

**Identification of Species Belonging to Genus *Salacia* (Celastraceae) using Morphological and Leaf Anatomical Characters**

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**Abstract**

Genus *Salacia* which belongs to the family Celastraceae, consists of climbing shrubs that distribute throughout the tropical parts of the world. There are five species of this genus recorded in Sri Lanka, namely *S. acuminatissima*, *S. diandra*, *S. chinensis* (Heen Himbutuwel [S]), *S. oblonga* and *S. reticulata* (Kothalahimbutu [S]). Among these five, *S. chinensis* considered as near threatened species and all other four species were considered as endangered according to the National Red List of Sri Lanka 2012. The present study was focused on the taxonomical identification of these species using morphological and leaf anatomical characters. Within this study period, eighty two distinct populations of genus *Salacia* were identified in twelve districts by covering all the administrative provinces. Among those eighty two, sixty nine populations were new records. Seventy morphological characters and thirty leaf anatomical characters were recorded. Cluster Analysis was performed for fifty multistate morphological and twenty five multistate leaf anatomical characters. Data were analysed using PAST version 3.2 software. According to the dendrogram, there were six prominent clusters at 0.3 similarity level. Among those six clusters, *S. oblonga* formed the largest cluster consisting of three sub clusters whose taxonomic status needs to be decided following DNA studies. All others were represented as a single cluster per species. Out of the eighty two distinct populations studied, thirty four populations were identified as *S. oblonga*, twenty two as *S. reticulata*, nineteen as *S. chinensis*, five as *S. acuminatissima* and two as *S. diandra*. According to the SIMPER analysis, stomatal number, vein islet number, stomatal index, number of spongy parenchyma layers and vein termination number have been contributed more than other characters for species separation.

**Keywords:** *Salacia*, Morphology, Anatomical, Cluster analysis