The Biobrio ISSN : 2393-9508 e-ISSN: 2582-4902
An International Quarterly Journal of Life Sciences
Website: www.thebiobrio.in SJIF 2023:8.16
10 (1&2): 932-934, 2023

Ecological study of sacred grove (Jaher) of Baskanali village of Dumka, Jharkhand

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Received : 10th December, 2022 ; Accepted : 10th January, 2023

ABSTRACT

Sacred groves are in-situ communal conservation sites. Most of the communities of the world still consider sacred groves as their altar and conserve it. A significant change has been noticed regarding its conservation in recent years. In the present paper an attempt has been made for ecological study of sacred groves of Santals of Dumka block which explores the floral biodiversity of this area. Field observation, secondary data and several interviews have been conducted with the prominent village people (Pradhan, Naike) and other knowledgeable tribals to gather information.

Key Words - Sacred groves, Ecology, Dumka, Santals

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INTRODUCTION

Sacred groves are group of trees considered sacred for a particular community. It is popularly known as Jaher by Santals. They are the forest patches communally protected by local people due to their religious association with them. A significant change has been noticed regarding its conservation in recent years. Sacred groves are the natural gene pool preserver and example of habitat preservation through community participation (Gadgil and Vartak, 1975). The Santals have a culture of their own which they have preserved unchanged from time immemorial (Sinha & Singh, 2003). Worship of sacred groves is the traditional practice of various group of the society. It is mandatory to compile the ethnobotanical presently existing among the diverse community before its values are completely vanished (Rao & R. Raghavendra, 1996). Thus, there is now urgency for ethnobotanical research amongst aboriginal people (Maheshwari, 1983). There are many studies entitled to further quantify these ethics which leads to biodiversity conservation and sustainable ecosystem (Pal and Mukhopadhyay,2011). Sacred grove is rich heritage among the tribal communities which played significant role in religious and socio - cultural life among the local tribal people (Malhotra *et al.,* 2001).

MATERIALS AND METHODS

Dumka district of Jharkhand state comprises 10 blocks namely -Dumka, Gopikander, Jama, Jarmundi, Kathikund, Masaliya, Ramgarh, Ranishwer, Saraiyahat, Shikaripara. Here, the study area taken is Baskanali village present in the north of Dumka block.

The present study considers the species diversity of particular area and the ecological survey of vegetation inside the sacred grove, Jaher. Regular visits and surveys were made to collect plant specimens both in flowering and fruiting stages. Field observation on habit, habitat, pollination, seed dispersal, medicinal and socio-cultural uses

have been recorded in the field at the time of collection. The study is based on analytical characters. Analytical characters are structural characteristics which can be directly observed or measured. They may be quantitative or qualitative.

OBSERVATION

Topography: Slightly elevated land

Boundary: Present

Human interference: No, due to closed gate

Date - 11.09.2021

Fig. 1- Sacred grove of Baskanali village with GPS map

Quantitative structure:

Quantitative structure of plant communities includes-

1. Abundance-It is the number of individuals of any species per sampling unit of occurrence.

$$\text{Abundance} = \frac{\text{Total no. of individual of species}}{No.\ of\ quadrant\ per\ unit\ in\ which\ they\ occur}$$

2. Density- It is the numerical strength of a species in the community. It gives an idea of degree of competition.

$$\text{Density} = \frac{\text{Total no. of individual of species}}{No.\ of\ quadrant\ per\ units\ studied}$$

3. Frequency- It is the number of sampling units in which the particular species occurs.

$$\text{Frequency}\ (\%) = \frac{\text{No. of units in which species occurred}}{Total\ no.\ of\ units\ studied} x\ 100$$

4. Frequency class - Raunkiaer's (1934) grouped five frequency classes

Frequency A= 1- 20 % B= 21- 40%
C=41 - 60% D=61 -80% E=81 -100%

Table 1. Ecological survey of vegetation structure of Baskanali SG

S.N.	Name of Species	No. of individuals in each quad.										Total no. of individuals of each Sp.(X)	Total no. of quad. of occurrences (Y)	Total no. of quad. Studied (Z)	F%= (Y/Z * 100)	frequency class	Density (X/Z)	Abundance (X/Y)
I	**UPPER STOREY**	1	2	3	4	5	6	7	8	9	10							
1	*Shorea robusta*	5			2	5		1				25	4	10	40	B	2.5	6.3
2	*Cassia fistula*		0			0			1			1	1	10	10	A	0.1	1.0
II	**MIDDLE STOREY**																	
3	*Butea monosperma*				2		2	3		2	3	15	6	10	60	C	1.5	2.5
4	*Phoenix dactylifera*				3							3	1	10	10	A	0.3	3.0
III	**SHRUB LAYER**																	
5	*Ageratum conyzoides*		1	1		1		1		1		5	5	10	50	C	0.5	1.0
6	*Lantana camara*				1				1		1	6	3	10	30	B	0.6	2.0
IV	**GROUND LAYER**																	
7	*Cynodon dactylon*			2		5		6	3		4	20	5	10	50	C	2	4
8	*Heteropogon contortus*			4		5				3	3	15	4	10	40	B	1.5	3.7

Dominant species is *Shorea robusta* Gaertn. of family Dipterocarpaceae. There is total 25 trees out of which 3 are worshipped and considered the supreme. Co-dominant families are of Poaceae, and other associated families are of Fabaceae, Arecaceae, Asteraceae and Verbenaceae. There is only 1 monocot family with 2 species and 5 dicot family with 6 species. Hence, dicots are more than the monocots.

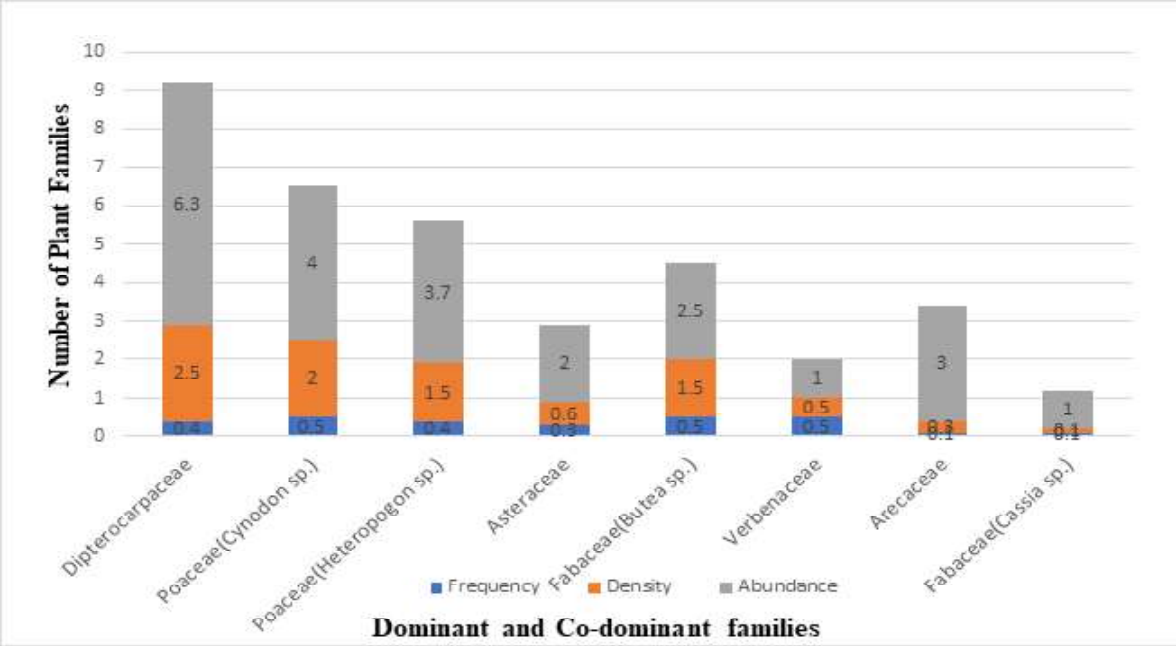

Fig. 2- Representation of Dominant and Co-dominant Families Baskanali SG

CONCLUSION

The floristic diversity of Baskanali sacred grove is well conserved due to proper boundary and closed gate. The permission of village head can only allow the entry within this Jaher. Generally, interference within these sacred groves was prohibited since ancient times because people were keen to protect these sacred groves due to religious belief and traditions. Due to modernization, the natives (Santals) of some places are seen less interested in upkeeping their cultures and taking less active participation for its conservation. However, sacred groves of villages located far from city are well maintained. The prominent people like Pradhan or Mukhia plays an important role for its protection and conservation whose regular and strict control over these sacred groves can check unwanted interference, thus promoting floral growth and its diversity.

ACKNOWLEDGEMENT

We express our sincere gratitude towards our prominent tribals (Manjhi, Naeke) and native villagers who supported us in identification and collection of ethnobotanical and socio-cultural use of the prevalent flora.

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