

## Traditional botanical wisdom of *Birhore* tribes of Jharkhand

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The state, Jharkhand, as the name suggests, is rich in biodiversity and their traditional usage. *Birhore*, a dwindling tribe of Jharkhand is the custodian of traditional botanical knowledge. Their day to day life is dependent solely on forest. Their ways of utilizing plants as food, medicine and for other house hold purposes are not only novel but scientific also. Because of various anthropogenic as well as natural reasons, the population of *Birhores* is declining rapidly. It is, therefore, urgent to document their knowledge. Conservation and proper management of local vegetation is required for sustainable existence of the tribe. The paper deals with the plants used by this tribe for various purposes.

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*Birhore* is one of the most primitive tribes of Jharkhand and their population is decreasing fast because of genetic and socio-economic reasons<sup>1</sup>. Members of the tribe are presently confined to some pockets of Hazaribag, Koderma, Ramgarh and Dhanbad districts of Jharkhand. Their number at present is nearly 4,600, the maximum (1,872) in Hazaribag district. In Dhanbad district, they live (143) in Chalkari village of Topchanchi block. *Birhores* are basically nomadic, hunters and food collectors. It is obvious therefore that they depend entirely on forest for their day to day requirement and their knowledge of various plants is noteworthy. On the basis of their life style, there are two groups of *Birhore*. One, *Uthlu*, who are hunters, food gatherers and rope making is their main occupation. They utilize plants based raw materials for their own use as well as for earning. The second group is known as *Janghi*, who are relatively advanced and have started settling in forest areas. They practice traditional system of agriculture. Anthropologists recognize one intermediate transitional semi nomadic group-the *Basulu*. The *Birhores* have developed a high degree of co-existence with forest. Their knowledge regarding plants is not only confined to their collection and use.

They know about their specific characteristics (toxicity palatability), their spatial distribution, seasonal availability and ecological relationship, etc. Unfortunately, documentation of traditional ethnobotanical knowledge has not been done properly. The urgency of such study is required for several reasons. The quality of information acquired by *Birhores* is very high. Their knowledge is not confined to medicine only. Their information regarding some of the under exploited protein rich plants, as supplementary food, is highly significant. They utilize some other plants for rope and basket making, etc. Such information need to be authenticated and amalgamated in mainstream. Keeping dwindling population of *Birhores* in mind their knowledge must be conserved. In present era of globalization, traditional ethnobotanical information of the tribe is at stake of bio-piracy. The investigation has been undertaken in light of above mentioned facts<sup>2-4</sup>.

### Methodology

Ethnobotanical study attempts to underline intimate relationship between plants and ethnic tribes like *Birhores*<sup>5</sup>. Topchanchi area of Dhanbad district and settlement of *Birhores* in Hazaribag district were regularly visited during 2006-2007. *Pahan*, the priest

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Table 1—Ethnobotanical uses by *Birhore* tribes of Jharkhand

Plant name/ Family	Local name	Uses
<i>Abrus precatorius</i> L. Leguminosae	<i>Jhagra He</i> <i>Baha, Ratti</i>	Root paste is used in leucorrhoea and other menstrual disorders. The paste is also used as antiseptic and is applied on forehead to get relief from headache. Decoction of seeds is used in stomach trouble.
<i>Adhatoda vasica</i> Nees Acanthaceae	<i>Bakas Pata,</i> <i>Bakas,</i>	Leaves soaked in water for the whole night is given empty stomach in the morning to cure dry cough.
<i>Aegles marmilos</i> Corr. Rutaceae	<i>Sinjo,</i> <i>Bel</i>	Ripen fruit is used to make drinks during summer; unripe fruits heated in fire and the fruit pulp is applied on bamboo made baskets to make it impervious to water. If it is used to store food grains, it is coated with fresh cow dung.
<i>Anacardium occidentale</i> Linn. Anacardiaceae	<i>Soso,</i> <i>Bhelwa</i>	Ripen fruits are eaten. Oil obtained from seeds is applied on wound as antiseptic; oil is specially applied on wound caused by thorn. Fruits are pricked and the woolly liquid is applied on forehead during persistent headache. <i>Birhores</i> keep leaves of the plant at their main entrance to check the entry of evil power. Tribals of Jharkhand still associate various diseases with evil spirit; <i>Bhelwa</i> is known for its antiseptic properties and checks epidemics.
<i>Arundinella setosa</i> Trin. Graminae	<i>Jono,</i> <i>Jharu</i>	The inflorescence of the plant is used to prepare brooms to sweep floors. The Jain pilgrims and the tribal, take it to their homes as a mark of blessings. They believe that it keeps evil spirits away; the sick children are swept with it.
<i>Asparagus racemosus</i> Willd. Liliaceae	<i>Satmuli,</i> <i>Satmuli</i>	Root paste is used twice a day for three days to cure blood dysentery. Decoction of the root is used in urinary disease.
<i>Bauhinia vahlii</i> Wight & Arn. Papilionaceae	<i>Lama Jang,</i> <i>Chilhir</i>	Fiber obtained from bark is used to make rope which is the main occupation of the tribe. Roasted seed is eaten, which is a good source of protein. Leaves are used for making baskets. Leaves are also utilized to make umbrella.
<i>Butea monosperma</i> kuntze Papilionaceae	<i>Muruk Dadu,</i> <i>Palash</i>	Leaves are used to make <i>kumbha</i> (the traditional home of <i>Birhores</i> ), the leaf plates and saucers ( <i>pattal and dona</i> ).
<i>Byttneria herbacea</i> Roxb. Sterculiaceae	<i>Kamraj,</i> <i>Kamraj</i>	Leaf paste is used to treat leucorrhoea. Root powdered is externally applied on swollen legs.
<i>Cissampelos pareira</i> L. Memispermaceae	<i>Tejraj,</i> <i>Tejraj,</i>	Roots paste is given once a day in stomach pain, loose motion and malarial fever.
<i>Cordia macleodii</i> Hook. T. thoms. Boraginaceae	<i>Bhojraj</i> <i>Bhojraj</i>	Fresh leaves are put on forehead for treating high fever. Powdered fruit is used to cure dysentery.
<i>Croton oblongifolia</i> Roxb. Euphorbiaceae	<i>Putari,</i> <i>Pootar</i>	Root extract mixed in oil is used as sunscreen. The plant sap is used as anti-eczema. The dried stem is rubbed to produce fire from wood. Leaves are used as a substitute of common salt ( <i>namak</i> ).
<i>Cryptolepis buchanani</i> Roem & Schutt. Asclepiadaceae	<i>Dudhalata,</i> <i>Dudhalata</i>	Leaf paste is used in eczema; root paste is used to relieve stomach pain. The creeper is used to tie wood and other materials; in binding fences and gates.
<i>Dendrophthoe falcta</i> Ettingshausen Loranthaceae	<i>Tiril Banda,</i> <i>Banda</i>	Leaf paste is applied on skin diseases. Dried plant powder is taken by women as contraceptive.
<i>Dioscorea bulbifera</i> Linn. Dioscoreaceae	<i>Haser,</i> <i>Aadu</i>	Plant is the good source of carbohydrate. It is a jungle food for the hunters. It is a substitute of potato for downtrodden.
<i>Gnaphalium luteo-album</i> L. Asteraceae	<i>Doodhraj,</i> <i>Doodhraj</i>	Plant decoction is given in complains associated with pregnancy, such as constipation, body pain, weakness and insomnia.
<i>Hemidesmus indicus</i> R.Br. Asclepiadaceae	<i>Anantmul,</i> <i>Anantmul</i>	Used to cure weakness, cough and cold, as a medicine to control blood pressure and diabetes related problems.
<i>Jatropha curcas</i> Linn. Euphorbiaceae	<i>Huding Bhendra,</i> <i>Bhendra</i>	The stem twig is chewed as <i>datun</i> to cure pyorrhoea and problem of gums and teeth.

(Contd)

Table 1—Ethnobotanical uses by *Birhore* tribes of Jharkhand—Contd

Plant name/ Family	Local name	Uses
<i>Litsea monopetalac</i> Pers. Lauraceae	<i>Marang Ponga,</i> <i>Bada Ponga</i>	Cooled <i>ponga</i> bark decoction is given to cure abscess. Powder leaf is applied on bruise. Dried plant paste with mustard oil is applied on wound and ulcer of cattle's.
<i>Lerilla ocimodies</i> Labiatae	<i>Tulsi Kana</i> <i>Bantulsi</i>	The aroma produced keeps away the evil spirit and snakes. It is also used to prepare fences around the home.
<i>Aisandra butyracea</i> Bachni Sapotaceae	<i>Madkom,</i> <i>Mahua</i>	Fruits are fermented to produce alcoholic beverage having aesthetic value is used in many rituals.
<i>Mallotus roxburghianus</i> Lam Euphorbiaceae	<i>Garki Jon,</i> <i>Rori</i>	Flowers and fruits are used as dye to colour clothes and bamboo articles. Plant decoction is effective on tape worms. Seed are used in blisters and ulcers. Leaves are utilized to thatch roof.
<i>Moringa indica</i> Moringaceae	<i>Munga Aada,</i> <i>Sainjna</i>	Plant bark decoction is spread inside home for prevention and removal of snakes.
<i>Nicotiana tabacum</i> Solanaceae	<i>Tamaku Kana</i> <i>Khaini</i>	The tribals chew a little of <i>khaini</i> and paste it over the scorpion bite.
<i>Pereira tuberosa</i> DC. Fabaceae	<i>Patol Kohada,</i> <i>Patal Kumra</i>	Cooled tuber decoction is administered in urinary troubles. Tuber and asafoetida ( <i>hing</i> ) paste is used on boil, ulcer and burn. Plant parts are good food supplement for cattle.
<i>Smilax zeylanica</i> Roxb. Liliaceae	<i>Ramdatun,</i> <i>Raipan</i>	Stem is used to clean tooth and is an anti-pyorrhoea agent. Root decoction is used to cure boils, piles; powdered root is taken with milk in case of leucorrhoea and spermatorrhoea.
<i>Streblus asper</i> Lour. Moraceae	<i>Sehra,</i> <i>Sehda</i>	Leaves are used to increase density of milk and to prepare curd in a very short period. The milk thus becomes easily digestible and more suitable for children. Decoction of bark is used for various types of stomach ailments.
<i>Sterculia urens</i> Roxb. Sterculiaceae	<i>Talhej Dadu,</i> <i>Telhar</i>	Gum obtained from plant is soaked in water over night and eaten as food supplement. Paste of gum is an effective medicine for joints pain and muscular strain. Decoction of bark is also used to ease burn of stomach and urinary tract.
<i>Terminalia chebula</i> Retz. Combretaceae	<i>Rola Jon,</i> <i>Harra</i>	Dried fruit powder is used in constipation. Piece of fruit is kept in mouth and chewed to release congestion of lung. Decoction of fruit is cooled and used to wash eyes.
<i>Vitex negundo</i> L. Vitaceae	<i>Sinduar,</i> <i>Sindwar</i>	Bark is boiled in milk and is taken to cure bodyache and muscular pain. Dried leaves are burnt and the fume repels mosquitoes. Fresh leaves are rubbed and the odour is inhaled to cure headache.

of the tribe known to be the wisest person of the community, was asked about plants they use for various purposes. Medicine men were contacted for their knowledge regarding medicinal plants. *Birhore* women were enquired about various plants, they use for food and nourishments. Information gathered from different locations of the tribe were compared and cross-verified. Plants were identified with the help of available flora and their vernacular names were verified<sup>6-8</sup>.

## Results and Discussion

In the enumeration, data on species of plants used for various purposes are presented (Table 1). The description includes plant names, vernacular names used by *Birhores*, family and usage of plants.

*Birhores* are custodians of vast traditional knowledge and their wisdom with respect to plants is noteworthy. Their day to day need is totally dependent on forest and they obtain food, medicine, shelter and other materials from plants. It is unfortunate, however, that their population is decreasing continuously. Documentation of their herbal knowledge is essential. Medicinal use of some of the plants is typical and relatively new and their further scientific confirmation is required. The tribe has been isolated from outer world and their economic condition is also critical. So, they have developed novel practice of using some unexploited plants for food and nutrition. This aspect is equally remarkable and proper research of such plants may open new vistas in the area of nutrition. It is, therefore, urgent to take every possible step to

conserve plants used by *Birhores*<sup>9</sup>. Natural habitat of *Birhores* is presently the area of rapid industrialization and mining and at certain places hit by Naxals. This anthropogenic interference is further taking a heavy toll on traditional medicinal proper documentation of traditional herbal knowledge is the only protective measure<sup>10-12</sup>. European Union has introduced a new legislation called, *Traditional Herbal Medicinal Product Directive* for fast tract registration of traditional plant products. There is an urgent need to secure traditional knowledge of *Birhores* and economically make them viable through proper scientific research.

### Conclusion

History of man-disease confrontation is as old as human civilization and plants have been used by man to combat ill effect of diseases since time immemorial. India is known for medical pluralism and tribal wisdom about medicinal plants has gained much attention during recent past. The information presented about the herbal therapy used by *Birhores* is just representative documentation of traditional knowledge of this fast dwindling tribe<sup>13-15</sup>. The study reveals that some of the usage of commonly available plants novel and further investigation on this line is urgently needed. Keeping number and stalirs of *Birhore* in mind, a detailed study of their traditional wisdom in relation to health problem, agriculture and food habit is urgently needed.

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### References

- 1 Sahu C, *Birhore Tribe-Dimension and Development*, (Sree Publication, New Delhi), 2004.
- 2 Sahu C, *Tribal Culture and Identity*, (Classical Publication, New Delhi), 2001.
- 3 Sahu C, *Aspects of Tribal Studies*, (Classical Publication, New Delhi), 2001.
- 4 Varma SK & Pandey AK, Ethnobotanical notes on certain medicinal plants uses by tribals of Bihar, *J Econ Tax Bot*, 14 (2) 1990 329-333.
- 5 Cotton CM, *Ethnobotany: Principles and Applications*, (John Wiley and Sons, New York), 1996.
- 6 Haines HH, *The Botany of Bihar and Orissa*, Vol 3, (Botanical Survey of India, Calcutta), 1961.
- 7 Hembrum PP, Tribal medicine is Chotanagpur and Santhal Pargana of Bihar state, *Ethnobotany*, (3) (1991) 97-99.
- 8 Jain SK, *Dictionary of Indian Folk Medicine and Ethnobotany*, (Deep Publication, New Delhi), 1991, 135.
- 9 Kumar A & Pandey R, Tribals and the utility of the medicinal plants in their day to day lives in Santhal Pargana, Bihar, *Ecol Environ Cons*, 4 (1-2) (1998) 65.
- 10 Jain SK, Ethnobotanical aspect of Indian tropical ecosystem, In: *Tropical Ecosystem, Ecology and Management*, edited by Singh KP & Singh SS, (Wiley Eastern Ltd, New Delhi), 1992, 507.
- 11 Choudhary J, Standardization on Traditional Medicine, *Nat Bio*, 22 (3) (2003) 263- 265.
- 12 Anonymous, *National Policy on Traditional Medicine and Regulation of Herbal Medicine, Report of a Global Survey*, (WHO, Geneva), 2005, 368.
- 13 Mishara PK & Kumar D, Plant based antifertility agent used by tribal of Jharkhand, Int conf Recent Trends in Life Sciences, VBU, Hajaribag, Bihar, June 27-29, 2009.
- 14 Bablola KA, An examination of the usage of herbal contraceptive and abortifacients in Lagos, Nigeria, *Ethnobot Leaflet*, 13 (2009) 115-121.
- 15 Behera KK, Plants used for various disorders by tribals of Mayubhganj, Orissa, *Ethnobot Leaflet*, 10 (2006) 129-138.