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Comparative Study on Leaf Anatomy in Selected Garcinia Species in Peninsular Malaysia

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Abstract

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Abstract

A comparative study of leaf anatomy was attempted on Garcinia species in Peninsular Malaysia to identify anatomical features useful in species identification and classification. The species are Garcinia mangostana var. mangostana, Garcinia mangostana var. malaccensis, and Garcinia celebica. Leaves were collected from two different regions: Kuantan, Pahang and Kepong, Kuala Lumpur. The leaf anatomical study was done using the methods of leaf peeling, leaf venation, leaf cross-section, and scanning electron microscopy. The assessment of the leaf anatomy found that these three Garcinia species showed similarities in anatomical features, including the presence of paracytic stomata on the abaxial surface, a straight to wavy anticlinal wall of both adaxial and abaxial surfaces, a thick cuticle wax layer, the presence of druses, mucilage canal, petiole vascular bundle, the presence of collenchyma cells in the midrib, and also the presence of sclerenchyma cells in midrib and petiole. Meanwhile, the notable anatomical variation observed in this study included three types of midrib vascular bundles: the outline of the leaf margin, the presence of tanniferous idioblast, leaf marginal, and laminal

venation as six types of epicuticular waxes present on epidermal surface. Overall, this study highlighted the anatomical features that are taxonomically valuable, which could be used to identify selected Garcinia species in Malaysia. © Universiti Putra Malaysia Press.

Author keywords

Garcinia; Garcinia celebica; Garcinia mangostana var. malaccensis; Garcinia mangostana var. mangostana; leaf anatomy; taxonomy

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