dbandupriya@yahoo.com Tel: +94 31 2262003/ +94 77 1571052
202/B

Antioxidant capacity, phenolic and flavonoid contents of parts of *Ocimum sanctum* L. grown under different growing systems and maturity stages

K Abeywardhana[1], D C Abeysinghe[1] and R M Dharmadasa[2*]
[1]*Department of Plantation Management, Faculty of Agriculture and Plantation Management, Wayamba University of Sri Lanka, Makandura, Gonawila*
[2]*Industrial Technology Institute, 363, Baudhaloka Mawatha, Colombo 07*

The medicinal plant *Ocimum sanctum* L. (Family Laminaceae) commonly known as Maduruthala is widely used in traditional systems of medicine for its diverse medicinal properties. The present study attempted to determine the total phenolic content (TPC), total flavonod content (TFC) and total antioxidant capacity (TAC) of methanolic extracts of leaf and bark of *O. sanctum* immediately before flowering, immediately after flowering and at fully matured stage, grown under field planting and in a hydroponic system. Ferric Reducing Antioxidant Power (FRAP) assay was used to determine the TAC. The TPC and TFC were determined by colorimetric Folin-ciocalteu and aluminum nitrate methods respectively. Leaves of field grown *Ocimum sanctum* at full maturity had the highest total phenolic content (8.34 ± 0.14 mg GAE /g DW), total flavonoid content (132.29 ± 1.45 mg RE /g DW) and total antioxidant capacity (120.02 ± 4.06 mg TE /g DW). Total phenolic content, total flavonoid content and total antioxidant capacity of leaf and bark extracts of field grown as well as hydroponically grown plants increased with maturity as, immediately before flowering < immediately after flowering < full maturity stage. Moreover, in the bark of hydroponically grown plants at all maturity stages, total antioxidant capacity, total phenolic and total flavonoid contents were higher than those in leaves. The highest total antioxidant capacity and total flavonoid content were recorded in leaves in field grown plants at all growth stages when compared to the bark. However, total phenolic contents were higher in bark of field grown plants, at immediately before flowering and immediately after flowering whereas total phenolic content of leaves in field grown plants at full maturity was higher than bark. The present study demonstrated the distribution of total phenolic content, total flavonoid content and total antioxidant capacity of leaf and bark extracts of field grown and hydroponically grown *O. sanctum* for the first time in Sri Lanka. Presence of higher contents of TPC, TFC and TAC in the full maturity stage clearly validate the traditional claims of harvesting of *O. sanctum* at fully maturity stage.