

## Original Research Article

# Study of some medico-religious plants in the tribal localities of Bargarh district ,Odisha ,india

### Key words:

Bargarh, Padampur, medicinal plants

### INTRODUCTION

Plants

### ABSTRACT

**Aims:**The present study has an aim to document the medico-religious plants in the tribal regions of Bargarh District of Odisha state in India.

**Place and Duration of Study:** Department of Botany, Anchal College Padampur, Bargarh, Odisha, India between August 2023 to December 2023

**Methodology:**A survey on medico-religious plants was carried out in the tribal localities of Bargarh district in the state of Odisha, India. The study area is actually a tribal zone of Western part of Odisha. Plants of the nature are not only limited to providing medicine, food, shelter and clothing but are also used by people in many religious functions. Information regarding medico-religious properties was collected during field survey in different tribal villages of Bargarh. Data was collected directly from local people, traditional ayurvedic doctors and crude medicinal plant parts sellers. Voucher specimens of 20 medico-religious plants were collected from the study area and identified in the laboratory of Botany Department in Anchal College, Padampur using local flora book and available literatures.

**Results:** The Information regarding both the religious uses and medicinal uses of 20 plants have been documented. Also scientific name, local name, family name and habit of plants were recorded in this study. It was found during the survey that most of the common plants are being used as the source of traditional medicine and also as the products to be used in different religious practices like worship, marriages, birthday celebrations etc.

Comment [MF1]: Add more effective key words

are auspicious gifts for human. Human beings use plants as a source of food, clothes and shelter. Plants are important organisms as they have the ability to make their own food using carbon dioxide & water. Human also depends on plants for medicine & cosmetics. Medico-religious plants are those plants that have medical values for diseases & religious values in various cultures and religions around the world. The study of medico-religious plants is an essential part of Pharmacognosy. It explores the relationship between plants, medicine and spiritual beliefs. About 65,000 species of plants are used as home remedies for various ailments in Asia (T. Williams & M. B. Karki, 1999)<sup>[1]</sup>. The World Health Organization (WHO) has estimated that 80% of the world's population relies on traditional systems of medicine to meet their primary health care needs. Every year, the medicinal plant related sector increases rapidly but India's share in global market is not very impressive (only 0.5%-1%) indicates that there is increasing demand of these products (J. Singh, A. K. Singh and R. Pravesha, 2003)<sup>[2]</sup>. The rural and tribal people of India still depend on local herbal resources for curing diseases. Systematic and scientific investigations of traditional medicinal plants provide many valuable drugs (Dinanath, 2007)<sup>[3]</sup>. Wild plants are richer in minerals as compared to cultivated plants. These plants satisfy the daily human needs for elementary nutrition sources (I. Kaval, L. Behcet & U. Cakilcioglu, 2014)<sup>[4]</sup>. Ethnobotany deals with the complete information about plants and their medicinal uses (Rahul, 2013)<sup>[5]</sup>. India is one of the twelve mega biodiversity countries of the world, having rich vegetation with variety of medicinal plants. All medicines may be derived from biological

resources (Yuan et al, 2016) <sup>[6]</sup>.A tradition of plant-based knowledge distributed a vast number of ethnic groups. Most of the population have the ethnic history of rituals are more or less isolated from modern world.

Approximately 25% of drugs prepared from the parts of plants on the basis of traditional knowledge(Johnny, Beena & kaviyarasan, 2013) <sup>[7]</sup>.Medicinal plants are used all over the world not only used by tribal community also used in modern health care system(WHO, Geneva, 2002) [8].In India, trees and plants are treated as family and are considered sacred. In Garuda purana mention the ritual use of plants. The twigs of *Butea monosperma*, *Piper longum*, blades of *Cynodon dactylon* and *Eragrostis cynosuroides* soaked with curd,honeyandclarified butter is repeatedly casted in sacrificial fire in Homa ceremonies (Gupta, 1971) <sup>[9]</sup>.In traditional medicine system higher plants have got more attraction towards drug therapy (ShanmugasundaramRV,kalpana, Soris,Maruthupandian&Mohan,2011)<sup>[10]</sup>.Biodiversity is the basis of human survival & constitutes resources upon which families, communities,nationsand future generation depends(Sing, 1994) [11].Traditional medicine is sum total of knowledge & Practical experience and observation transferred (Manjunath, 1990) [12].Indian culture has cosmic believes for sickness and suffering in their life have a close association with many animals and plants in religious activities (Ranta & Pirta, 2007) [13].Hindu Scriptures tell us that a wide range of plants like *Ficus religiosa* and, *Azadirachta indica*, *Ocimum sanctum*, *Curcuma longa*, *Cynodon dactylon* has divine qualities, hence used in a number of religious activities and rituals from marriage (Sharma & Joshi, 2010) [14](Robinson & Crush, 1997) [15].Forest nearest because of easy availability, low cost, no side effect of medicinal plants (Lamba & Mehta, 1995) [16].In some cases wounds are septic & inflamed plant materials(Grierson & Afolayan, 1999) [17].About 4 billion people in developing countries not only believe in the healing properties of plant species but also use them regularly (Rai et al., 2000) [18].Researchwork on ethnobotanical studies is important for the conservation and utilization of biological resources (Chellaiah, Muniappan, Nagappan, Savarimuthu, 2006) [19]

It is clear and can be concluded from the review that a core research work of survey of medico-religious plants has not been carried out in the past in Padampur block of Bargarh District where the main residents are Tribals.

#### **MATERIALS AND METHODS:-**

An extensive field survey for documentation of medico-religious plants was conducted in many tribal localities of Bargarh district, Odisha. Survey was conducted in these localities from August 2023 - November 2023 in order to collectand document the data.Voucher specimens were collected and identified in the laboratory of botany department,Anchal College Padampur,Bargarh by the help of Flora Book of Bihar and Odisha. The documentedinformation includes scientific name, local name, habit, plant parts use, medicinal and religious use.

#### **STUDY AREA:-**

Study was carried out in different tribal villages of Bargarh district in the state of Odisha in India.It was found from the interview that most people are of tribal categories who mostly depend on agriculture for livelihood. Most people are illiterate or only 10th pass.Most of the peoples have there own shops on the both sides of the highway. Some peoples works as vender of vegetable, grocery, tribal and medicinal ayurvedic, clothes and fish and chicken in the daily marketsBargarh. The locality is reach in vegetation that include most of dominant trees like *Santalum album*, *Ficus religiosa*, *Citrus lemon*, *Aegle marmelos*, *Curcuma longa*, *Azadirachta indica*, *Terminalia chebula*, *Mangifera indica* and shrub like *Hibiscus rosa-sinensis*, *Lawsonia mermis*, *Ziziphus jujube* mill andherb like *Musa paradisiaca*, *Capsicum annuum*, *Ocimum sanctum*,*Datura stramonium*, *Clitoria ternatea*, *Cocos nucifera* and grasses like *Cynodon dactylon* , *Oryza sativa* and climber like *Piper betel* are found.

Comment [MF2]: Mention the year?

#### **RESULTS:-**

From the present study, traditional use of selected medicinal plants were documented prior to documentation of result, analysis of medicinal plants were carried out.

Table 1. Analysis of medicinal plants

| Tree | Shrub | Herb |
|------|-------|------|
|------|-------|------|

|                                    |                                 |                                |
|------------------------------------|---------------------------------|--------------------------------|
| <i>Santalum album</i> L.           | <i>Hibiscus rosa-sinesis</i> L. | <i>Curcuma longa</i>           |
| <i>Ficus religiosa</i> L.          | <i>Lawsonia inermis</i> L.      | <i>Musa paradisiaca</i> L.     |
| <i>Citrus limon</i> L.             | <i>Ziziphus jujuba</i> Mill.    | <i>Capsicum annuum</i> L.      |
| <i>Aegle marmelos</i> L.           | <i>Datura stramonium</i> L.     | <i>Ocimum sanctum</i> L.       |
| <i>Azadirachta indica</i> A. Juss. |                                 | <i>Piper betel</i> L.          |
| <i>Terminalia chebula</i> Retz.    |                                 | <i>Clitoria ternatea</i> L.    |
| <i>Mangifera indica</i> L.         |                                 | <i>Cynodactylon</i> (L.) Pers. |
| <i>Cocos nucifera</i> L.           |                                 | <i>Oryza sativa</i> L.         |

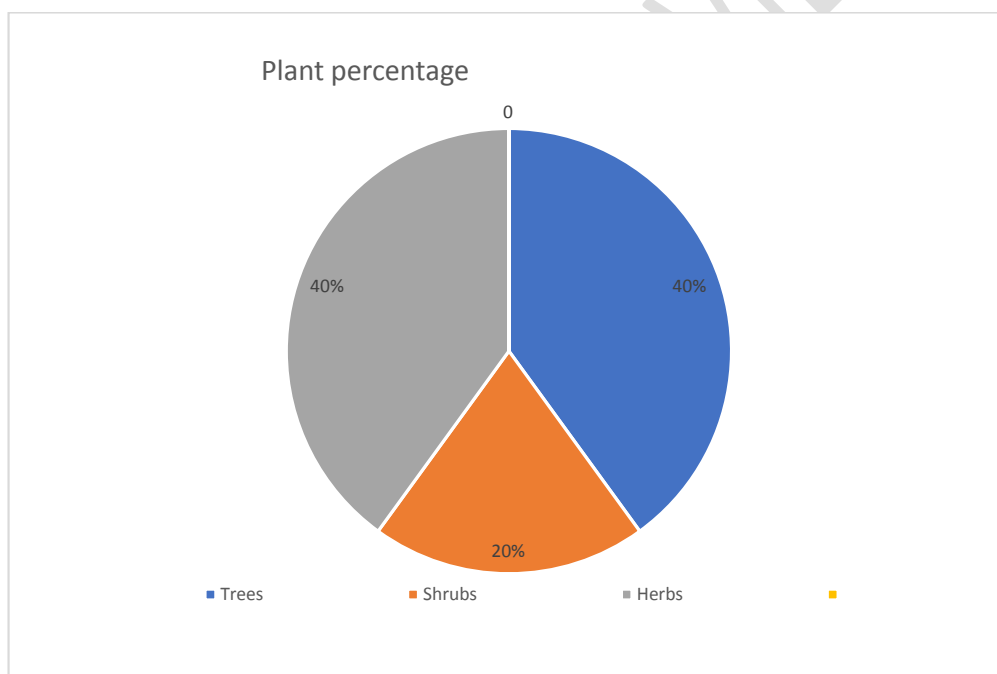
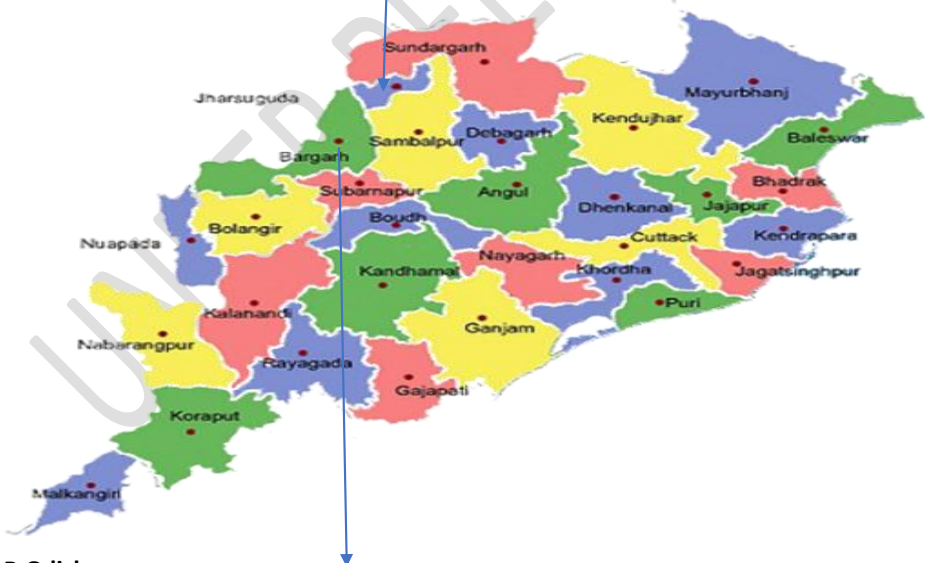


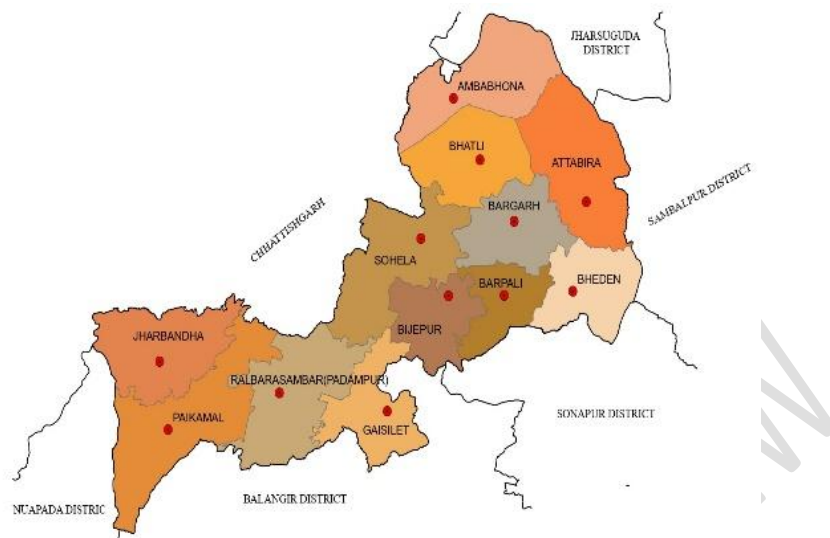
Fig 1. Plant percentage chart



A. Inida Map.



B. Odisha map



### C.Bargarh map(Study site)

Fig 2. Study site

#### Plants documented:-

1. *Musa paradisiaca* ,Local name – Kadali

Family- Musaceae

Medicinal Uses:- Fruit use for diabetes, high cholesterol, low level of potassium in the blood (hypokalemia), Constipation, and diarrhea.

Religious values:- In some pooja(worships), the leaves are used to serve “prashads”(God’s food). It is believed that the offerings and fruits of banana please Lord Ganesha. Banana as fruit is also offered to Lord Vishnu and Lakshmi.

2. *Santalum album* ,Local name- Chandan Family-Santalaceae

Medicinal Uses:- Heartwood is used in skin diseases, burning sensation, jaundice, Intermittent fever and weakness.

Religious values:- Sandalwood, its paste and oil are important in worship of gods. It is considered that “chandana” or sandalwood scents the whole of paradise with its fragrance. It is used to purify holy places.

3. *Cocos nucifera*

Local name- Nadia ,Family- Arecaceae

Medicinal Uses- Green coconut water is used for stomach and kidney problems. Rheumatism and backaches are treated by the oil from the kernel.

Religious values- In most of the religious ceremonies, at the entrance of house a pot filled in water and a coconut with coir on its top is placed .People believe that God and goddess enter the house at this entrance point.The coconut is considered as the symbol of GoddessLakshmi. Coconuts are offered in temples to worship various Gods and Goddesses. The three pores on the coconut shell symbolize Lord Shiva’s eyes.

4. *Mangifera indica* ,Local name- Aam

Family name :Anacardiaceae

Medicinal Uses:- The roots and bark are useful in vomiting, wounds, ulcers, diarrhea, dysentery, diphtheria and rheumatism.

Religious values:- The leaves are used in all religious and social ceremonies of the Hindus. Mangoes are offered to many gods and goddesses as the part of Prasada(God's food).

5. *Ficus religiosa*

Local name- Peepal Family- Moraceae

Medicinal Uses:- Bark has an antibacterial property. The leaves are good for Wounds and skin diseases. The fruit taken with water cures Asthma. The latex is used for curing inflammations

Religious values:- In Hinduism, this tree symbolizes as Maa Parvati(Goddess). It is also known as the Bodhi tree because Gautam Buddha Attained enlightenment under it. Also it is sacred to Vishnu.

6. *Citrus limon*

Local name- Lembu ,Family- Rutaceae

Medicinal Uses:- Lemon is used to treat scurvy. Reduce pain and swelling (inflammation), improve the function of blood vessels, and increase urination to reduce fluid retention, ringing in the ears (tinnitus), Meniere's disease, and kidney stones.

Religious values:- In Hinduism lemon plant are used for their religious and spiritual significance also offered as a symbol of purity are believe to ward of evil spirit.

7. *Capsicum annuum* ,Local name- Mircha Family- Solanaceae

Medicinal uses:- Used for the treatment of cough, toothache, sore throat, parasitic infections, rheumatism, wound healing, low blood pressure, reduce heart disease, prevent blood clots.

Religious values:- In Hinduism, chili is used as an offering to Lord Ganesh.

8. *Aegle marmelos*:- Local name- Bel

Family- Rutaceae

Medicinal uses:- Leaves for diabetes and asthma, fruits for diarrhoea and dysentery,Roots for gastric irritability and intermittent fever.

Religious values:- Leaves offered to please Lord Shiva. The trifoliate leaf is believed to symbolize the three functions of the Lord- the creation, preservation and destruction as well as his three eyes.

9. *Curcuma longa* Local name – Haldi Family- Zingiberaceae

Medicinal use:- Rhizome is used in fever, cough, skin diseases and burning sensation.

Religious values:- Turmeric is applied to the forehead of the devotees and also the forehead of the statues of gods.

10. *Hibiscus rosa – sinensis* Local name – Lal mandar

Family- Malvaceae Habit- Shrub Part used- Flower

Medicinal uses:- Flower is used to strengthen the hair and for curing constipation. A Preparation from the leaves is used to treat boils and sores.

Religious values:- The flowers are offered to goddess Kali as token devotion.

11. *Ocimum sanctum* Local name – Tulsi Family- Lamiaceae

Medicinal uses:- Shoot and leaves to cure fever, cough cold, asthma, bronchitis, Urinary disorders, ringworm and skin diseases.

Religious values:- Tulsi is Hindus' sacred plant which was once Vishnu's armour.

12. *Azadirachta indica* Local name – Neem

Family- Meliaceae

Medicinal usesLeaves for leprosy, hyperdipsia, skin diseases, malaria, wounds, Ulcers, burning sensation, boils and eczema.

Religious values:- It is the manifestation of "Goddess Durga" or "Maa Kali".

13. *Ziziphus jujuba* mill Local name – Buro

Family – Rhamnaceae

Medicinal uses:- Improve digestion & brain function & sleep quality , control blood pressure, reduce inflammation, enhance the immune system and Skin health. Religious values:- The tree is associated with Lord Shiva. Specifically fruits are offered to Mahashivaratri.

14. *Datura stramonium* Local name – Datura Family- Solanaceae

Medicinal uses:- The thornapple is a common remedy for asthma, whooping cough, muscle spasm and other related respiratory diseases and used to reduce inflammation.

Religious values:- In Hinduism, Lord Shiva was known to smoke Datura. Hindus offer the small green fruit during festivals and Special days in Shiva temple.

15. *Lawsonia inermis* Local name- Mehndi Family- Lythraceae

Medicinal uses:- Used topically to treat inflammatory skin conditions & digestive issues, help cool down the body and relieve headaches, fever, and other heat-related disorders and regulating blood pressure. Religious values:- In Hinduism, henna is used during special occasions such as weddings, engagements, and festivals like Diwali, Navratri, and Karva Chauth.

16. *Terminalia chebula* Local name – Harda Family- Combretaceae

Medicinal uses:- Used as a digestive aid, treat respiratory illnesses such as coughs, bronchitis, and asthma. Useful in the treatment of inflammatory conditions and Immune system booster.

Religious values:- InHinduism-Haritaki is considered one of the most important herbs in Ayurveda, which is a form of traditional Hindu medicine. It is believed to be a sacred plant and is often used in Hindu religious ceremonies.

17. *Cynodon dactylon* Local name- Durva Family- Poaceae

Medicinal uses:- Whole plant is used in hyperdipsia, wounds, conjunctivitis, skin diseases, vomiting, diarrhea and dysentery. Religious values:- Durva is used at the time of worship of Goddess Gauri and Ganesh for "Achman" (Sprinkling of water and milk) purpose. God Ganesh loves durva very much.

18. *Piper betle* Local name- Pan Family- Piperaceae

Medicinal uses:- Leaves if topically applied to the chest cure cough and asthma, and if applied to the breast arrest lactation. The roots are used in treating rheumatism.

Religious values:- Its leaves are used in all religious ceremonies and are regarded as a pleasure to Goddess Lakshmi (Goddess Of wealth).

19. *Clitoria ternatea* Local name- Aparajita Family- Fabaceae

Medicinal uses:- Roots are used in amnesia, burning sensation, inflammation, bronchitis, ulcers and fever.

Religious values:- The flowers are offered to Lord Shiva.

20. *Oryza sativa* Local name – Dhan Family – Poaceae

Medicinal uses:- Roots are useful in diabetes. The grains are useful in pulmonary consumption, diarrhea and colonopathy. Religious values:- In Hinduism used for offering to many gods and goddesses. The rice is also used to prepare kheer and offered to God.

### Discussion:-

From the present study information about 20 plant species of medico-religious plants under 17 families have been collected from Bargarh locality. The percentage of distribution of different habits have been represented by the pie chart. Most of the plant species of the study have been identified during the field visit by the informants through direct interviews. Informants were elders of the locality, traditional healers, medicinal plant vendors and Ayurvedic doctors. Most of the plants that are used as ethnomedicinal plants by the locality of Bargarh are of herbs category. Most of the plants that are used in traditional healing practices & religious practices are of cultivated varieties. Some ethnomedicinal plants under the study are well known to most people of the locality.

It was also found from the study that most common plant part used were leaves, roots, seeds, bark. Collection of all these essential parts threaten the local diversity & density of some essential wild medicinal plants as most of the people collect plant part of herb. There is a need of conservation of medicinal plants (Raghupati & Laxmi, 2001) [38]. It is also necessary to give importance to traditional knowledge of ethnomedicine (Chetan & Anup, 2009) [39]. In the present study it was found that from the collected data more than 50% of medicinal plants are available in each surveyed village. From the discussion with informants it was found that people have obtained the traditional knowledge of medicinal use from their ancestors. Some plants like *Ficus religiosa*, *Ocimum sanctum* are considered as holy plants and are worshiped by the local people.

### CONCLUSION :-

The present study having title "Study of some medico-religious plants in the tribal localities of Bargarh district, Odisha, India" deals with survey of medicinal plants, locally available, religious practices and documentation of traditional practices for the treatment of ailments. Information was collected from the oral and written interviews of the local informants of Bargarh locality. In this study informants include senior elders, traditional healers called medicine men and vendors of medicinal plants parts of daily market of Bargarh district. Information of twenty plants of the seventeen families were documented. The documented information includes scientific name, vernacular name, habit, family name, habit, plant part used, medicinal uses and religious uses of plants. From the study it was found that the local people of Bargarh are using seeds, fruit, bark & leaves of different medicinal plants in order to prepare herbal medicine for various diseases. The people use different methods of application of medicinal plants. Decoction process is the most commonly used method of ailments treatments. Some people also use powder form of roots, bark & rhizomes and also the leaves and apply on the skin surface to treat various problems like sun burn, cuts, fire burn etc. From the study it was found that around 80% interviewed people were the direct users of medicinal plants. The knowledge of methods of preparation and application of herbal medicine was inherited from their previous generation. The inhabitants of

the study area have rich of traditional knowledge of ethnomedicinal use. But this knowledge is limited to less than 50% of the local people. In this manner traditional knowledge is being suppressed in the society day by day due to modernization. Hence, we can conclude that there is a great need of conservation of medicinal plants and traditional knowledge on plants. The study area of presented work is rich in large diversity of herbs and shrubs. Gandhamardan Hill is present in Bargarh district which has the great diversity of various medicinal plants. Hence Gandhamardhan hill is also called medicinal hub of Odisha. People also collect medicinal plant parts from this locality. Most plants are used for the treatment of common diseases like cold, fever, hair loss, cough, skin disease etc. Hence it is very much important to pay attention to the proper survey and discovery of more and more useful plants in this area.

**Comment [MF3]:** Are there studies on the doses used and cases of poisoning from high doses? Please mention it

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**Comment [MF4]:** References need updating

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**Comment [MF5]:** Year?

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