LEAF PHYSIOGNOMIC ANALYSES OF AVAILABLE SPECIES OF AVICENNIA L. IN INDIAN SUNDARBANS FOR USING AS TAXONOMIC TOOL

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Abstract: Leaf physiognomic analyses with both macro and micro morphological traits of three species of *Avicennia* namely, *A. alba* Blume, *A. marina* (Forsk.) Vierh, and *A. officinalis* L. have been done to identify the variability among them. A wide range of variations in leaf shape, length, apex, base, texture, venation pattern, epidermal cell type, stomatal cell type, stomatal frequency and stomatal index are observed in the studied species which might be used as taxonomic tool. Moreover, the detailed micro morphological features as revealed through present study are new observations which will enrich the existing database on leaf morphology of *Avicennia*.

Keywords: A. alba, A. marina, A. officinalis, Micro morphology, Identification

REFERENCE

Baily, I.W. and Sinnitt E.W. (1915). A botanical index of Cretaceous and Tertiary climates: *Science*, **41:** 831–834.

Barik, J. and Chowdhury, S. (2014). True mangrove species of Sundarbans Delta, West Bengal, Eastern India. *Check List*, **10**: 329–334.

Dilcher, D.L. (1974). Approaches to the identification of angiosperm leaf remains. *Botanical Review*, **40:** 1–157.

Hickey, L.J. (1973). Classification of the architecture of dicotyledonous leaves. *American Journal of Botany*, **60**: 17–33.

Naskar, K.R. and Mandal, R.N. (1999). Ecology and Biodiversity of Indian Mangroves. Daya Publishing House, New Delhi, pp. 1–754.

Namazi, R.; Zabihollahi, R.; Behbahani, M. and Rezaei, A. (2013). Inhibitory activity of *Avicennia*

marina, a medicinal plant in Presain folk medicine, against HIV and HSV. *Iranian Journal of Pharmceutical Research*, **12:** 435-443

Shanmugapriya, R.; Ramanathan, T. and Renugadevi, G. (2012). Phytochemical characterization and antimicrobial efficiency of mangrove plants Avicennia marina and Avicennia officinalis. International Journal of Pharmaceutical & Biological Archives, **3**: 348-351

Tomlinson, P.B. (1986). The Botany of Mangrove. Cambridge University Press. ISBN 0-521-25567-8, pp. 1–412.

Traiser, C.; Stefen, K.; Uhl, D. and Mosbrugger, V. (2005). Environmental signals from leaves – a physiognomic analysis of European vegetation. *New Phytologist*, **166**: 465-484.

Wolfe, A. (1993). A method of obtaining climatic parameters from leaf assemblages. U.S. Geological Survey Bulletin 2040.

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