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## Plants diversity of Netaji Subhash Chandra Bose Garden, Saharanpur, Uttar Pradesh

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### Abstract

The present study deals with plants diversity of the Netaji Subhash Chandra Bose Garden, Saharanpur, Uttar Pradesh. Overall, the plants diversity is being shown by members of 14 different families. Out of these members, Fabaceae are dominant with 4 in numbers followed by Rosaceae with 3 members and rest 12 families are with one member each. Earlier the area was lush green not from inside only but the outer skirts were prime source of greenery. As the time has passed the area has been encroached and limited within its premises to see the greenery. Therefore, it is necessary to study and understand its plants diversity before its devastation and which the main objective of the current study was.

**Keywords:** Plants diversity, Saharanpur, families, greenery, encroached

### Introduction

Plants are contributing as a special kingdom of organisms. They have ranged from unicellular algae to highly developed angiosperms (include herbs, shrubs and trees). Diversity is defined as differences amongst the members of a particular group of organisms. Plant diversity is a vast topic of discussion as we are aware that in the single group of plant i.e. angiosperm we have approx. three lakh species known worldwide. Plants have capability to produce their own food from atmospheric carbon dioxide and that is why they are considered as autotrophs. The word Biodiversity is defined as the kind and numbers of organisms and their pattern of distribution (Nagiyan *et al.*, 2003; Dhiman *et al.*, 2006; Anthwal *et al.*, 2010; Haidari and Rezaei, 2013) <sup>[1-4]</sup>. It is an indispensable part of our daily lives and livelihood and constitutes the resources upon which families, communities, nations and future generation depend upon.

Plant diversity deals with the enumeration of plant species growing in a particular region and at a particular time. Its evaluation is considered as the basic requirement to understand the current status of plant diversity. The structure, composition and vegetative function are the most significant ecological attribute of a particular ecosystem, which show variation in response to environmental as well as anthropogenic variables (Shaheen *et al.*, 2012) <sup>[5]</sup>. Major threats to ecosystem and biodiversity are loss of habitat, fragmentation, overexploitation, pollution, invasion of alien species and global climate (Gairola *et al.*, 2008) <sup>[6]</sup>.

The rapid loss in the floristic diversity and changing pattern of vegetation due to various biotic and abiotic factors has necessitated the qualitative and quantitative assessment of vegetation. Factors such as anthropogenic pressure, construction, industrialisation, urbanisation and natural calamities aids to the declination of the natural plant diversity (Saini *et al.*, 2021; Kumar and Singh 2023) <sup>[7,8]</sup>. Same is being facing by the study area i.e. Netaji Subhash Chandra Bose Garden (Company Garden). Earlier the area was lush green not from inside only but the outer skirts were prime source of greenery. As the time has passed the area has been encroached and limited within its premises to see the greenery. Therefore, it is necessary to study and understand its plant diversity before its devastation and which the main objective of the current study was.

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## Study Area

Neta ji Shubhash Chandra Bose Botanical Garden (Company garden) lies in east part of Saharanpur district which is nearly 2 km from railway station, 1.5 km from jail chungi and situated in beri bagh area. Saharanpur lies in the northernmost part of the state Uttar Pradesh. It shares border with the states of Haryana, Uttarakhand and Himachal Pradesh. In the east of the district lies district Haridwar of Uttarakhand state, in the west lies districts Yamuna Nagar

and Karnal of Haryana state, district Dehradun of Uttarakhand state in the north and district Muzaffarnagar and Shamli in the south. The district is geographically located in the North- West part of the Saharanpur Division. It lies between 29° 34' and 30° 34' North latitude and 77° 7' and 87° 12' East longitude. The district area is 3869 sq. km. and the climate is tropical. Yamuna is the main river which flows on the western limit of the district in south direction.



Fig 1: Map of the study area

## Materials and Methodology

To carried out the study frequent visits of the area had been done. During the visits raw data were generated on the basis of information gathered through locals, garden officials, e-books and e-libraries. Then the primary data were converted into refined form as per the scientific temperament with the help of relevant literature available (Gaur, 1999; Gupta *et al.*, 2008 and Byung, 2014) [9, 10, 11].

The study has revealed that the garden is rich in terms of plants diversity comprising herbs, shrubs and trees. It has been tried to study all the plants in the garden and even in the adjacent areas. However, the total assemblage during the study includes dominance of trees with 18 species while shrubs are representing by 02 species and herbs are 03 in number which are summarized in the table given below:

## Results and Discussion

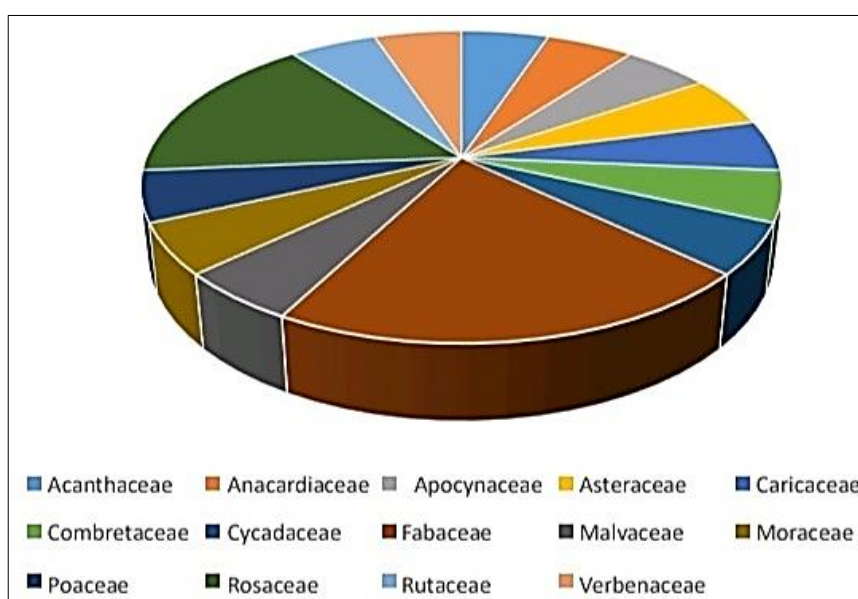
Table 1: Representing plants diversity in the Company garden, Saharanpur

S. No.	Botanical Name	Common Name	Family	Habit
1.	<i>Aegle marmelos</i>	Bael	Rutaceae	Tree
2.	<i>Artocarpus heterophyllus</i>	Kathal/Jackfruit	Moraceae	Tree
3.	<i>Bambusa vulgaris</i>	Baans/Bamboo	Poaceae	Tree
4.	<i>Bauhinia variegata</i>	Kachnar	Fabaceae	Tree
5.	<i>Catharanthus roseus</i>	Sadabahar	Apocynaceae	Herb
6.	<i>Carica papaya</i>	Papita/Papaya	Caricaceae	Tree
7.	<i>Cycas circinalis</i>	Queen Sago	Cycadaceae	Tree
8.	<i>Gaillardia pulchella</i>	Sundance/Indian blanket	Asteraceae	Herb
9.	<i>Lantana camara</i>	Raimuniya	Verbenaceae	Shrub
10.	<i>Mangifera indica</i>	Aam/Mango	Anacardiaceae	Tree
11.	<i>Millettia ovalifolia</i>	Rosewood	Fabaceae	Tree
12.	<i>Prunus bokharensis</i>	Aloo Bukhara	Rosaceae	Tree
13.	<i>Pyrus communis</i>	Nashpati/Pear	Rosaceae	Tree
14.	<i>Rosa indica</i>	Gulab	Rosaceae	Shrub
15.	<i>Ruellia simplex</i>	Petunia	Acanthaceae	Herb
16.	<i>Saraca indica</i>	Ashok Tree	Fabaceae	Tree
17.	<i>Seena siamea</i>	Kassod Tree	Fabaceae	Tree
18.	<i>Sterculia alata</i>	Buddha Coconut	Malvaceae	Tree
19.	<i>Terminalia arjuna</i>	Arjun Tree	Combretaceae	Tree

Overall, the plants diversity is being shown by members of 14 different families (Table 1). Out of these members of Fabaceae are dominant with 4 in numbers followed by Rosaceae with 3 members and rest 12 families are with one member each (Table 2).

**Table 2:** Presenting percentage distribution of different plants families

Family	Number of plants species	Percentage distribution
Acanthaceae	1	Approx. 5.26%
Anacardiaceae	1	Approx. 5.26%
Apocynaceae	1	Approx. 5.26%
Asteraceae	1	Approx. 5.26%
Caricaceae	1	Approx. 5.26%
Combretaceae	1	Approx. 5.26%
Cycadaceae	1	Approx. 5.26%
Fabaceae	4	Approx. 21.05%
Malvaceae	1	Approx. 5.26%
Moraceae	1	Approx. 5.26%
Poaceae	1	Approx. 5.26%
Rosaceae	3	Approx. 15.79%
Rutaceae	1	Approx. 5.26%
Verbenaceae	1	Approx. 5.26%



**Fig 2:** Pie diagram showing proportion of different plants families

### Conclusion

Since the area is a garden under the government of Uttar Pradesh and having an ample plants diversity. However, threats are prevailing on the grounds of development for its existence in the nearby future. Commercialisation has become choking situation to such green lungs therefore it is necessary to upgrade and protect such places within the heart of the city. It can only be achieved through sustainable development.

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