
Phytosociological Assessment of Two Tropical Forest Ecosystems

Sarvesh Suyal*
R. D. Gaur**
Sanjeeta Rana***

ABSTRACT

The present study was undertaken to analyse comparative assessment of phytosociological attributes and diversity indices across two different tropical natural forest ecosystems in Lodhipur Rajput area of district Moradabad Uttar Pradesh. Total values of phyto-sociological attributes were recorded frequency between 440% to 700%, density 26.00 to 68.2 Ind/ha., abundance 50.35 to 115.4 and TBC 370.64 to 575.79 m²/ha for site 'A' (Pure *Tectona grandis*) and site 'B' (Pure *Eucalyptus tereticornis*) respectively. Total values of IVI varied between 299.85 to 299.90 for site 'B' and site 'A' respectively. Species diversity was found highest (49.49) for site 'B' and lowest (16.73) for site 'A'. Cd varied between 3.12 to 15.3 for site 'A' and site 'B' respectively. Evenness was found 0.81 for site 'A' to 1.79 for site 'B'. Species richness (alpha diversity) was estimated between 9.00 for site 'A' to 12.00 for site 'B'. In Site- 'A', frequency was found significantly correlated with density, abundance and IVI, whereas frequency and abundance were recorded non-significant with total basal cover of the tree species. In Site- 'B', frequency was found positively correlated with abundance and total basal cover of tree species. These results might be an indication of major disturbances prevailing like heavy fodder, fuelwood and NTFPs consumption of important tree species in site 'A'. These finding are suggested that there is an urgent need to manage and conserve such valuable tree species association in degraded forest patch of *Tectona grandis*.

Keywords: Phytosociological attributes, Species diversity, Tropical forests.

INTRODUCTION

Phytosociology deals with plant communities, their composition and development, and the relationship between the species within them. The aim of phytosociology is to achieve a coefficient empirical model of vegetation using plant taxa combination that characterizes vegetation units. It is useful to describe the population dynamics of each plant species occurring in a particular community and to understand how they relate to the other species in the same community (Mishra et al., 2012; Ismail and Alavia, 2015).

Vegetation is an essential part of the ecosystem that interprets the effects of the total environment

(Billings, 1952). Vegetation complex fluctuates from one season to another season in a cyclic manner over the years in a successional way and the fluctuations suggest a response by each species population to prevailing heat, moisture and light as modified by the vegetation itself (Heady, 1958). The development and deterioration of plant species alters the pattern of the species distribution in community (Watt, 1964). Kolasa and Rollo (1991) suggested that the vegetation emphasis on composition, development, geographic distribution and environmental relationships of plant communities. Plants growing together have mutual relationship among themselves and with the environment. These interactions among different plants and between plants and their environment result in the outcome of different vegetation types in different areas.

*Department of Botany, IFTM University, Moradabad Uttarpradesh

**Department of Botany, HNB Garhwal University, Srinagar Garhwal Uttarakhand

*** Department of Botany, IFTM University, Moradabad Uttarpradesh

*Corresponding author: suyalsarvesh@gmail.com
