



ISSN : 0973-7057

Int. Database Index: 616 www.mjl.clarivate.com

## Ethnobotanical study of sacred groves (jaher) of Sri Amra of Dumka block, Dumka district, Jharkhand

Joyena Marandi\* & Prabhawati Bodra

University Department of Botany, S.K.M University, Dumka, Jharkhand, India

Received : 20<sup>th</sup> December, 2020 ; Revised : 09<sup>th</sup> January, 2021

**Abstract :** Sacred groves popularly known as Jaher by Santals serve as major contribution for in-situ conservation of nature. A significant change has been noticed regarding its conservation in recent years. In the present paper an attempt has been made for ethnobotanical study of sacred groves of Santals of Dumka block. Field observation, secondary data and several interviews have been conducted with the prominent village people (Pradhan, Naika) and other knowledgeable tribals to gather information. Various ethnobotanical uses of economically important plants used by Santal tribes have been discussed in this paper.

**Keywords :** Sacred groves, Ethnobotany, Dumka, Santals

### 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. Due to modernization, the natives (Santals) are drawn far away from their cultures and taking less active participation for its conservation. The ethnic groups present here are mostly Santals then Hindus, Muslims, Bengalis and paharias are rare. Worship of sacred groves is the traditional practice of various group of the society. In recent years traditional ethnobotanical studies have received much attention due to their wide local acceptability and clues for new or less known medicinal plants.<sup>1</sup> It is mandatory to compile the ethnobotanical knowledge presently existing among the

diverse community before its values are completely vanished.<sup>2</sup> Thus, there is now urgency for ethnobotanical research amongst aboriginal people.<sup>3</sup> There are many studies entitled to further quantify these ethics which leads to biodiversity conservation and sustainable ecosystem.<sup>2</sup> Considering previous studies and the present exploration clearly indicate that such kind of ethnobotanical studies may be beneficial to human race in conserving these sacred groves as depository for many rare endangered floras holding numerous faunas.

### MATERIALS & METHODS

In Jharkhand, the Savar is one of the primitive tribal group and they are most deprived section in our country.<sup>4</sup> Another tribal group is that of Santal which is mostly centred in Santal Pargana. The Santals have a culture of their own which they have preserved unchanged from time immemorial.<sup>5</sup> Dumka covers most of the area of Santal Pargana and is also a second capital of Jharkhand. Dumka district of Jharkhand state comprises 10 blocks namely-

\*Corresponding author :

Phone : 9955381830

E-mail : mjoyena62@gmail.com

Dumka, Gopikander, Jama, Jarmundi, Kathikund, Masaliya, Ramgarh, Ranishwer, Saraiyahat, Shikaripara. Here, the study area taken is Dumka block which comprises around 277 villages. The entire block of Dumka is divided into 25 panchayats. Each panchayat consists of 1-26 villages. Here a nearby village has been taken into consideration for the study, i.e., Sri Amra present in the north-east region.

The present study considers the species diversity of particular area and the ethnobotanical study 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.

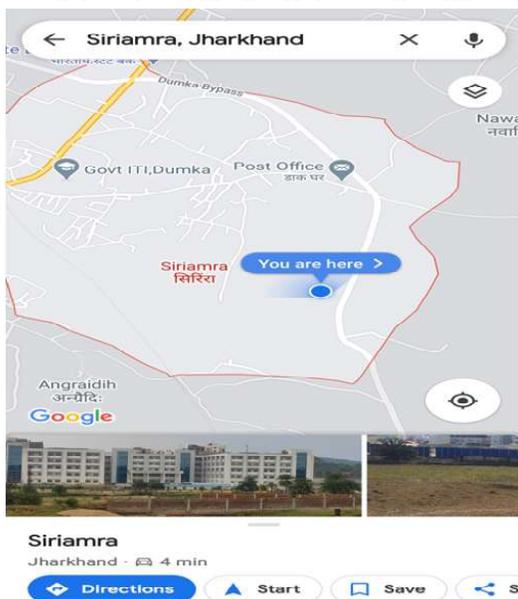


Figure 1- GPS Location of Sri Amra Jaherthan

**OBSERVATION**

Topography	-	Plain
Boundary	-	Not present
Humus	-	poor
Soil type	-	Sandy and rocky
Date	-	10.09.2019

**Quantitative structure**

Quantitative structure of plant communities includes-

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

Abundance= 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.

Density = Total no. of individual of the species ÷ No of quadrant per units studied

**3. Relative Density, RDE**

RDE = (No. of individuals of species ÷ No. of individuals of all species) X 100

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

Frequency (%) = (No. of units in which species occurred ÷ Total no. of units studied) X 100

**5. Relative frequency, RFR**

RFR of Species = (No. of occurrences of species ÷ No. of occurrences of all species) X 100

**6. 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-List of plants recorded in Sri Amra Jaher, Dumka

Sl. No.	Species name	Family	English name	Hindi name	Local Name	Total no. of Individuals
<b>Upper storey</b>						
1	<i>Shorea robusta</i>	Dipterocarpaceae	Sal	Sakhu, Sakhua	Sarjom	11
2	<i>Madhuca indica</i>	Sapotaceae	Indian butter tree	Mahua	Matkom	1
<b>Middle storey</b>						
3	<i>Butea monosperma</i>	Fabaceae	Bastard teak	Palash	Muruk'	2
4	<i>Phoenix dactylifera</i>	Arecaceae	Date palm	Khajur	Khijur	1
<b>Shrub layer</b>						
5	<i>Lantana camara</i>	Verbenaceae	Sage	Raimuni, Panchphuli	Putus	3
<b>Ground flora</b>						
6	<i>Tridax procumbens</i>	Asteraceae	Coatbutton	Kanphuli	Jormot	6
7	<i>Athyrium filix-femina</i>	Athyriaceae	Lady fern	Kashiphul, Parnang	Kokro arak'	10
8	<i>Miscanthus sinensis</i>	Poaceae	Silver grass	Chandighaas	Kharan' / Khadan'	8

**Table 2- Quantitative analysis of vegetation structure of Sri Amra Jaher**

Sl. No	Name of Species	No of individuals in each quadrant					Total no of individuals of each species (X)	Total no of quadrant of occurrences (Y)	Total no. of quadrant studied (Z)	Frequency Y/Z * 100	Frequency class	Density (X/Z)	Abundance (X/Y)
		1	2	3	4	5							
<b>I UPPER STOREY</b>													
1	<i>Shorea robusta</i>	3		5	2	1	11	4	5	80	D	2.2	2.8
2	<i>Madhuca indica</i>		1				1	1	5	20	A	0.2	1
<b>II MIDDLE STOREY</b>													
3	<i>Butea monosperma</i>		1		1		2	2	5	40	B	0.4	1
4	<i>Phoenix dactylifera</i>			1			1	1	5	20	A	0.2	1
<b>III SHRUB LAYER AND CLIMBERS</b>													
5	<i>Lantana camara</i>			2		1	3	2	5	40	B	0.6	1.5
<b>IV GROUND FLORA</b>													
6	<i>Tridax procumbens</i>	1		2		3	6	3	5	60	C	1.2	2
7	<i>Athyrium filix - femina</i>	3	2	2	3		10	4	5	80	D	2	2.5
8	<i>Miscanthus sinensis</i>	2	3	1	2		8	4	5	80	D	1.6	2

## DISCUSSION

Ethnobotanical significance of plants listed in Sri Amra Jaher

### 1. Religious plants:

*Shorea robusta* was the dominant species found which has close association with the native Santals. Flowers are used during worship in festivals like Sohrai, celebrated in the month of January, also known as Harvest festival and Baha, meaning flower in Santali, is a festival which falls in the month of March simultaneously with the Hindu festival, Holi (festival of colours). As we know that spring season which is in March is the month when new leaves arise and flowers bloom, so Baha festival is celebrated after Sohrai, and tribals traditional belief system prohibits them to cut or pluck any plant parts, thus promoting successful flowering process.

*Phoenix dactylifera* has significance role worldwide since Christians carry it on Palm Sunday to churches. Palm Sunday is celebrated a week before Easter Sunday.

*Butea monosperma* also known as 'Flame of the Forest' is believed to be the tree form of Agnidev, 'God of Fire'. The leaves are used in many religious rituals of Hindus. Flowers are used in making colours in the festival of Holi.

*Madhuca indica* is worshipped by many tribal communities because of its usefulness. Seed oil is used in diyas (small mud bowls) during Diwali festival of Hindus. Barter system is still prevalent with this plant product as it acts as goods exchanger in many tribal and rural areas.

### 2. Medicinal Plants:

*Shorea robusta* is used to treat various diseases such as leucorrhoea, gonorrhoea, diarrhoea, piles, dysentery, etc.

*Madhuca indica* or *Madhuca latifolia* is used to treat anaemia, diabetes, ulcer, uterus disorders, infertility, etc.

*Butea monosperma* has widespread use in Unani and Homoeopathic medicines. Its flower juice treats diarrhoea, leprosy, skin diseases, thirst sensation, etc.

*Phoenix dactylifera* treats gastrointestinal troubles, counteract alcohol intoxication, sore throat, colds, bronchial asthma, etc.

*Lantana camara* treats cancers, chickenpox, measles, ulcers, tumors, high blood pressure, tetanus, rheumatism, etc.

*Tridax procumbens* has antifungal, anticoagulant and insect repellent properties. Leaf juice treats wounds and skin diseases.

*Athyrium filix-femina* treats cough, rheumatism, sores, burns and scalds, improves lactation after child birth, as an antiparasitic, anthelmintic and carminative.

*Miscanthus sinensis* is used to disperse poison, anticoagulant, anti-inflammatory, diuretic and refrigerant.

### 3. Edible plants:

*Shorea robusta* fruits are occasionally consumed as food. Its seed oil is used in the manufacture of food and non-food industries. Oil can be used as cooking oil and alternative for cocoa butter in chocolate industry.

*Madhuca indica* plays significant role in tribal life. Its fruit is used as vegetables by native people. Seed oil

can be used as cooking oil. Dried flowers are boiled and consumed as important nutritive food.

*Phoenix dactylifera* fruits are consumed as dry fruits which is rich in minerals, vitamins and fibres.

#### **4. Timber yielding plants:**

*Shorea robusta* is an excellent timber yielding plant.

*Madhuca indica* is another most common timber.

*Butea monosperma* is durable under water, thus used in boats, well curbs and water scoops.

#### **5. Economically important plants:**

*Shorea robusta* is a highly economic plant since dried leaf plates have commercial importance. Its timber is hard and durable and yields best quality furniture.

*Butea monosperma* is used for timber, reisin, fodder, medicine, dye and bidis.

*Madhuca indica* is used for timber. Seed oil is used in making soaps and chocolates. Flowers and fruits are highly nutritive. Flowers are fermented and distilled producing spirituous liquor known as 'country beer' or 'handi' in Santali. It is one of the common sources of earning by poor tribal women.

*Athyrium filix-femina* is used for decorative purposes and making flower bouquets.

*Lantana camara* is known as Honey plant, since much nectar collection is possible from this plant. Thus, significant apiculture plant.

*Phoenix dactylifera* fruits are mostly sold by tribal women. The dried leaves are used for making mats. The local alcoholic beverage known as 'Tari' obtained from the tree trunk is famous among tribal. The unfermented palm juice is delicious and nutritious. Jaggery is made by boiling palm juice in a large container which is rich in calcium and iron.

#### **CONCLUSION**

The species diversity of Sri Amra Jaher is comparatively poor due to dry, sandy and rocky soil condition. However, the presence of a shallow trench which

holds and allows water flow temporarily provides home for ferns which is rare in most sacred groves. Communal belief of native Santals has restored the vegetation of this Jaher despite its poor-quality soil since unnecessary human activities is restricted in this area and hence promotes nature conservation.

#### **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 and its fauna.

#### **REFERENCES**

1. **Tripathi, Y.C. 2000.** Ethnomedicinal treasure of tribal Rajasthan. *J. Non timber for products.* **7(1-2):** 77-84.
2. **Rao, R. Raghavendra. 1996.** Traditional knowledge and Sustainable development, Key role of Ethnobiologist. *J. Ethnobotany.* **8:** 14-24.
3. **Maheshwari, J.K. 1983.** Development in ethnobotany Editorial. *J Econ Taxon Bot.* **4(1):** 1-4.
4. **Oraon, P.C. 2003.** Land and people of Jharkhand, Jharkhand Tribal Welfare Research Institute, Welfare Department, Government of Jharkhand, Ranchi. 6-7.
5. **Sinha, V.N.P. and Singh, L.K.P. 2003.** Jharkhand: Land and people. Rajesh Publications, New Delhi, pxii.

#### **ADDITIONAL REFERENCES**

1. [www.researchgate.net](http://www.researchgate.net)
2. [www.isca.in](http://www.isca.in)
3. [wgbis.ces.iisc.ernet.in](http://wgbis.ces.iisc.ernet.in)
4. [bioone.org](http://bioone.org)
5. [www.phytojournal.com](http://www.phytojournal.com)

\*\*\*