



Distribution of different bamboo species in different areas of North Chota Nagpur division of Jharkhand

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Article Info

Received: 23-11-2015,

Revised: 20-12-2015,

Accepted: 27-12-2015

Keywords:

Bamboo, North Chota Nagpur, genetic diversity, species, distribution.

Abstract

Bamboo is a cultural feature of South-east Asia. No country in this region is without indigenous bamboo flora. No wonder then, that this resources has been variously called “the poor man timber”. This natural resource plays a major role in the livelihood of rural people and in rural cottage industry. Only 11 species have been recorded from the village of seven districts (Hazaribagh, Chatra, Giridih, Bokaro, Dhanbad, koderma and Ramgarh) of the North Chhota Nagpur diviaion of Jharkhand. In this paper the main focus is to describe the distribution of different bamboo species in North Chota Nagpur.

INTRODUCTION

The bamboo is a group of woody grass and regarded as ‘Emperor’ among the grasses. It belongs to the family poaceae and sub –family bambusoidae. It is commonly called poor’s man’s timber. There are approximately 1500 species under 87 genera of bamboo worldwide (Ohrnberger, 1999) and area are confined in South and Southeast Asia and mostly in China, India and Myanmar. In India, it grows abundantly almost all over India, except in Kashmir Valley and represented by 20 genera and 136 species. On the basis of genetic diversity of bamboo India is second richest country after China. In India, more than 50% of total bamboo species occur in North Eastern States. The forest of bamboo cover 10.3 million hectare which contributes 12.8% of total forest area of country (Rai and Chauhan 1998). In North Chota Nagpur, natural bamboos occur within dry bamboo brakes, 5B/9E (Champion and Seth, 1968) spread over most of the district. Outside the forest, large scale cultivation is practiced in villages.

The bamboo species were identified based on the morphological and anatomical descriptions of the plants (Cambell, 1988; Vermah and Bahadur, 1980; Tewari, 1993) and culm sheath morphology

(Chatterji and Raizada, 1963). The culm sheath is the best indicator to identify the bamboo plant. The presence or absence of auricles, presence or absence of bristles on auricle, shape and size of auricles, presence or absence of hair on outer surface of sheath, colour of hairs, smoothness of inner surface of sheath etc. are some of the identifying characters of bamboo plants.

The knowledge of bamboo on distribution is far from satisfactory and there are many gaps in our knowledge. With increased population pressure, natural stand of bamboo and its diversity have declined considerably. Further, no concerted effort has so far been made to document the bamboo distribution in North Chota Nagpur division of Jharkhand. Even the primary information regarding the accurate number of bamboo species spread over the state, division, district, and block is not readily available. Still there exists some controversy over the availability of different bamboo species growing in and outside forest of North Chota Nagpur. However, information on species distribution of various species in forest and non-forest areas of North Chota Nagpur is not available. The present study aims at filling up this gap and assessing the bamboo species distribution.

MATERIAL AND METHODS**STUDY SITES**

The present investigation was carried out in seven districts (Hazaribag, Chatra, Ramgarh, Bokaro, Giridih, Dhanbad & Koderma) of Jharkhand during the year 2012 to 2015. The North Chota Nagpur division of Jharkhand is lying between 23°37' N to 24°4' N latitude and 86°6' E to 86°1' E longitude.

Simple random sampling procedure was adopted for selection of the villages where information collections about bamboo species distribution have been carried out between 2012 and 2015 in North Chota Nagpur of Jharkhand. The ten villages were randomly selected from each district in such a way that the selected sites represent the entire district. In this way, the total 70 villages represent the entire study sites. These 70 villages were covered seven districts. Such seven districts are – Hazaribagh, Chatra, Ramgarh, Bokaro, Giridih, Dhanbad and Koderma. All the bamboo species available in these villages were identified and then write the name and number of bamboo species in each village separately on note book. The bamboo species were identified on the basis of some special characteristics of each bamboo species. In this way, bamboo species identified and the number of bamboo species at each district was recorded.

RESULTS AND DISCUSSION

A total of 11 species have been found in Hazaribag, Ramgarh, Chatra, Bokaro, Dhanbad,

Giridih and Koderma districts. During field survey, the total 70 villages were randomly selected for study that covered seven districts. Within the selected villages, a total of 11 species are recorded belonging to 7 species under genus *Bambusa*, 2 species under genus *Dendrocalamus*, one species under genus *Sasa* and one species is unidentified. These species are *B. balcooa*, *B. bambos*, *B. nutan*, *B. striata*, *B. tulda*, *B. wamin*, *B. tulda*, *D. strictus*, *D. sericeus*, *Sasa palmata* and one unidentified species.

Table 1 show that the most frequent species is *D. strictus* as available in maximum number of villages (58). On availability in number of villages, the second highest frequent species is *B. nutan* (54) followed by *B. tulda* (38), *B. bambos* (14), *B. balcooa* (2), *B. multiplex* (1), *B. striata* (1), *B. wamin* (1), *D. sericeus* (1), *Sasa palmata* (1) and unidentified species (1). On the basis of cultivation by number of villages, after *B. nutans*, the most cultivated species is *B. tulda* followed by *B. bambos*. *D. strictus* and *B.nutans* are the two species cultivated throughout the North Chota Nagpur except in very few villages. However, since some forest areas have also been included for assessing bamboo diversity, the dominant species of North Chota Nagpur are *D. strictus* followed by *B. bambos*, *B. tulda*, and *D. sericeus*. Most frequent species is *D. strictus* and least frequent species is *D. sericeus*. *D. sericeus* is only found at Parasnath Hill of Giridih district.

Table 1: List of different types of bamboo species & number of villages, Blocks & Districts where these bamboos found

SN	Species	No. of villages in which sps. Found (70)	No. of blocks in which sps. Found (31)	No. of districts in which sps. found (7)
1	<i>B. balcooa</i>	2	2	2
2	<i>B. bambos</i>	14	11	6
3	<i>B. multiplex</i>	1	1	1
4	<i>B. nutan</i>	54	28	7
5	<i>B. striata</i>	1	1	1
6	<i>B. tulda</i>	38	16	7
7	<i>B. wamin</i>	1	1	1
8	<i>D. sericeus</i>	1	1	1
9	<i>D. strictus</i>	58	31	7
10	<i>Sasa palmata</i>	1	1	1
11	Unidentified bamboo	1	1	1

Table 2: Distribution of bamboo species in each district of North Chota Nagpurdivision

S.N .	Species	Hazarib ag	Chatra	Ramgar h	Giridih	Dhanb ad	Koder ma	Bokaro
1.	<i>B. balcooa</i>				◆	◆		
2.	<i>B. bambos</i>	◆	◆	◆		◆	◆	◆
3.	<i>B. multiplex</i>	◆						
4.	<i>B. nutan</i>	◆	◆	◆	◆	◆	◆	◆
5.	<i>B. striata</i>	◆						
6.	<i>B. tulda</i>	◆	◆	◆	◆	◆	◆	◆
7.	<i>B. wamin</i>	◆						
8.	<i>D. sericeus</i>				◆			
9.	<i>D. strictus</i>	◆	◆	◆	◆	◆	◆	◆
10.	<i>S. palmata</i>	◆						
11.	Unidentified						◆	
	Total Species	8	4	4	5	5	5	4

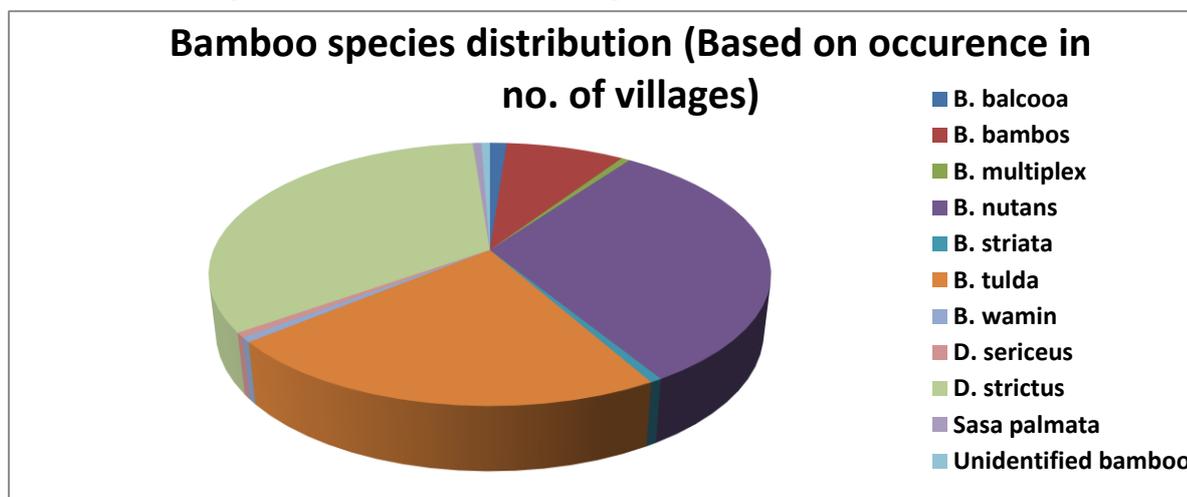
Among all these species *B. multiplex*, *B. striata*, *B. wamin*, and *Sasa palmata* are commonly planted in both urban and rural areas of North Chota Nagpur only as ornamental species. Among the ornamental species, *B. striata* is most common and found in many places. *B. wamin* is commonly found in some places where as *B. multiplex* and *S. Palmata* has been encountered in only one place of North Chota Nagpur.

Assessment of bamboo distribution in North Chota Nagpur has been covered simultaneously for natural forest, forest plantation and domesticated bamboos in villages. The climatic condition also favours the species richness. The species like *D. strictus*, *B. nutan* and *B. tulda* are very common in North Chota Nagpur division. It has been reported that *B. nutans*

is the most adapted species throughout the Eastern and North Eastern states (Singh 2006, Ram *et. al.*, 2010) and also reported from Chota Nagpur Plateau of Jharkhand by Nath *et. al.*, 2012. The medium to high rainfall, humidity, and soil characters might be the regions behind the availability with high frequency of these species in North Chota Nagpur.

The greater bamboo diversity in North Chota Nagpur is mainly due to its geographical diversity. A large part of the division is in plain with some hilly areas. The hilly areas of Parasnath provide a niche for *D. sericeus* bamboo. The most of the species found in Hazaribah and Giridih districts of North Chota Nagpur. The new species not found in selected villages of Chatra, Ramgarh, Bokaro and Dhandad districts.

Figure 1: Bamboo species distribution in North Chota Nagpurdivision of Jharkhand (Based on 70 villages which was selected 10 villages from each district)



CONCLUSION

The main species recorded in the natural forest areas are *D. Strictus* (more than 98% as recorded) and *D. Sericeus* (found only in Parasnath Hill forest in Giridih district). The species wise bamboo distribution in North Chota Nagpur division of Jharkhand are *B. balcooa*, *B. bambos*, *B. multiplex*, *B. nutans*, *B. tulda*, *B. striata*, *B. wamin*, *D. sericeus*, *D. strictus*, *S. palmata* and one unidentified bamboo. *D. sericeus* has been found in only Parasnath Hill of Pirtand block of Giridih district.

Among all species, *D. strictus*, *B. nutans* and *B. tulda* are three species found throughout the all districts of North Chota Nagpur and also cover most of the bamboo areas. The next dominating species is the *B. bambos* (Kanta bans) which is found in 6 districts (except Giridih). As regard the minor species of North Chota Nagpur, *B. balcooa* is found in Giridih & Dhanbad districts only. Among all these species *B. multiplex*, *B. striata*, *B. wamin*, and *Sasa palmata* are commonly planted in both urban and rural North Chota Nagpur only as ornamental species. Among the ornamental species, *B. striata* is most common and found in many places. *B. wamin* is commonly found in some places where as *B. multiplex* and *S. Palmata* has been encountered in only one place of North Chota Nagpur.

ACKNOWLEDGEMENT

The authors are thankful to the Head, PG Department of Botany, Dr. C. Prasad for providing research facilities and encouragement. They are also thankful to the supervisor Dr. S.C. Jain and other departmental faculty members for motivation. The authors express thankfulness to research members of Vinoba Bhave University, Hazaribag (Jharkhand)

for granting the project research work to complete the Ph.D. course.

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How to Cite this Article:

Diwakar Prasad Nirala, S. C. Jain and Phallo Kumari, 2016. Distribution of different bamboo species in different areas of North Chota Nagpur division of Jharkhand. *Bioscience Discovery*, **7**(1):21-24.