

## **Nutrient-use efficiency of epiphytes, hemi-parasites and their hosts**

**L.D.B. Suriyagoda<sup>1\*</sup>, R.H.G. Ranil<sup>1</sup>, D.K.N.G. Pushpakumara<sup>1</sup> and H. Lambers<sup>2</sup>**

<sup>1</sup>*Department of Crop Science, Faculty of Agriculture, University of Peradeniya, Sri Lanka, School of Plant Biology,* <sup>2</sup>*The University of Western Australia, Perth, Australia*

\* *laliths@pdn.ac.lk*

Epiphytic and hemi-parasitic species are a major constituent in tropical forest ecosystems and influence nutrient cycling. However, internal use efficiency of nutrients such as, nitrogen (N), phosphorus (P), potassium (K), calcium (Ca) and sodium (Na) of the host species, and epiphytic and hemi-parasitic species inhabited on those host species in Sri Lanka is not well understood. Therefore, this study was conducted using the senesced and green leaf samples collected from the host, epiphytic and hemi-parasitic species. There were twenty three epiphytic species, eight hemi-parasitic species and their hosts collected from selected natural forests in Nuwara-eliya, Peradeniya, Ratnapura and Matale regions. Leaf samples were taken to the laboratory for nutrient concentration, leaf area, and dry weight determinations. Differences in nutrient concentrations among plant types were tested using ANOVA procedure. Relationships between the nutrients and plant types were studied using regression and correlation analyses. Nitrogen, Ca and Na concentrations of the host species were positively correlated with those of hemi-parasites while for epiphytes such relationships were not observed. Nutrients were resorbed from senescing leaves with the highest N resorption percentage observed from the host species while the highest K, P, Ca and Na resorption occurred from the senescing epiphyte leaves. Therefore, epiphytes show the highest nutrient recovering mechanisms compared to hosts or hemi-parasite species.

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