



## Structure and Diversity of Associated Plant Communities along the Age Series in Sal Plantations of North-Eastern UP

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**Abstract:** The associated communities of plantation forest of sal (*Shorea robusta* Gaertn.) which dominate the tropical deciduous vegetation of north-eastern U.P., India, were observed in an age series of 10, 20, 40, ~70 and >100 year stands at low and high disturbances to study the changes in their diversity and community attributes. Irrespective of the disturbance level, the species richness increased with increasing maturity of sal stands indicating the relative importance of successional status and degree of disturbance in determining the community composition. The leguminous trees and climbers were rare in younger stands and more so in stands facing high disturbance. The sum of IVI for leguminous and non-leguminous shrubs as well as for trees other than sal was significantly higher in less disturbed stands. However, the sum of relative density for leguminous shrubs was greater in older stands facing high disturbances. The sal stands along the age series showed significant differences among their  $\alpha$ -diversity as well as  $\beta$ -diversity values. The 70-years stands, facing moderate disturbances, had optimum plant diversity. We now solely depend on managed forest for plant diversity because the anthropogenic disturbance and extraction of forest resources are inevitable. Since the moderate disturbance shows little adverse impact on plant diversity, a guided extraction of plant resources may be feasible to keep the local economy going without significant loss to diversity and ecosystem attributes of the associated communities of sal plantations.

**Keywords:** Associated communities, Disturbance level, Maturity status, Sal plantations, Structure and diversity

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