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Identification of flavonoids of Wheatgrass (*Triticum aestivum* L.) at various stages of growth and evaluation of their Antioxidant Activity

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Abstract

Wheatgrass are 6-10 days young plantlet of wheat (*Triticum aestivum* L.). Ethopharmacologically, the wheatgrass is recognized for its anti-aging and other health promoting properties. This study was aimed at identifying the phytochemical composition of wheatgrass (var. Chinese Spring) and evaluating its antioxidant potentials at different stages of growth (5^{th}, 7^{th}, 9^{th}, 11^{th}, 13^{th}, 15^{th} day). Phytochemical components were extracted with methanol and total phenolic contents (TPC) and total flavonoid contents (TFC) of the extracts were evaluated. DPPH (1,1'- diphenyl-2-picrylhydrazyl), bleaching of β-carotene and metal chelating activity was used to assess the antioxidant activity of the extract and further correlated with TPC and TFC. Based on comparison of IC_{50} data, DPPH radical scavenging activity of the extract was found to be best at 7^{th} day of the growth and equivalent to standard gallic acid. The extract exhibited excellent metal chelating activity and β-carotene bleaching property on 9^{th} day of growth and the IC_{50} corresponded with standard ascorbic acid and butylated hydroxytoluene (BHT), respectively. Preliminary screening with thin layer chromatography identified the probable flavonoids which could be quercetin, rutin or myricetin and their glcycosides. Significant correlation between antioxidant activity with TPC and TFC ascertained that phenolics and flavonoids were the major contributors of antioxidant activity.

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