The maximum TPC value was shown by methanol extract of Imperata cylindrica 118.32 ± 1.27 (GAE) mg/ml. This study provides experimental evidence that these grasses when consumed can be used as natural antioxidants and can be used to combat various diseases which are caused due to reactive oxygen species.