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Taxonomic Significant of Leaf Anatomical Characteristics of Selected Globba L. (Zingiberaceae) Species in Peninsular Malaysia

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Abstract

A comparative leaf anatomy study was carried out on 10 taxa of Globba L. (Zingiberaceae) in Peninsular Malaysia to ascertain their systematic significance, especially for species differentiation and identification. Methods used include leaf clearing, leaf sectioning using a sliding microtome and observation under a scanning electron microscope. Results showed that a combination of the following characters have taxonomic significance in Globba spp. Studied, i.e., outlines of leaf margin, midribs, petioles and their relative sizes; number of vascular bundles in arc I, II, III and IV in the midribs and petioles; absence or presence and type of trichomes; presence of fibre caps and girders

in vascular bundles in the leaf lamina, as well as the presence of hypodermal layers below adaxial epidermis. Anatomical characteristics such as tufted trichomes in *G. patens*, papilose adaxial epidermal cells in *G. variabilis* var. *pusilla*, rounded margin in *G. variabilis* and an arc I vascular bundle present only in the midrib of *G. variabilis* var. *pusilla* can be used as diagnostic characters for each species. *Globba variabilis* var. *pusilla* which is closely related to *G. variabilis* can be distinguished by the papilose epidermal cells. This study proved that leaf epidermis anatomical characteristics could possibly be applied to the identification of some species in *Globba* with certainty. © Penerbit Universiti Sains Malaysia, 2025.

Author keywords

Globba; *Globba variabilis* var. *pusilla*; Leaf Anatomy; Peninsular Malaysia; Zingiberaceae

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anatomy; angiosperm; cell; identification method; leaf; taxonomy

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