
Floral and Leaf Epidermal Morphology of Two Selected Species in Genus *Plumeria* and Their Taxonomic Significance

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Two species of *Plumeria* (*P. rubra* L. and *P. obtusa* L.) found in Sri Lanka are quite similar in their morphology. There is no total descriptive research work carried out about floral and leaf epidermal morphology in genus *Plumeria* in Sri Lanka. Therefore, the main aim of this research was to compare and contrast variation in floral and leaf epidermal morphology to assess their value in species level identification and classification. Another objective is to establish the taxonomic relationships between these two species. Leaves and flowers of *Plumeria obtusa*, and *Plumeria rubra* (*P. rubra* var. *acutifolia*, *P. rubra* var. *tricolor*) were collected from three locations in Matale and Matara districts. Floral morphological characters such as petal length and width, etc. and leaf epidermal morphological characters such as stomatal density and index, trichome density, etc. of the species were observed, measured and compared. The results of this investigation manifested some similarities and interspecific variation of the species. Relatively significant highest adaxial stomatal index and stomatal density are in *P. rubra* var. *acutifolia* and lowest in *P. obtusa*. Trichome density, trichome length and width are highest in *P. obtusa* and lowest in *P. rubra* var. *acutifolia*. Longest, widest epidermal cells and longest narrowest guard cells are in *P. obtusa*. Shortest, narrowest epidermal cells and shortest, widest guard cells are in *P. rubra* var. *tricolor*. Shape of epidermal cell on adaxial leaf surface in *P. obtusa*, *P. rubra* var. *acutifolia* and *P. rubra* var. *tricolor* are irregular, pentagonal and hexagonal respectively. Moreover longest and widest petal length are in *P. obtusa*. and corolla colour of the two species are characteristics to them. Therefore, those differences could be used as taxonomically valuable characters to identify the two species. However both species showed inter species similarities in paracytic stomata and non-glandular, unicellular, filiform trichome, presence of epicalyx, twisted petal aestivation and lobed stigma.

Keywords: Epidermal morphology, Floral morphology, Plumeria obtusa, Plumeria rubra, Taxonomy