

DYNAMICS OF AQUATIC ETHNOMEDICINAL PLANTS OF JHARKHAND

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Abstract

From the time immemorial the plants have been utilized, praised and worshipped by human beings. Ethnobotany deals with direct relationship between man and plants. The term “Ethnobotany” was coined by Harshberger, an eminent American Economic Botanist in 1896. Schultes (1962) has defined Ethnobotany “as the study of the relationship which exists between people of primitive societies and their plant environment”. Necessity is the mother of invention. This dictum fully applies to the rural or tribal societies which have to discover solutions to almost all their needs and problems from the natural resources around them. The plants used by them for a variety of purposes may not always be the most suited, but they are the best available locally. They use the plants for various purposes such as foods, medicines, house construction, agricultural tools, thatching, fodder, beads, coarse fiber, body ornamentation and other miscellaneous purposes. The aquatic flora of India is very rich. The total number of species of higher and lower plants is estimated to be about 45,000 (higher plants 15,000.) There are over 400 different tribal and other ethnic groups in India. The tribal constitutes about 7.5 percent of India’s population. A part from the tribal groups many other forest dwellers and rural people also possess unique knowledge about plants. Some such folklore and tradition has survived also among urban societies. In the present study emphasis has been given aquatic ethnomedicinal plants of Jharkhand state along with their uses.

Key Words: Ethnobotany, Ethnomedicinal, Aquatic flora, Tribals, Jharkhand,

Introduction: In the organic world man is the highest evolved organism. Enabled with the superior intelligence to a self sufficient and independent existence, he has made himself more dependent on other organism. Although a number of mineral and animal product contribute to his welfare but it is the plant that has been considered to be the most essential part of human beings. Human beings are using plants as a drug to cure diseases and relieve from suffering since ancient times, in which aquatic plants played a very important role. Almost all the Homoeopathic, Ayurvedic and a large number of Allopathic medicines are obtained from the plants. Jharkhand is number one state in mineral resources in India. It has rich variety of flora, also popularly known as Vananchal. Forests accounts nearly 1/3 of the geographical area of Jharkhand. It has a very large percentage of tribal population but the economic condition of people of Jharkhand is very low, so most of them are not in a position to bear the costly allopathic medicine prescribe by the M.B.B.S Doctors. The village of Jharkhand is dominated by traditional tribal ojhas and Vaidyas or Kabirajs. According to WHO, over 80% of the world population rely on traditional system of medicine largely based on plants. The tribals and kabirajs of Jharkhand utilize a large variety of locally available plant species as a herbal medicine in curing various diseases. Some of the herbal plants they commonly used are aquatic plants.

Materials and Methods: To collect the plant materials from field study on the basis of authentic information gathered from the Santhals, Mundas and other tribals of districts of Jharkhand. The plants, their use as ethnomedicinal system, plant parts used, mode of preparation, locality of use and the particular group of tribals using the medicines were studied. Plant specimens were collected and documented in regular field visits conducted from 2007-2011. The places of visit were the tribal villages of the Jharkhand. The villages were visited in different seasons (summer, monsoon and winter) to avail most of the plant resources in their flowering conditions. In the actual method of field studies, informants from different tribes who are familiar with the plants and their use by the members of their respective communities were selected by carefully taken interviews. Questions, problems and suggestions were put to them regarding the use of plants and their products in folk medicine and other uses. Mounted herbarium specimens known to grow in this area were placed to them

and questions were asked on their usefulness. These were subsequently verified by taking them to field to identify plants on the basis of local tribal names previously noted from them. Local names and the areas were noted. Prior permission was taken from the informants for recording of the information. Photographs were taken of the plants and their uses. A large number of plants were taken to prepare herbarium sheets.

Results and Discussion: During the course of investigation some common potentially aquatic ethnomedicinal plants were collected from Jharkhand state. Most common plants with their therapeutic use are listed below.

1. *Ludwigia perennis*, L; *parviflora*, Roxb.: Perennial herbs, rooted with floating leaves, rosette, spindle shaped, spongy leaves with minute stipules at the base, oblong, obovate, yellow glands at the leaf base. Flowers large showy, White with yellow centre, solitary axillary, pentamerous. Petals obovate. Stamens 10, equal to the number of sepals, anthers yellow, capsules cylindrical, seeds smooth. Commonly found in ditches and ponds. (Jamtara, Barakar Dam 204)

Flowers and Fruits: October - December.

Local Name : Arker (Santhali).

Family : Onagraceae

Uses: It is used in treatment of parsauti fever (After delivery patient feel cold even in summer). Small amount of root of *Ludwigia perennis* and *Achyranthes aspera* is boiled in water. This water is taken thrice a day in empty stomach. The leaf is used in headache, ear pain and sores.

2. *Nelumbo nucifera*, Gaertn.: An Aquatic, large perennial herbs, creeping under water, rhizomatous. Leaves large upto 70cm in diam., orbicular, centrally peltate, entire, few leaves raised above water surface. Flowers white or pinkish red. Carpels numerous, sunk on the large spongy torus. Fruits nutlets. Seeds arillate. Commonly found in ponds.(DC Bandh, Jamtara - 201).

Flowers and Fruits: June - September

Local Name : Kamal Phool , Poddophool (Santhali).

Family : Nelumbonaceae

Uses: The flower is used as cardiac medicine, liver trouble, diarrhoea, cholera and in fever. Seeds are used in skin related problems and as a tonic. Dried rhizome powder is very useful in piles. Fruit, rhizome and seeds are edible.

3. *Oxalis corniculata*, Linn.: Prostrate or sub-erect, trailing herbs, rooting at the nodes. Leaves trifoliate, leaflets obovate, sparsely hairy. Stipules oblong, united to the base of the petioles, Peduncles about 2 flowered, shorter than the leaves, Pedicels reflexed in fruit. Flowers yellow, .4 -.5 " diam. Capsules narrowly oblong. A common weed in gardens. Oftenly found in shallow ponds and marshy places (Hutar 318).

Flowers and Fruits: Throughout the year.

Local Name: Tinpatta, Amboti (Mundari), Chatom arak (Santhali).

Family : Oxalidaceae

Uses: It has huge medicinal properties. Leaves contain Vitamin and having antiseptic properties and astringent. Plants decoction is used to cure dyspepsia, piles, anemia and tympanis.

4. *Ammania baccifera*, Linn.: Annual, erect ,glabrous, 5 - 26 cm in high, herbs, stems quadrangular. Leaves 5 - 6 x 1.5 cm, linear or linear oblong, alternate, opposite below. Flowers deep red, in dense axillary cym. Sepals 4, petals 0, stamens 4. Capsule depressed - globose, red to reddish brown when mature. Seeds plano convex, red. Found in marshy places. (Raja Bandh ,silli -618).

Flowers and Fruits : July - December.

Local Name : : Dad-Mari (Santhali), Agia (Mundari).

Family : : Lythraceae

Uses: Leaves are used against rheumatism, skin diseases, ringworm, pain and fever. It is also used to reduce sexual libido of animals.

5. Centella asiatica, Linn.: Creeping herbs, with long stolon, rooting at the nodes. Leaves reniform, orbicular, crenate, petioles long. Flowers white or pinkish white in compound umbels. Bracteoles linear. Fruits globose with the 4 secondary ridges on each coccus. Seeds 2, brown, oblong. Commonly found in waste moist places. (Sripalli-396).

Flowers & Fruits: Throughout the year.

Local Name: Thankuni, Thalkuri (Santhali), Vallara (Mundari), Brahmi.

Family: Umbelliferae /Apiaceae

Uses: It has very high medicinal values. Decoction of *C. asiatica* is used as tonic in skin diseases, blood related diseases and in nervousness. Leaf juice is used in stomach trouble, amoebic dysenter complain, diarrhoea, eye complain, fever, leprosy, postnatal tonic, urine complain, gastric disorder etc. It also improve memory and used as a brain tonic.

6. Oldenlandia diffusa, Roxb.: Annual glabrous herbs, 8-22 cm in height, stem branches tetragonous, rooting at nodes. Leaves 2.1 - 2.5 cm long, acute, glabrous, sessile. Flowers white, 3.5 mm long. Pedicels solitary, very short, often not exceeding flower. Sepals unequal, ovate, stamens and styles exerted. Capsules 3mm in diameter, subglobose. Commonly found in damp and aquatic conditions. (Changru 201).

Flowers and Fruits: July - November

Local name : Ban-jhalukia (Mundari), Man-jaluk (Santhali).

Family : Rubiaceae

Uses: Juice of this plant is used in biliousness fever and gonorrhoea. The plant is used as vegetable.

7. Eclipta alba, (Linn.) Hassk.: Prostrate or ascending annual herbs, often rooting at nodes. stems hairy. Leaves opposite, sessile, oblong-lanceolate or linear lanceolate, entire or serrate, heads white, 1-3 together at maturity, pappus usually absent. Very common, found in moist places and along drains. (Karra 279).

Flowers & Fruits: Throughout the year.

Local Name: Bhengraj, Kesut (Mundari), Hatu kesari Santhali).

Family: Asteraceae

Uses: It is used as a tonic for treatment in hepatic problem, spleen enlargement. Plant juice is used for treatment of jaundice, cough and cold of infants. Leaves are beneficial in scorpion bite.

8. Nymphoides hydrophylla: Rooted with floating leaves, rhizomatous herbs. Leaves alternate, sub-orbicular, deeply cordate, 5-12x6-14cm, purplish beneath and green upper side. Flower white, sweet scented, clustered at the lower region of petioles. Corolla sub-rotate, a ring of white hairs at the yellow throat. Capsules sub-globose. Seeds numerous, pale brown, attached in two opposite group. Commonly found in pond and ditches. (Pande Bandh, Pandedih 153).

Flowers and Fruits: Throughout the year.

Local Name : Pan Chuli (Santhali), Baan (Mundari).

Family : Menyanthaceae.

Uses: The stalk and leaf juice are mixed with oil and applied to ulcers and bites. The decoction is used as antiseptic lotion to wash parasitic skin infection.

9. Limnophila indica, (Linn.), Druce.: Erect, much branched, aquatic herbs, rooting from the longer nodes. Leaves 3-nerved, punctate, heterophyllous, emergent leaves serrucate to lobed, submerged dissected. Flowers solitary axillary, sub-sessile, light pink or purple. Stamens 4. Capsules globose or sub-globose. Commonly found in shallow ponds, ditches and paddy fields. (Biju Para -623)

Flowers and Fruits: Throughout the year.

Local Name : Hemcha (Santhali), Turati (Mundari).

Family : Scrophulariaceae

Uses: It is used as an antiseptic. The juice of the plant is rubbed over body in persistent fever. The juice of the leaf mixed with coconut oil is used in encephalitis.

10. *Hydrolea zeylanica*, (Linn.): Erect or decumbent, annual herbs. Stems often much branched, succulent. Leaves lanceolate or oblong-lanceolate, 1-6cm. Long. Flowers blue, terminal or axillary racemes. Calyx glandular, pubescent. Anthers segittate. Capsules ovoid-ellipsoid, 17” long septifragal. Seeds numerous, irregular rough. Commonly found in marshy ground and rice –fields. (Gawal Pipla 206).

Flowers and Fruits: November - February

Local Name : Las chura (Santhali).

Family : Hydrophyllaceae

Uses: The leaf pest is used as an antiseptic cream. The plant is used in treatment of ulcer and constipation.

Conclusion: Ethnobotany deals with total direct relationship between man and plants. The plants used for various purposes such as foods, fodder, medicines, house construction, agricultural tools, thatching, beads, coarse fibre, body ornamentation and other miscellaneous purposes. There has been resurgence of interest in ethnobotany all over the world during the last few decades. Jharkhand is one of the notable abode of the tribal populace. It is an irrefutable fact that nature has made it one of the richest regions of the earth. Among its various natural endowments vegetation is the most essential resource for mankind. The socio-economic status and the culture of the tribal is woven around the forest. A number of plants are being used by the tribals in some form or other for the betterment of their life. Haines (1921-25) while preparing the botanical account of the state has made occasional references regarding the uses of the plants by the native people. Hoffmann (1950) in his “Encyclopaedia Mundarica” and Bressers (1951) in his ‘Botany of Ranchi District’ have mentioned the various plants uses by the tribals of Chotanagpur. Ghosh(1971) in his Floristic study of Ranchi District and Sahu (1986) in his Ethnomedicobotanical studies of some plants of Santhal Pargana and Chotanagpur have mentioned various uses of plants. During the research work a number of aquatic species were explored which has immense potential to cure the various diseases and used by the tribals with great believes. In conclusion it may be suggested that tribals of Jharkhand have basic as well as practical knowledge of plants passed on through generation from their folk lore, folk tales and religious customs. It is therefore recommended that thorough phytochemical test and pharmaceutical properties should be taken into consideration of above plants so as to ascertain actual medicinal properties of each plant.

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