

Vascular Plant Diversity in the Nirmala College, Ranchi, India

Indu Kumari*

Department of Botany, Nirmala College, Doranda, Ranchi, Jharkhand, India

Abstract

A year-long eco-biological study of campus of Nirmala College, Ranchi revealed the occurrence of more than 40 species of various vascular plant belonging to family Asteraceae, Fabaceae, Meliaceae, Caesalpiniaceae, Anacardiaceae, Rubiaceae, Lamiaceae, Solanaceae, Amaranthaceae, Euphorbiaceae and Apocynaceae. The campus is neatly covered under lush green branches of tall trees. There are about 250 large trees. A total of 45 species of angiosperms were observed. Extensive surveys were conducted to document the species in each season and identification was done with the help of plant taxonomist. Data collection and information on floral diversity of any region is a fundamental requirement to understand ecosystem type and biodiversity pattern.

Keywords: Species, family, vascular plant and campus

*Author for Correspondence E-mail: induraj0016@gmail.com

INTRODUCTION

India is one of the 19 megabiodiverse countries of the world and consists of 48,158 species of plants in its 10 biogeographic regions [1]. Field survey and information on floral diversity of any region is a fundamental requirement to understand ecosystem type, biodiversity pattern and other ecological qualities at local, regional and global levels [2]. Several studies have focused on economically important plant species [3, 4]. These species affect natural ecosystem structure and function [5], although they have significant ecological benefits too. Over the years, invasion of various alien species of diverse origin has been increased in India and reported mainly from different regions [6–15].

Over the years, as developmental activities are continuing to modify the natural habitat and ecosystem throughout the world. The numbers of native floral and faunal species are continuously decreasing with their diminishing habitat. It is important to document the current biodiversity status and monitor the changes in vegetation pattern over the time. Considering these facts, the present study has been conducted to assess plant diversity within the Nirmala Campus, Ranchi.

Study Area

The present study was conducted in Nirmala College, Ranchi, affiliated to Ranchi

University, Ranchi, Jharkhand. Ranchi is located at the longitude of 85.32 and latitude of 23.35. Nirmala college campus area is 6.10 acres. There is lush green lawn with approximately 250 ornamental and shady trees, decompost pits boost our “Eco-friendly” status. Studies revealed the occurrence of more than 40 varieties of plants belonging to *Annonaceae*, *Malvaceae*, *Rutaceae*, *Meliaceae*, *Leguminosae*, *Rosaceae*, *Myrtaceae*, *Rubiaceae*, *Verbinaceae*, *Moraceae*, *Anacardiaceae*, *Apocynaceae*, *Moraceae*, family etc.

Tectona grandis, *Shorea robusta*, *Terminalia alata*, *Anogeissus latifolia*, *Mallotus philippensis* and *Melia azedarach* are major tree species in the campus. The average temperature of Ranchi district of Jharkhand remains moderate year round ranging from 30 to 42°C in the summers and 7 to 25°C in winter. Most of the rainfall is received during the month of June to September. Due to its unique location in the vicinity of different habitat types, the campus consists of suitable environmental conditions to support a variety of floral species.

The institute works meticulously to maintain a green, pollution free environment in the campus. Students are sensitized through seminars conducted on environment oriented topics like ‘Global Warming’, ‘Biodiversity’

etc. Plantation programmes, Swachh Bharat Abhiyan and crusade against polythene in and around college campus are regular activities undertaken by NSS.

Table 1: List of Vascular Plants in Nirmala College, Campus.

Sl. No.	Common Name	Scientific Name
1.	Ashok	<i>Polyalthia longifolia</i>
2	Neem	<i>Azadirachta indica</i>
3	Shisham	<i>Dalbergia sissoo</i>
4.	Peach	<i>Prunus persica</i>
5.	Gum tree	<i>Eucalyptus</i> sp.
6.	Guava	<i>Psidium guajava</i>
7.	Ixora	<i>Ixora</i> sp.
8.	Teak (Sagwan)	<i>Tectona grandis</i>
9.	Mulbery	<i>Morus</i> sp.
10.	Jack fruit	<i>Artocarpus heterophyllus</i>
11.	Tamarind	<i>Tamarindus indica</i>
12.	Peepal	<i>F. religiosa</i>
13.	Coconut Palm	<i>Cocos nucifera</i>
14.	Karam	<i>Adina cardifolia</i> Roxb.
15.	Gulmohar (yellow)	<i>Delonix elata</i> Linn.
16.	Gulmohar (red)	<i>Delonix regia</i>
17.	Aam	<i>Mangifera indica</i> L.
18.	Curry leaf	<i>Murraya koenigii</i>
19.	Nerium	<i>Nerium oleander</i> Mill
20.	Harsingar	<i>Nyctanthes arbor tristis</i> L.
21.	Amla	<i>Phyllanthus emblica</i>
22.	Barhar	<i>Artocarpus lokoocha</i> Roxb.
23.	Amaltas	<i>Cassia nodosa</i>
24.	Poinciana	<i>Caesalpinia pulcherrima</i>
25.	Sajina	<i>Moringa oleifera</i>
26.	Mehndi	<i>Lawsonia innermis</i>
27.	Papita	<i>Carica papaya</i>
28.	Amra	<i>Spondias mangifera</i>
29.	Gular	<i>F. ramosa</i>
30.	Coffee	<i>Coffee arabica</i>
31.	Megh Chhal	<i>Litsea monoptela</i>
32.	Bignonia	<i>Bignonia</i> spp.
33.	Champa	<i>Michelia champa</i>
34.	Jalebi Acacia	<i>Acacia auriculifomis</i>
35.	Gulmohar (Blue)	<i>Jacranda mimosifolia</i>
36.	Bakain	<i>Melia azardrichta</i>
37.	Karunj	<i>Pongamnia pinnata</i>
38.	Gumhar	<i>Gmelina arborea</i>
39.	Indian almond	<i>Terminalia cattappa</i>
40.	Radhachura	<i>Pletophorum pterocarpum</i>
41.	Khajur	<i>Phoneix dactylefera</i>
42.	Ashok	<i>Saraca asoca</i>
43.	Goose berry	<i>Phyllanthus</i> Sp.
44.	Red-jasmine	<i>Plumeria rubra</i>
45.	Custard Apple	<i>Annona squamosa</i>

The college is aware of the fact that Higher Education Institutions have to play a significant role to inculcate environment consciousness among the future citizens of the country.

MATERIALS AND METHODS

Intensive plant surveys were conducted from June 2014 to December 2015 in different seasons, floral specimens were collected from different locations and identified with the help of relevant floras, book chapters and published literature [16–21, 2]. In addition, information on ornamental flora was assembled from Van Bhavan, Ranchi.

RESULTS AND DISCUSSION

The present study was conducted to assess vascular plant diversity in Nirmala College, Ranchi, Jharkhand. Extensive surveys were conducted to document the species in each season and identification was done with the help of plant taxonomist. The campus is neatly covered under lush green branches of tall trees. There are about 250 large trees. A total of 45 species of angiosperms were observed. Studies revealed the occurrence of more than 40 varieties of plants belonging to *Annonaceae*, *Malvaceae*, *Rutaceae*, *Meliaceae*, *Leguminosae*, *Rosaceae*, *Myrtaceae*, *Rubiaceae*, *Verbinaceae*, *Moraceae*, *Anacardiaceae*, *Apocynaceae*, *Moraceae*, family, etc.

CONCLUSIONS

The present study has been conducted to assess plant diversity within the Nirmala Campus, Ranchi which would be important to monitor the change in near future and implementation of suitable management plan. Present study provides basic information on floristic diversity of college campus. These findings would be important in monitoring the changes in vegetation pattern in the near future. The period of flowering of plants species of different origin would help in prediction of climate change over the years and role of interaction between their behavior and local environmental conditions. Regular monitoring of vegetation, floristic diversity and scientific inputs are crucial to promote native species; and proper management of floristic diversity is crucial as they provide unique habitat.

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