Pharmacognostic evaluation of the leaves of *Atalantia ceylanica* (Arn.) Oliv.: An anatomical and microscopic approach

P. A. N. G. Perera, K. S. Hiripitiya, P. A. C. D. Veerasiri, B. P. Udani

Department of Ayurveda Pharmacology, Pharmaceutics and Community Medicine, Faculty of Indigenous Medicine, University of Colombo, Sri Lanka

Atalantia ceylanica (Arn.) Oliv., which belongs to the Rutaceae family, is native to dry and intermediate zones of Sri Lanka and some regions of South India. The leaves of *Atalantia ceylanica* (Arn.) Oliv. has been traditionally used in folk medicine due to its presumed anti-inflammatory and antimicrobial properties. Despite its ethno-medicinal significance, systematically documented pharmacognostical characteristics remain limited. The objective of the current study is to establish comprehensive anatomical standards for the leaves of *A. ceylanica*, in order to assist the taxonomic authentication, crude drug identification and botanical quality control procedures. Leaves of *A. ceylanica* were examined for morphological and microscopic distinctive characters after authentication at the National Herbarium, Peradeniya. Microscopic evaluation was carried out using thin sections of fresh leaf samples and powdered dry leaves. Macroscopic examination revealed the leaf to be simple, alternate, coriaceous with an ovate to oblong lamina exhibiting reticulate venation and a characteristic citrus aroma. Microscopic analysis of transverse sections showed a dorsiventral leaf anatomy with a single-layered epidermis covered by a thin cuticle. The mesophyll consisted of elongated palisade parenchyma and spongy parenchyma, interspersed with numerous oil glands. The vascular bundle in the midrib region was surrounded by a parenchymatous bundle sheath. Stomata were predominantly parasitic and prismatic calcium oxalate crystals were distributed throughout the mesophyll. Powder microscopy revealed diagnostic elements including parasitic stomata, oil globules, starch granules, lignified fibers, crystal aggregates, simple and multicellular trichomes, etc. It was concluded that observed anatomical features provide reference standards for authentication and identification.

Keywords: *Atalantia ceylanica (Arn.) Oliv., Pharmacognostical, Morphological, Microscopic*