

**PHYTOEXTRACTION OF NUTRIENTS AND HEAVY METALS BY  
THE MONOCOT PLANTS IN THAULLA AREA OF ULANKULAMA  
TANK, ANURADHAPURA, SRI LANKA**

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*Thaulla* is the upper peripheral region of small tanks in the dry zone of Sri Lanka. This study aimed to investigate the phytoextraction behavior of monocot plants in *thaulla* area of Ulankulama tank located in Anuradhapura. *Atora* (*Panicum repens*) and *Thunessa* (*Cyperus iria*) were selected as those were abundance in *thaulla* area. The accumulation of total N, P, K, Ca, Mg, Cd, Pb and As were assessed by getting both plant and soil samples from 20 sampling points in *thaulla* area. Another seven samples both plant and soil from adjacent areas of the *thaulla* were taken as reference samples and nutrient and heavy metal values of *thaulla* area were compared with those of reference using two sample t- test. Standard analytical methods were followed for all the analysis. The results indicated significantly ( $p < 0.05$ ) higher shoot and root nitrogen content of plant samples obtained from *thaulla* area when compared to those of reference plant. P, K and Cd content in both shoot and root in plant samples taken from *thaulla* area showed non-significant higher values than those of reference plants. However, K, Ca, Mg and Pb concentration of soil samples were significantly higher ( $p < 0.05$ ) in *thaulla* than those of reference soil samples. According to the ratio of Shoot : Root, the study showed higher accumulation of both nutrient and heavy metals in shoot than those of roots and this ratio was higher in *thaulla* area plants than those of reference plants. This is further confirmed by the higher ratio of Shoot : Soil than the ratio of Root : Soil for both nutrients and heavy metals. Overall, this study showed the higher nutrient and heavy metal accumulation in *thaulla* soil and higher extraction of nutrients and heavy metals by the selected monocot plants in *thaulla* area than those of same plants in adjacent reference area.

**Keywords:** Heavy metals, Nutrients, Phytoextraction, *Thaulla*, Small tank