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Tree Diversity and Ecological Status of *Madhuca latifolia* (Roxb.) J.F. Macbr in Forests of Odisha

Saswat Nayak and Uttam Kumar Sahoo*

Department of Forestry, School of Earth Sciences & Natural Resource Management
Mizoram University, Aizawl-796 004, India
**E-mail: uksahoo_2003@rediffmail.com*

Abstract: The present paper aims to study the tree diversity in *Madhuca latifolia* (Roxb.) J.F. Macbr. (Mahua) dominated forests of Odisha situated in 10 different agroecological zones. A total of 94 tree species belonging to 29 families were recorded. The most dominant family was Fabaceae. The Shannon-Wiener index (H′) for all the natural forests studied under different agroclimatic zones ranges from 1.592–2.560 with maximum in AEZ-9 (2.560) and minimum in (AEZs) (1.592). The quantatitive features such as density and importance value index of different species varied significantly between the forests in different agroecological zones. The tree density varied from 343 stems ha^{-1} (in AEZ-4-Nayagarh Baispalli-Buguda-Banigochha Forest) to 790 stems ha^{-1} (in AEZ-2-Mayurbhanj Similipal Reserve Forest, Chandbil), and the majority of the tree species were found in intermediate girth class. *M. latifolia* recorded for maximum stem density in AEZ-2 (137.5 stems ha^{-1}) and minimum in AEZ-8 (30 stems ha^{-1}). There was a lot of variation in tree size of this species between the forests and the tree size heterogeneity of this species was clearly related to stand density; the stands with larger trees were less heterogenous in tree size.

Keywords: Species composition, Stand structure**,** Association index, *Madhuca latifolia,* Tropical forests