

TAXONOMY & ECOLOGY

Beyond Classical Approaches

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ECOLOGY OF *CRYPTOCORYNE AURICULATA* ENGLER IN PAKAN, SIBU, SARAWAK

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ABSTRACT

The ecological study of *Cryptocoryne auriculata* Engler was conducted at two different localities *vis.* Sungai Gamalat and Sungai Tajuk, Pakan, Sibu, Sarawak. The studies covered generally on morphology, anatomy and growth pattern and biomass allocation from those two rivers. The quadrat of 0.5m² x 0.5m² was used in this study and was randomly established at the areas of the occurrence of *C.auriculata*. There are not much different in term of morphological characteristic of the plants at both rivers and there was no distinct characteristic observed as well. From the studies, it was clearly showed that the growth pattern and biomass allocation from the two localities were significantly different. The trend can be shown by total dry weight, dry weight for leaf, petiole and root, leaf area ratio and specific leaf area that were significantly differed between Sg. Gamalat and Sg. Tajuk. The total number of plant at Sg. Gamalat was 72 plants/0.5m² and 50 plants/0.5m² at Sg. Tajuk. Stomatal index were higher at Sg. Tajuk compare at Sg. Gamalat while the occurrence of stomata were abundance at the lower surface compared to the upper surface for both at Sungai Gamalat and Sungai Tajuk.

Keywords: Morphology, anatomy, growth pattern and biomass allocation

INTRODUCTION

Genus *Cryptocoryne* is one of the native species in shaded forest which locally known as kiambang batu (Melayu Sarawak), kelatai (Iban), hati-hati paya (Peninsular Malaysia) and tropong ajer (Banjarmasin, Kalimantan) (Ipor *et al.*, 2006). It is a common freshwater aquatic plant from genus Araceae which has gaining its popularity among aquarists Andersen *et al.*, (2006). More than sixty species of *Cryptocoryne* were known and most of them are amphibic (Jacobsen, 1977) while about fifty species are confined in South East Asia (Simon *et al.*, 2008). In 1985, Jacobsen had made a taxonomic revision and stated that there are eleven *Cryptocoryne* species in Sarawak. Later on, three more species were discovered namely *C. yujii* Bastmeijer (Bastmeijer, 2002), *C. eunoi* Y.Sasaki (Sasaki, 2002) and *C. zaidiana* Ipor & Tawan (Ipor *et al.*, 2005). To date, there is no record of genus *Cryptocoryne* found in Sabah (Ipor *et al.*, 2006b). The ecology for *Cryptocoryne* is generally in tropical humid forest, fresh water tidal zone and rarely in brackish water which is submerged or emergent aquatic (Mayo *et al.*, 1997).

Cryptocoryne has been given some attention lately due to high prices in international market for aquarium industry. Some species of *Cryptocoryne* are in highly demand and has commercially exported to Japan and Singapore (Simon *et al.*, 2007). *C. auriculata* on the other hand is rather popular in Europe because of the species is quite often exported there (Bastmeijer, 2000). This particular species is characterized by the short tube with the broad red collar zone as well as red limb of the spathe. The leaves are easily recognized by its stiff and slivery leaves Ipor *et al.* (2009) narrowly ovate shape (Arends, 1982). *C. auriculata* grows best at the riverbank part of the river as recorded by Ipor *et al.* (2009) as the species can affirmed well on complete exposed to complete shaded condition. Throughout Sarawak, *C. auriculata* is recorded in five localities on sandy to sandy alluvial soil and stony ground with moderately river or streams. The present study is mainly to determine the morphological characteristics and biomass allocation and growth pattern of both *C. auriculata* from Sungai Gamalat and Sungai Tajuk.