

## STUDY OF PLANT BIODIVERSITY OF HAZARIBAG DISTRICT JHARKHAND INDIA AND ITS MEDICINAL USES

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### ABSTRACT

Jharkhand is rich in biodiversity of medicinal plants. The forest area is about 40% of the total area of Jharkhand. 32 tribal communities found in Jharkhand. They are used medicinal plants by traditional knowledge. Traditional medicinal practitioners known as vaidyas or kavirajas from the primary health care provider in rural Jharkhand. The objective of this present study was to conduct a value addition survey amongst tribal of Hazaribag and around the district of Jharkhand. Knowledge about to conserve these natural resources is very important. If all the people know about our natural resources & its important in our life by training or another sources than save it for value addition. If one sps save per people by conserve it for value addition than disease free nature obtained. Information on 95 plants sps was obtained which were used by tribal vaidyas to treat various ailments given the table 1. These medicinal plants belong to 95 genera and 51 families. All plants were grown or cultivated in home steads or fields as ornamental plant, shade giving plants ,timber yielding plants, home construction plants ,medicinal plants ,vegetable ,fruits etc. The various plant part used included whole plants, leaves ,stems,roots,tuber,barks,flower,fruits,&seeds. Traditional and ethnic knowledge generated from such leads has played most significant role in the discovery of novel product as well as newer ideas about conservation of natural resources. This paper deals the biodiversity of plant which is used by tribals in Hazaribag Jharkhand.

**Keyword:** Medicinal Plant, Traditional Knowledge

### INTRODUCTION

The knowledge of medicinal plants has mainly been gathered by the people in the form of tradition and experiences and inherited over the centuries to the future generation. It is extremely important to save this traditional knowledge of biological heritage and explore new resources. The district has rich biodiversity still in the natural form. The climatic conditions of this area support to the survival of flora and magnificent nature. About 10000 plant sps are traditionally utilized all over the country for health care food and other day to day material requirements. Traditional and ethnic knowledge generated from such leads has played most significant role in the discovery of novel product as well as newer ideas about conservation of natural resources.

A large number of studies have been conducted with respect to medicinal plants and their possible use by different sections of society. Ahmad and Din (1996) enumerated ethno botanical profile of Swat valley. Almagboul (1988) reported efficacy of some plants in treatment of bacterial diseases. Altschul (1970 and 1973) worked on medicinal plants having potentiality to treat various gynecological diseases. Report of Ambasta (1986) on common medicinal plants is valuable in underlining importance of plants for treatment of various diseases. Anyinam (1995) have critically analysed ecological aspect of some

important medicinal plants, with respect to their proper management for future use.

### MATERIALS AND METHODS

Vaidyas were interviewed with the help of semi-structured questionnaire and employing the guided field walk method were the information takes the observer on a guided tour and points out the various medicinal plants used by traditional knowledge and describe their uses. The field survey was planned in spring season and also in monsoon season when plants bloom and show extensive growth with the view of study their natural habitat and distribution. This in turn eased the process of identification of different plant species. The identification of plant material was carried out with the help of (Hains flora, 1925 ) The traditional knowledge about the plants was obtained through conversations and discussions with the learned people of the area regarding their local names plant parts used purpose of use and curative properties.

### Study Area

Hazaribag district fall between 23° 25` to 24° 48` north latitude and 84° 27` to 86° 34` east longitude. Its average elevation from sea level is 610 meter. Due to large forest cover (48%) and favorable environmental condition this district is rich in plant diversity.

## RESULTS AND DISCUSSION

Information on 95 plants sps was obtained. Which were used by tribal vaidyas to treat various ailments given the table below.

These plants belong to 95 genera and 51 families. All plants were grown or cultivated in home steads or fields as ornamental plant, shade

giving plants, timber yielding plants, home construction plants, medicinal plants, vegetable, fruits etc. The various plant parts used included whole plants, leaves, stems, roots, tuber, barks, flower, fruits and seed.

**Table 1: Medicinal plant & their parts used in different disease**

SL.N o.	Botanical name	Vernacular name	Family	Parts used	Diseases/ Uses
1	<i>Acacia nilotica Linn</i>	Babul	Mimosaceae	Bark, fruit	Urinogenital disease, mouthulcers
2	<i>Acalypha indica Linn</i>	Muktajuri	Euphorbiaceae	Whole plant	Expectorant, bronchitis, pneumonia, snake bites
3	<i>Adhotoda vasica Linn</i>	Sada basak	Acanthaceae	Whole plant	Bronchitis, cough, anemia, asthma, chest pain.
4	<i>Aegle marmelos Linn</i>	Bel	Rutaceae	Leaf, Root, fruit	Stomach troubles, intermittent fever, diarrhoea, blood dysentery.
5	<i>Achyranthes aspera Linn</i>	Katapatha	Amaranthaceae	Leaf, stem	Otorrhoea, wounds, injury.
6	<i>Ageratum conyzoid Linn</i>	Uchanti	Asteraceae	Leaf	Haircarelotion, nerve toni, dysentery, diarrhoea
7	<i>Alocasia indica</i>	Mankochu	Araceae	Leaf, tuber	Astringent, piles, constipation.
8	<i>Amaranthus tristis Trin</i>	Puishag	Amaranthaceae	Young stem, leaf	Anemia, eye troubles, blood purifier.
9	<i>Anthocephalus chinensis Wall</i>	Kadamb	Rubiaceae	Bark	Tonic.
10	<i>Andrographis paniculata Wall</i>	Kalmegh	Acanthaceae	Leaf	Asthma, bronchitis, antihelmithic, stomachic
11	<i>Argemone mexicama Linn</i>	Siyal kanta	Papveraceae	Leaf, seeds	Jaundice, expectorant, demulcent.
12	<i>Artabotrys hexapetalus Linn</i>	Katchampa	Annonaceae	Leaf	cholera
13	<i>Artocarpus heterophyllous Roxb</i>	Kathal	Moraceae	Fruit, root, latex, rachis.	Diarrhoea, glandular swelling.
14	<i>Artocarpus lakoocha Roxb</i>	Dephol	Moraceae	Bark	antiseptic
15	<i>Azadirachta indica, a. juss</i>	Neem	Meliaceae	Leaf, stem	Fever, skin disease, diabetes, liver troubles etc.
16	<i>Azolla pinnata R.Br</i>	Azolla	Azollaceae	Leaf	Tonic.
17	<i>Bacopa monnieri Linn</i>	Brahmisak	Scrophullariaceae	Whole plant	Nerve tonic, asthma, snake bite.
18	<i>Bauhinia variegata Linn</i>	Raktakanchan	Casalpinaceae	Bark, root	Leucorrhoea, carminative

19	<i>Bombax ceiba Linn</i>	Simul	Bombaceae	Flower	Snake bite, stimulant, aphrodisiac, astringent
20	<i>Bryophyllum pinnatum Roxb</i>	Patherkuchi	Crassulaceae	Leaf	Kidney stone, headache.
21	<i>Butea monosperma Kuntze</i>	Palas	Fabaceae	Leaf, bark, seed, latex	Antihelminthic, astringent, piles, tonic.
22	<i>Cajanus cajan Linn</i>	Arhar	Fabaceae	Leaf, seed	Jaundice, stomach disorder.
23	<i>Calotropis gigantea Linn</i>	Akanda	Asclepiadaceae	Leaf, stem, latex	Chest pain, eye troubles, skin diseases.
24	<i>Cannabis sativa Linn</i>	Ganja	Cannabinaceae	Leaf, flower	Diarrhoea, dysentery, narcotic.
25	<i>Capsicum annum Linn</i>	Mircha	Solanaceae	Fruit, leaf	Carminative, lumbago, rheumatism.
26	<i>Carica papaya Linn</i>	Papita	Caricaceae	Latex, fruit, root	Antihelminthic, dog bites, stomachic, diuretic.
27	<i>Cassia fistula Linn</i>	Amaltas	Caesalpinaceae	Bark, fruit, root	Chronic fever, ringworms, rheumatism.
28	<i>Centella asiatica Linn</i>	Bharmi	Apiaceae	Leaf	Stomachic, conditipation, liver tonic.
29	<i>Chenopodium albrun Linn</i>	Bathuasag	Chenopodiaceae	Leaf	Leucoderma, antihelminthic
30	<i>Cinnamonaum bejolohota Linn</i>	Tejpatha	Lauraceae	Leaf, bark	Cough and cold, toothache.
31	<i>Citrus reticulate blanco</i>	Kamla	Rutaceae	Fruit	Blood purifier, diarrhoea.
32	<i>Clerodendron viscosum Vant</i>	Bhati	Verbenaceae	Leaf, root	Swellings, stomachic, malaria.
33	<i>Colocasia esculenta Linn</i>	Kochu	Araceae	Stem, corm	Styptic, stimulant.
34	<i>Coriander sativum Linn</i>	Dhania	Umbelliferae	Leaf, Seed	Digestive, liver Tonic, check vomiting, aphrodisiac.
35	<i>Cucumis sativus Linn</i>	Khira	Cucurbitaceae	Fruit, seed	Tonic, cooling, demulcent, diuretic.
36	<i>Cucurbita pepo Linn</i>	Kumra	Cucurbitaceae	Leaf, seed	Antihelminthic burns.
37	<i>Curcuma domestica valetton</i>	Haldi	Zingiberaceae	Rhizomes	Stimulant, tonic, carminative, sprains, conjunctivitis.
38	<i>Cynodon dactylon Pers</i>	Durba	Gramineae	Whole plant	Piles, chronic, dysentery, wounds, blood in urine
39	<i>Catharanthus roseus</i>	Nayantara	Rosaceae	Leaf	Ulcer, cancer.
40	<i>Dalbergia sisso Roxb</i>	Shisham	Fabaceae	Leaf, root	Astringent.
41	<i>Datura metal Linn</i>	Datura	Solanaceae	Leaf, root	Fever, asthma, skin diseases
42	<i>Daucus carota Linn</i>	Gagor	Umbilliferae	Root	Stimulant, diuretic, carminative.
43	<i>Dillenia indica Linn</i>	Chalta	Dilleniaceae	Leaf, bark, fruit	Colling, abdominal pain.
44	<i>Dioscorea alata Linn</i>	Kamalu	Dioscoracase	Tuber	Piles.
45	<i>Digitalis sp</i>	Sialmutra	Scrophulariaceae	Leaf	Dysentery, stomachic, boil, sores.

46	<i>Eclipta prostrata</i> Linn	Karaiya	Asteracea	Leaf	Hypertension, constipation.
47	<i>Elephantopus scaber</i> Linn	Gugjalata	Asteraceae	Leaf, root	Diarrhoea, dysentery, stomachic, arrest vomiting.
48	<i>Embllica officinalis</i> Gaertn	Amla	Euphorbiaceae	Leaf, bark, fruit	Constipation, bleeding, piles, cough, anemia, nerve tonic, jaundice, asthma.
49	<i>Eugenia jambolana</i> Linn	Kalajamun	Myrtaceae	Leaf, bark, fruit, seeds	Bed breadth, burning sensation in the body, blood in stool, diabetes.
50	<i>Euphorbia pulcherrima</i> Wild	Lalpatta	Euphorbiaceae	Latex	Skin disease.
51	<i>Ficus bengalensis</i> Linn	But	Moraceae	Root, fruit, latex	Dysentery, diabetes, boils.
52	<i>Ficus hispida</i> Linn	kakadumur	Moraceae	Leaf, bark, fruit, latex	Ringworm, purgative, boils.
53	<i>Ficus carica</i> Linn	Jaggadumur	Moraceae	Seed, leaf	Kidney stone, diabetes, small pox.
54	<i>Gardenia jasminoides</i>	Gandaraj	rubiceae	Leaf, root, fruit	Antiseptic, nervous disorders, stimulant.
55	<i>Garcinia species</i>	Kaw	Guttiferae	Leaf, fruit	Diarrhoea, dysentery.
56	<i>Gmelina arborea</i> Roxb	Gamahar	Verbenaceae	Leaf	Skin diseases.
57	<i>Hibiscus rosasinesis</i> Linn	Urhul	Malvaceae	Leaf, flower, root	Hair care lotion, gonorrhoea, aphrodisiac, amenorrhoea
58	<i>Helianthus annuus</i> Linn	Surajmukhi	Asteraceae	Leaf, flower, seed,	Kidney stone, malarial fever, cough and cold.
59	<i>Ipomea batatas</i> Lamk	Mitha alu	Convolvulaceae	Leaf	Headache, hypertension.
60	<i>Jatropha gossypifolia</i> Linn	Lalbarena	Euphorbiaceae	Leaf, latex, bark	Stomachic, ulcers.
62	<i>Jatropha curcas</i> Linn	Barena	Euphorbiaceae	Leaf	Antiseptic, antihemorrhagic
63	<i>Mangifera indica</i> Linn	Aam	Anacardiaceae	Leaf, Flower, Fruit	Tonic, diuretic, rheumatism, burus, diabetes
64	<i>Mentha arvensis</i> Linn	Pudina	Labiatae	Leaf	Antihelminthic, Irregular menstruation, Rheumatism, diuretic
65	<i>Michelia champaca</i> Linn	Champa	Magnoliaceae	Leaf, root, flower	Gonorrhoea, stomachic, purgative, eradicating lice.
66	<i>Mimosa pudica</i> Linn	Lajwanti	Mimosaceae	Whole plant	Piles, boils, sores, aphrodisiac.
67	<i>Momordica charantia</i> L	Kerala	Cucurbitaceae	Fruit, leaf	Stomachic, carminative, rheumatism.
68	<i>Moringa oleifera</i> Lam	Sajna	Moringaceae	Bark, fruit.	Fever, rheumatism, liver diseases, antipyretic.
69	<i>Murraya koenigii</i> L	Norsingh	Rutaceae	Leaf	Diarrhoea, dysentery, premature graying of hair.
70	<i>Murraya paniculata</i> Jack	Kamini	Rutaceae	Leaf	Stimulant, astringent, rheumatism
71	<i>Lawsonia inermis</i> Linn	Mehandi	Lythraceae	Leaf bark	Skin diseases, jaundice, and

					astringent.
72	<i>Leucas aspera</i> Linn	Dronpuspi	Labiatae	Leaf, flower	Anemia, jaundice, asthma, itch, memorrhagia.
73	<i>Linum usitatissimum</i> Linn	Tishi	Linaceae	Seeds	Demulcent, rheumatism, gonorrhoea.
74	<i>Nerium indicum</i> Mill	Kanel	Apocynaceae	Leaf, bark, root	Snake bites, ulceration, skindisease.
75	<i>Nyctanthes arbortristis</i> Linn	Samsihar	Oleaceae	Leaf, Bark	Skin disease, malarial fever, rheumatism, anthelimsnthic.
76	<i>Nymphaea alba</i> Linn	Kamal	Nymphaeaceae	Root	Astringent, dysentery
77	<i>Ocimum sanctum</i> Linn	Sada tulsi	Lamiaceae	Leaf, root	Bronchitis
78	<i>Ocimum sanctum</i> Sp	Kala tulsi	Lamiaceae	Leaf	Cough and cold, cancer.
79	<i>Ocimum basilicum</i> Linn	Babui tulsi	Lamiaceae	Leaf	Cough and cold fever.
80	<i>O. canum</i> Linn	Bantulsi	Lamiaceae	Seeds	Liver troubles, jaundice.
81	<i>Oxalis corniculata</i> Linn	Amrulsak	Oxaliadaceae	Whole plant	Stanachie, piles.
82	<i>Piper betle</i> Linn	Pan	Piperaceae	Leaf, root	Inducing sterility in women. carminative, indigestion.
83	<i>Phyllanthus fraternus</i> Web	Bhuiamla	Euphorbiaceae	Whole plant	Leucoderma, astringent, jaundice, stomachic.
84	<i>Plumeria rubra</i> Linn	Dulanchampa	Apocynaceae	Fruits	Stimulant, gonorrhoea, rheumatism.
85	<i>Pongamia pinnata</i> Vent	karanj	Caesalpinacea	Seeds	Rheumatism.
86	<i>Psidium guajava</i> Linn	Amrud	Myrtaceae	Leaf	Mouthsores, anthelminthic, infantile diarrhea, digestive.
87	<i>Punica granatum</i> Linn	Anar	Punicaceae	Leaf, bark	Dysentery, jaundice, diabetes, antihelminthic.
88	<i>Ricinus communis</i> Linn	Arand	Euphorbiaceae	Leaf, seed	Rheumatism, headache.
89	<i>Rosa sinesis</i> Linn	Gulab phul	Rosaceae	Flower	Liver troubles.
90	<i>Saraca asoca</i> Roxb	Ashok	Caesalpinaceae	Leaf, bark	Cardiotonic, blood dysentery.
91	<i>Smilax macrophylla</i> Roxb	Kunarilota	Liliaceae	Leaf, young stem	Diabetes
92	<i>Solanum nigrum</i> Linn	makoi	Solanaceae	Leaf, fruit	Stomachic, Rheumatism, .
93	<i>Spondias pinnata</i> Kurtz	Amra	Anacardiaceae	Root, bark, fruit	Dysentery, diarrhoea, rheumatism, Gonorrhoea, Regulating Mensuration.
94	<i>Swertia chiaryita</i> Roob	Chirata	Amaranthaceae	Leaf	Fever, Antihelminthic.
95	<i>Tagetes patula</i> Linn	Genda	Asteraceae	Leaf	Malaria fever

The paper attempts to provide comprehensive information on diversity distribution and uses of medicinal plants in the studied area. The rich biodiversity may be due to mild climatic condition and diverse habitats, along with human habitats with diverse culture and communities that utilize the diversity for the treatment for various ailments. Utilization of species of medicinal plants indicated a high degree of threat to these species. If indiscriminate use of medicinal plants and their various parts continues many species may ultimately disappear from

their natural habitats, especially medicinal plants with multiple uses (Samant *et al.*, 1998). A commendable but insufficient conservation initiative of medicinal plants is being done by central and state govt which needs to strengthen.

#### Conclusion

The medicinal plant used by tribals has been used by them for treatment of diverse ailments by traditional knowledge. Many of these plants are becoming endangered. Scientific studies should be conducted on these plants.

#### LITERATURE CITED

- Ambasta SP**, The useful plants of India, Publication and information: *CSRI New Delhi*, 1986 .
- Bhamre PB, 1998**. Traditional Knowledge of Plants for skin ailments of Dhule & Nandurbar districts Maharashtra (India), *J. Phytol Res.* **11**(2): 195.
- Bhandri MJ, Chandrashekar KR and Kaveriappa KM, 1995**. Medicinal Ethnobotany of Siddis of Uttar Kannada district Karnataka, *J. Ethnopharmacol*, **4**(7): 149.
- Bhattari NK, 1993**. Folk Medicinal used of plants for respiratory complaints in central Nepal, *Fitoterapia*, **66** (2):163-170.
- Chandra K, 1985**. Traditional remedies of Bahraiah and Gonda districts of Uttar Pradesh, *Sachitya Ayurveda*, **37**: 483 - 486.
- Chantia A, 2003**. Traditional Knowledge of ethno medicine in Jaunsarbarwar, Dehradun district, *Indian J Traditional Knowledge*, **2**(4): 397-399.
- Chopra RN, Nayar SL and Chopra IC, 1956**. Glossary of India Medicinal Plants. (Publications and informations Directorate New Delhi),
- Jain A, Katewa SS, Galav PK and Sharma P, 2005**. Medicinal plant diversity from the sitamata wild life sanctuary, chittoragarh district India, *J. Ethnopharmacol*, **102**(3):543-557.