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## Ethnobotanical studies of *Madhuca longifolia* (L.) J.F. Macbr. from Western Odisha, India

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### Abstract

Butter tree *Madhuca longifolia* (L.) J.F. Macbr. Locally known as *Mahul* is a boon for the poor people of Western Odisha. It is a plant well known for its medicinal and economic value. It is widely used by the local people of Western Odisha (India) as food and medicine. It also serves as a source of income for tribals and other rural people in Western Odisha. The *Mahul* tree plays an important role in social and religious life of tribals and some other non-tribals. It occurs in forests, non-forest areas and suburbs of villages. The present paper seeks to provide Ethnobotanical, economic and food value as well as social and religious importance of this plant species.

**Keywords:** Western Odisha, Ethnobotanical, *Madhuca longifolia*, medicinal plant, religious importance

### Introduction

Odisha is an important state in eastern part of India lying between 17° 49' and 23 ° 34' N and 81° 29' and 87° 29' E. Its topography, climate and rainfall are quite favourable for rich vegetation. The state occupies second highest position in tribal population in India (census, 2011). The state has 30 districts, out of which ten districts (Bargarh, Bolangir, Boudh, Deogarh, Jharsuguda, Kalahandi, Nuapada, Sambalpur, Subarnapur and Sundargarh) lying between 19° 10' to 22° 42' N and 82° 30' to 85° 22' E in western part of the state are dominated by tribal groups such as *Kondh*, *Gond*, *Binjhal*, *Sahanra (Saora)*, *Munda*, *Kisan*, *Kharia*, *Bhuiyan*, *Oran*, *Mirdha*, *Binjhia*, *Dal*, *Savar*, *Lodha*, *Bhotoda* and *Parja*.

The Western Odisha is well known for its simple and honest people, folk music, dance and festivals, art and culture. It is surrounded by abundant beauty of nature, mountains and fountains, rich natural resources and dense forests. People of Odisha mostly depend on agriculture, and most importantly, Western Odisha is the main region for the production of rice. This part of Odisha is also well known for cultivation of several crops like paddy, sugarcane, maize, cotton, gram, groundnut and various types of vegetables. Besides agriculture the tribals and rural people residing in and around the forests adopt the shifting cultivation known as *dangara chasa*. The income from such type of agriculture is inadequate to meet their social and economic needs. Therefore, they look for economic sustenance from other sources such as the plants around their habitat and forests.

*Madhuca longifolia* (L.) J.F. Macbr. is one of those plants which occupy novel space in the ethnic as well as economical life of the traditional people [1]. The present communication records the traditional uses of *Madhuca longifolia* having a multifarious use with regards to social, religious and medicinal value. *Madhuca longifolia* is a large deciduous tree growing widely distributed throughout the state. It is a wild species which belongs to family Sapotaceae and it is a self-propagated plant in the forest and village area. It is a useful and valuable plant, which has an important role in the economy of that particular area where it is found. The species is used variously in the tribal as well as rural areas. It is a plant of social and religious interest. In Western Odisha the plant is worshipped by the tribals as well as by the people of some caste in urban areas during different rituals. Locally the plant is well known as *Mahul*, in Odia it is called *Mahula*, in English it is called *Butter tree*, in Sanskrit it called *Madhuka* and in Hindi it is called *Mahua*.

### Brief description of the plant

It is a large, deciduous tree, branch lets pubescent. Leaves elliptic, acuminate, coriaceous, clustered at the ends of the branches, petioles slender.

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Flowers pale yellow and fleshy appearing in dense cluster near the ends of the branches; calyx tube ovate, rusty tomentose; corolla tubular, fleshy pale yellow, aromatic and caducous. Fruit berries, ovoid, tomentose, yellow when ripe; seed ellipsoid, light brown. Flowering: February to April. Fruiting: May to July.

### Distribution

*Mahua* (*Madhuca* sp.) is a deciduous tree native to the tropical rain forest of the Asian and Australian countries [2, 3]. In Asia it finds its origin in India, Sri Lanka, Myanmar and Nepal [4]. It has been naturalized in different parts of Orissa (Odisha), West Bengal, Rajasthan, Maharashtra, Madhya Pradesh and Karnataka [5]. Andhra Pradesh, Gujarat, Chhattisgarh, Jharkhand, Bihar and Uttar Pradesh [4].

### Materials and Methods

Several field trips were conducted in different areas of Western Odisha to record various aspects of ethnobotanical information of this plant. The information was recorded from local *Vaidyas*, *Kabirajs*, *Jhankar/Desari* (village priest), elderly persons, *Gountia* (village head) and farmers having knowledge about herbal medicines in different tribal and non-tribal areas through interviews and discussions. Besides, the information was verified with available literatures [6-26]. The plant species was identified and confirmed with some regional flora books [27, 28].

### Ethnobotanical uses

#### As Medicine

- Infantile diarrhoea: Stem bark paste is applied in the annus of infants to cure infantile diarrhoea, locally called as *Churna*.
- Acne: Stem bark paste is applied on acne.
- Diarrhoea, dysentery and cough: Flowers are boiled by distillation and country liquor locally known as *Mahuli mada* is prepared. Flowers decoction (5-10 ml) is taken twice daily to cure diarrhoea, dysentery and cough.
- Leucorrhoea: Equal amount of flower powder of the plant, triphala (fruit of *Phyllanthus emblica*, *Terminalia bellirica* and *Terminalia chebula*) powder and root powder of *Cyperus rotundus* are mixed together. The powder (3-5g) is taken twice daily.
- Body pain: Seed oil is massaged over the affected part to get relief from body pain.

#### As food and fodder

- Flower is locally called as *Kuchi*. The tribals preserve the dried flowers called put and use it as food during rainy season.
- Dry flowers of the plant, fried seeds of *Sesamum indicum* and seeds of *Macrotyloma uniflorum* are boiled together to prepare a type curry called *Latha*.
- Dry flowers of the plant, seeds of *Vicia faba*, Seeds of *Lablab purpureus* and seeds of *Macrotyloma uniflorum* are cooked together and used as a curry.
- Dry flowers of the plant and seed powder of *Tamarindus indicus* are cooked together and used as food.
- Flowers are dried, washed thoroughly and are cooked together with molasses to prepare a delicious food called *kanko*.
- Fruit is locally called as Tol. The epicarp of the fruit is used as food. Tol with other leafy vegetables are cooked together and used as curry. Fruit is also a very good fodder for cattle.
- Oil extracted from the seeds is called as *Duri tel* or *Tol tel*. Oil is edible and used to lighten wicks.

### Rituals and festivals

- The tribals (*Binjhal*, *Sahanra (Saora)*, *Gond*, *Munda*, *Savar*, and *Bhatra*) and some non-tribals like *Kulta* place a twig of Mahul at the altar of deities as social customs during their marriage ceremony.
- It is also a ritual of *Kulta* caste people that those who are outcaste for some reason are reintroduced to their original caste (*Kulta*) under this tree of *Mahul*.
- *Nua-khai* or *Nabanna* is an important traditional festival of western Odisha, during which the newly harvested paddy is offered to the deity first and then food prepared from this is consumed with all members of the family. *Mahul tree* is considered to be sacred and for that reason its leaves are used for preparation of plates and bowls and food served on such plates during *Nua-khai*.
- *Kuchi* (flower) is offered to the deities during *Phagun puni* or *Dola Purnima* or *Basant Utsav* which is celebrated in the month of March.

### Myths related to this tree

- Planting a new *Mahul* plant or sowing its seeds is believed to be inauspicious by the tribals and some other non-tribal people in this locality, as it is believed that plantation of this plant causes leprosy.
- A long and narrow wooden pillar of this plant is placed in the cowshed and worshipped by lighting a jaw stick, in the believe that it would to protect the domestic animals against evil spirits.

### Conclusion

The present communication records the traditional uses of *Madhuca longifolia* having a multifarious use with regards to social, religious and medicinal value. *Mahul* is a large deciduous tree growing widely under dry tropical and sub-tropical climatic conditions. It is an emblematic tree of the forest of Central India and is also an important tree for poor, greatly valued for its flowers and seed. The tree has religious and aesthetic value in the tribal culture. *Madhuca longifolia* tree is a boon for the poor people of Western Odisha due to its multifarious uses. The people worship the plant and they have myths about this species. The plant is a source of income for the tribals and other rural people in Western Odisha. It is observed during the survey that bran and husks of paddy is a common food of cows, bullocks and buffalos of the farmers. But when these fodders are mixed with a handful of stale flowers of *Mahul*, it makes the fodder more delectable for them.

From the foregoing observations it is clear that it is a plant with several religious, social and economic implications having great importance for the people of western Odisha. Hence care must be taken to preserve this plant species.

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