

Diversity of Underutilized Plant Species in Knuckles Forest Reserve, Sri Lanka: A Case Study

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Underutilized plant species often find themselves confined to homegardens, small-scale farming systems, and forest ecosystems. Among these production systems, there has been insufficient attention given to studying the underutilized species and their economic potential in forest reserves. Therefore, this study was carried out to assess the diversity and economic importance of underutilized plant species in the four divisions of Knuckles forest reserve (Riverston, Pitawala, Laggala and Kaluganga) in Matale District, Sri Lanka. There were 40 sampling plots laid with a dimension of 20 m × 20 m. The plant species were taxonomically identified through expert consultation and validated using specimens available at the Herbarium. The study identified a total of 34 underutilized plants from 27 families in the area. The diversity index was calculated for each division. Relative frequency of species indicated that the most widespread species were *Neolitsea cassia* (11.6%), followed by *Antidesma alexilaria* (8.3%), *Syzygium cumini* (7.4%), *Calamus rotang* (6.6%) and *Careya arborea* (6.6%). The highest relative density was observed for *A. alexilaria* (17.4%), followed by *N. cassia* (12.3%), *C. rotang* (11.2%), and *Osbekia octandra* (10.3%). The highest species richness was reported in the Pitawala division (22) next to Laggala division (18), But it was very low in Kalugana division (6). A similar trend was obtained for Shannon-Wiener Diversity Index and it was 0.895 in the Pitawala division which indicated that this area had highest diversity of underutilized species. Mean number of population was high in Riverston (600±152 stem ha⁻¹) next to the Pitawala division (416.65±82.62 stem ha⁻¹). Further studies are necessary to assess the diversity of underutilized species and their potential applications across the Knuckles forest reserve.

Keywords: Economic potential, Knuckles forest reserve, Underutilized plants, Sri Lanka