Abstract No: BP-19 **Biological Sciences**

Evaluation of nutrient and fiber content of selected invasive plants in Sri Lanka with a potential for preparing compost

N. Hewavitharana*, B. T. S. D. P. Kannangara, L. R. Jayasekera and S. P. Senanayake

Department of Botany, Faculty of Science, University of Kelaniya, Sri Lanka
nalakahewavitharana@gmail.com

Based on availability, the amount of above ground bio-mass and the degree of use as compost in traditional farming systems *Tithonia diversifolia, Chromolaena odorata, Mikania scandens, Lantana camara, Wedelia trilobata, Mimosa pigra and Panicum maximum* were selected for nutrient analysis, with an attempt to investigate their potential to be utilized in preparation of cost effective, organic potting medium for cultivation of selected vegetables and ornamental plants. According to the preliminary surveys, Anuradhapura, Madawachchiya, Kandy, Gampaha, Kalutara and Kurunegala areas were selected for sample collection. Leaves and immature stem parts of the selected plants were analyzed by two samples per one location with three replicates. The total N, P and K contents were determined by Kjeldahl, vanadomolybdate and flame photometric methods respectively. Atomic absorption spectrophotometry was used for quantitative analysis of Mg, Ca, Cu Zn, and Fe. Crude fiber content was determined gravimetrically after chemical digestion and solubilization of the materials. Results obtained were statistically analyzed using SPSS statistics-22 software. The nutrient contents of *T. diversifolia*; N (3.28%), P (0.37%), K (2.50%), Mg (0.83%), Ca (4.92%), Cu (10 mg/kg), Zn (517 mg/kg) Fe (296 mg/kg) and *M. scandens*; N (3.44%), P (0.35%), K (3.30%) Mg (1.33%), Ca (3.39%), Cu (34 mg/kg), Zn (671 mg/kg), Fe (393 mg/kg) were significantly higher than that of other selected weeds. However, they showed significantly lower crude fiber contents 4.85% and 3.50% respectively. Although the nutrient content in *P. maximum* was significantly low N (1.27%), P (0.24%), K (1.44%) Mg (0.5%), Ca (1.55%), Cu (9 mg/kg), (Zn 181 mg/kg), Fe (267 mg/kg) and its crude fiber content (20.42%) was significantly higher than that of others. It can be concluded, T. *diversifolia* and *M. scandens* as plant materials which have higher amounts of nutrients. *P.maximum* which has higher content of crude fiber also can be incorporated in preparing compost in order to improve the physical properties of the potting medium.

Keywords: Nutrient, Crude fiber, Invasive plants, Potting medium

***Acknowledgments*:** *The Horticultural Research and Development Institute* (*HORDI*) *in Gannoruwa and CIC Agri laboratory in Dambulla gratefully acknowledged for providing necessary research facilities*.