


Abstract

In the present research work anatomical characters of the stem and leaf of the four species of grasses were studied through light microscopy. The species which were selected are *Dicanthium annulatum* Stapf, *Cynodon dactylon* Rich, *Setaria verticillata* Beauv. and *Cenchrus pennisetiformis* Hochst. The anatomical characters observed were compact epidermal layer, large cortical cells, thickened sclerenchyma, central and scattered vascular bundles, large metaxylem, small protoxylem and centrally located pith.

The antioxidant potential of the grasses was determined using DPPH, TAA, TPC and FRAP assays. *Cynodon dactylon* Rich. showed strong scavenging activity i.e 69.49 ± 0.10 in the chloroform extract of DPPH at a concentration of $250 \mu\text{L}$ while in TAA the maximum antioxidant potency was shown by chloroform extract i.e 1.12 ± 0.0023 at concentration of $500 \mu\text{L}$. FRAP assay showed higher value 1.005 ± 0.0008 in methanol extract while chloroform extract in TPC exhibited higher value 104.27 ± 0.13 . The strong scavenging activity using DPPH was shown by the chloroform extract i.e 76.33 ± 0.12 at a concentration of $250 \mu\text{L}$ in *Cenchrus pennisetiformis* Hochst. while in TAA chloroform extract showed maximum antioxidant potency as 1.15 ± 0.0018 at a concentration of $500 \mu\text{L}$. The chloroform extract in both FRAP and TPC showed significant values i.e 1.32 ± 0.0018 and 78.36 ± 0.020 respectively.

Setaria verticillata Beauv. showed strong scavenging activity in methanol extract 55.4 ± 0.15 at a concentration of $250 \mu\text{L}$ while maximum antioxidant potential was shown by n-hexane i.e 1.18 ± 0.0012 at a concentration of $500 \mu\text{L}$. Chloroform extract of both FRAP and TPC showed higher values i.e 1.32 ± 0.0011 and 36.66 ± 0.0173 respectively. The strong scavenging activity in *Dicanthium annulatum* Stapf. was shown by the methanol extract i.e 68.47 ± 0.30 at a concentration of $250 \mu\text{L}$ while chloroform extract in TAA showed maximum antioxidant potential 1.05 ± 0.0017 at a concentration of $500 \mu\text{L}$. FRAP assay showed higher value in chloroform extract i.e 1.62 ± 0.0017 while in TPC methanol extract exhibited higher value 73.15 ± 0.020 respectively.

Hence, the rich source of natural antioxidants is found in these grasses that can be considered helpful as a fodder grass and for the treatment of various ailments of different animals.  (Ctrl) ▾