

## **Taxonomic implications from leaf stomatal anatomy of *Calotropis gigantea* R. Br. (Apocynaceae) found in Matara, Sri Lanka**

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Identification of purple and white flower forms of *Calotropis gigantea* R. Br. (Apocynaceae) found in Sri Lanka is impossible using only morphological characters when there are no flowers in the plant. Flowering is seasonal. In this study, we explored leaf stomatal anatomy of the two forms using scanning electron microscopy (SEM) in order to investigate if stomatal anatomy was informative separating them. Amphistomatic stomatal complexes are elliptical, sunken, irregularly scattered and conspicuous across the epidermis. The lower and upper surfaces of both forms exhibit cuticular striations. Organization and arrangement of the striae around the stomata are different in both forms and each form has its unique organization. In the white form, the individual stomata on both surfaces are separated from one another by 5-6 bundles or clusters of cuticular materials and striations that originated at the tips of the stomata are radiated outwards. Such an organization is not observed in the purple form. In the purple form, clear thread like cuticle striations are remarkable on both abaxial and adxial surfaces. Adjacent stomata are usually interconnected by the heavily cutinized few to several thread like bundles of ornaments which are originated around the stomata and each bundle consist of 5 -8 parallel striae and they are not confined to areas around the stomata but distribution occurs over the other cells; stomatal subsidiary and normal epidermal cells. Accordingly, the results of organization and arrangement of the cuticular striae around the stomata have provided characters to identify the two floral forms which would also be valuable as the correct identification is important to conserve the white form, which is rare and also medicinally important.

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