

Ethnomedicinal investigations among Tribes of Vindhyan-Kaimur region of Uttar Pradesh

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Abstract

The study was carried in Vindhyan Kaimur region of Uttar Pradesh, India, which is full of phytodiversity and nine tribal community. The aim of the study is to document the traditional indigenous knowledge of local inhabitants about use of native medicinal plants and herbs which are being utilized by the people for the treatment of their different ailments. The method adopted for documentation of indigenous knowledge was based on questionnaire, consisting of semi-structured interviews employing a checklist of questions and direct observations. The present report elucidates a rich and unique profile of phytodiversity of the research area surveyed with 81 plant species which belongs to 73 genera and 44 families.

Keywords: *Ethnomedicinal Plants, Folk medicine, Tribe*

Introduction

India presents a colourful mosaic of about 563 tribal communities which have acquired considerable knowledge of uses of plants for their livelihood and health care through their long association with forests, inheritance, practices and experiences. This is the only fact due to which the plants with medicinal properties enjoyed the highest reputation in the indigenous system of medicines for treatment of various ailments (Mehrotra, 1989). All plants of the earth have a potential medicinal value and is defined by the traditional definition of medicinal plants given in Ashtaanga Hardaya (600 A.D.) Sutra sathna Ch-9 verse 10 as:

*“Jagatyeyum anousdhamna,
kinchit vidyate dravyam,
Vashaanaarthayagayoh”.*

“There is nothing in this universe, which is non-medicinal which can not be made use of for many purposes and by many modes” (Shanker *et al.*, 2000).

This is the fact due to which plants have been in continuous use in one way or the other for the treatment of various ailments, but inspite of above fact there are various plants whose medicinal value is either not known or is confined to only few people because the knowledge is undocumented and transmitted orally from generation to generation. The present study is undertaken with a view to explore the possibility of utilizing the plant resources with special reference to ethnomedicinal plants for the economic development and upliftment of the native tribes and other new resources which are utilized by the people of the area. Vindhyan Kaimur region is very rich in plant resources and tribal population. The study area concentrates on ethnomedicinal value of plants and herbs that is used by the tribals of those area. The area lies between 24° 42' to 25° 3' 35" N^o latitude and 83° 23' to 83° 24' 55" E^o longitude in Chandauli district. The forest region is bounded on the north by Chandauli District, on the east by Bihar, on the south by Sonbhadra forest and on the west by Narayanpur, Ahraura and Mirzapur forest region of U.P. The total

forest area is 74009.46 hectare, covering Sal forest, Tatiya seemavarti forest, Salai forest and Palash forest. The region is inhabited by a number of tribes namely Kols, Kharwars, Bhuiyas, Gond, Oraons, Panikas, Dharkars, Ghasias and Baigas are totally dependent on plants and plant resources for their livelihood. The tribals collect and utilize different plant species growing in their vicinity and in the forest for food, fibre and medicine.

Materials and Method

Plant collection and preservation

Frequent field trips in different seasons were arranged in order to collect information about the ethnomedicinal uses of plants by the local people from January 04 to December 05. The specimens were collected, pressed, dried, preserved, mounted and identified through the available taxonomic literature manuals and floras. The specimens were deposited in the herbarium maintained by the DFO of the region. The data taken in the field was transferred to the slip pasted on the herbarium sheets.

Survey of traditional knowledge

Questionnaire method was adopted for documentation of folk indigenous knowledge. The interviews were carried out in local community to investigate local people and knowledgeable local healers, village Pradhans and elder persons viz Hakims, Women, Ojhas who are the main user of medicinal plants. About 100 informants have been interviewed on random basis. The people having traditional knowledge of utilization of indigenous medicinal plants have been selected as reference.

Results and Discussion

The data on 81 ethnomedicinal plants species belonging to 73 genera and 44 families were collected in different season. Information regarding their botanical name, vernacular name, family, parts used ethnomedicinal use and their status in the region are listed in the check list (Table-1).

Herbal medicine, there pharmacognostic characterization and their uses are actually the culture assets lying viable and remained preserved in the remote cut off areas like Vindhyan Kaimur region which has a diverse flora having several hundred species of higher plants. A large number of species are being used as medicinal and aromatic plants. In India more than 80% of the people belonging to the rural areas still depends upon herbal medicines specially to prevent abortion, achieve easy delivery, eye, gastric and respiratory problems, fever, antidote for snake and scorpion bites, sunstroke, arthritis, rheumatism, hydrocoel, toothache, bodyache, cough, dysentery, jaundice, induce sleep, sexual power and sexual diseases. In recent years, more efforts have been made to document the traditional knowledge.

The people of the area are entirely rural and mostly poverty-stricken, under nourished and illiterate. They have to cut forests to sell timber and fuel wood. As a result several plant species are disappearing at an alarming rate. A number of medicinal plants like *Acorus calmus*, *Rouwolfia serpentina*, *Chlorophytum tuberosum*, *Litsea glutinosa*, *Plumbago zeylanika*, *Sterculia urens*, *Withania somnifera* are on the verge of extinction due to over exploitation. The conservation programmes can protect the medicinal plants with the help of local people. Regeneration of plants is also badly affected due to heavy grazing. The local

people and researcher face the challenging task of not only recording knowledge of plants but also applying the results to their studies to biodiversity conservation and community development. Most of the species are under severe pressure due to their extensive uses in many fields. The community people collect these plants with an unmechanised method because of their great medicinal importance. So there is a necessity for the conservation of all the medicinal plants. It is hoped that chemical analysis of the medicinal plants and their pharmacotherapeutics will provide much needed lead for further research and new drug development.

References

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Table 1: Medicinal plants of Vindhyan- Kaimur region of Uttar Pradesh

S.No.	Botanical Name	Local Name	Family	Parts used	Ethnomedicinal Use	Status of Plant in the Region
1	<i>Acacia catechu</i> (L.f.) Willd	Khair, Khairo, Kehera	Mimosaceae	Leaves, Stem	The decoction of heart-wood and tobacco leaves are mixed with cow dung and inhaled three times a day for three days to stop nose bleeding.	Sufficient
2	<i>Acacia nilotica</i> (L.) Willd ex Del.	Babul, Kikar	Mimosaceae	Stem, Bark	Bark is used in asthma, bronchitis, leucorrhoea, dysentery, leucoderma and skin diseases.	Sufficient
3	<i>Acorus calamus</i> L.	Bach	Araceae	Rhizome, leaf	The rhizome is chewed for curing bronchitis, cough and cold. Leaf paste is applied externally on wounds of animals to kill the worms.	Endangered plant species, need of conservation
4	<i>Adenosma digitata</i> L.	Gorakh-inali	Bombacaceae	Leaves	Tender leaves of plants are applied over inflammations to reduce burning and pain of swellings.	Insufficient need of conservation
5	<i>Albizia libbeck</i> (L.) Benth	Siris	Mimosaceae	Bark, leaves	The plant used in snake bite and scorpion sting. Root is used in hemitoria. Leaves are good for ophthalmia and flowers for chronic cough and asthma.	Need of conservation
6	<i>Astonia paniculata</i> (L.) R. Br.	Sarpajai, Sarpami	Acanthaceae	Bark, leaves	Decoction of leaves is used in Beriberi. Bark is Stimulant	Need of conservation
7	<i>Andropogon paniculata</i> (Burm.f) Wall. ex. Nees	Kalmegh, Chiretta	Acanthaceae	Whole plant	The herb is used for bronchitis dyspepsia, influenza etc. The decoction of plant and the powder of seeds is used in fevers.	Sufficient
8	<i>Aristolochia indica</i> L.	Kali gulisar	Aristolochiaceae	Roots, Stem	Dried roots and stem of plant constitute the drug which is used in small doses. Drug promotes digestion and regulation.	Insufficient need of conservation
9	<i>Artocarpus heterophyllus</i> Lamk.	Kathal	Moraceae	Root, leaves	Roots are used for toothache and are useful in skin diseases, sores and sterility in women.	Sufficient
10	<i>Asparagus racemosus</i> Willd.	Satavari	Liliaceae	Root	It is mainly use to increase milk in animals and ladies.	Insufficient need of conservation
11	<i>Azadirachta indica</i> A. Juss.	Neem	Meliaceae	Leaves, bark	The poultice of leaves and bark is applied externally on boils as antiseptic.	Sufficient
12	<i>Baliospermum montanum</i> (Willd) Muell.-Arg	Danteamul	Euphorbiaceae	Root	Roots are used in dropsy and jaundice.	Insufficient need of conservation
13	<i>Bauhinia variegata</i> L.	Kachnar	Caesalpiniaceae	Bark	The bark is alterative, tonic, blood purifier and astringent, its decoction is being given in ulcers, syphilis, leprosy and other skin disease.	Sufficient
14	<i>Boerhaavia diffusa</i> L.	Purvaivamul	Nyctaginaceae	Whole plant	Decoction of plant (15ml) is given once a day in the early morning for fifteen days for the treatment of Leucorrhoea and dried plant powder is smoked as cigarette once a day for the treatment of Asthma.	Sufficient
15	<i>Bombax ceiba</i> L.	Senal	Bombacaceae	Fleshy roots	Paste of fleshy roots of young plant (1gm) mixed with unboiled cow milk (2ml) is taken once a day in the early morning for a week by women to regularise irregular menstruation.	Sufficient
16	<i>Buchanania lanzan</i> Spreng.	Chironji	Anacardiaceae	Leaves, fruit	It is used in fever, burns, cholera, bronchitis and asthma. Root is acid removes Kapha and biliousness.	Insufficient need of conservation

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17	<i>Butea monosperma</i> (Lamk) Taubert	Tesuphool	Papilionaceae	Bark, Seed	The decoction of bark is given three times a day to cure dysentery. Its seed and those of 'Neem' (<i>Azadirachta indica</i>) are powdered together and given to animals to kill worms.	Need of conservation
18	<i>Cuscuta reflexa</i> Roxb	Amarbel	Convolvulaceae	Whole plant	Plant paste (2gm) with paste of long pepper (<i>Piper longum</i>) (1gm) is applied on the swelling portion of scrotum before going to bed for the treatment of Hydrocele.	Sufficient
19	<i>Cassia tora</i> Linn	Chakunda	Caesalpiniaceae	Leaves	Leaves pounded and applied on cuts act like tincture iodine applied against eczema.	Sufficient
20	<i>Carissa carandus</i> L.	Carounda	Apocynaceae	Root	It is used in paralysis.	Need of conservation
21	<i>Costus speciosus</i> (Koenig) Smith	Kenvati	Zingiberaceae	Tubrous roots	Tubrous root stock are used for sexual problems.	Need of conservation
22	<i>Cardiospermum hellicacabum</i> L.	Kavani gul fulla	Sapindaceae	Whole plant	Plant is used for stiffness of limbs and leaf juice is used as cure for ear-ache.	Need of conservation
23	<i>Cassia fistula</i> L.	Amaltas	Caesalpiniaceae	Root	The powdered root mixed with water is taken orally as an antidote to snake bite.	Sufficient
24	<i>Chlorophytum tuberosum</i>	Safed musali	Liliaceae	Rhizome	Root of plant has a pungent bitter and acrid taste and is antispasmodic, carminative, expectorant, febrifuge and tonic.	Insufficient need of conservation
25	<i>Clorodendron phlomitoides</i>	Agadi	Verbenaceae	Tuber	The paste of leaves are used to cure in wounds.	Need of conservation
26	<i>Coccoloba indica</i> Wight and Arn	Kandari	Cucurbitaceae	Whole plant	Plant is alternative ad used internally in gonorrhoea. Juice of plant cures ear pain.	Need of conservation
27	<i>Corallocarpus opigaeus</i> (Rottl and Willd) Clarke.	Kaira, Mirichiaka nd	Cucurbitaceae	Roots	Roots are used in dysentery and rheumatism.	Need of conservation
28	<i>Circaea glabra</i> Gaertn	Kali-musali	Amarilidaceae	Tubrous roots and rhizome	Roots are alterative and tonic and rhizome is used in piles, jaundice, asthma, diarrhoea and gonorrhoea.	Insufficient need of conservation
29	<i>Cyperus rotundus</i>	Nagarmotha	Cyperaceae	Tuber or bulbous roots	It is used for indigestion and in diarrhoea	Sufficient
30	<i>Datura stramonium</i> L.	Dhatura	Solanaceae	Whole plant	The plant is used to improve digestion, cures skin diseases such as itching, scabies, ulcers and leprosy. Leaves and seeds are useful in respiratory ailments, rheumatism and eye-diseases.	Sufficient
31	<i>Eclipta alba</i> L.	Bhringraj	Asteraceae	Whole plant	The plant is good for the hair and skin, expels intestinal worms, cures cough and asthma and strengthens body.	Sufficient
32	<i>Elephantopus scaber</i> L.	Sahas muli	Asteraceae	Roots	The roots are used in healing of wounds and to cure filaria.	Insufficient need of conservation
33	<i>Embellica officinalis</i> Gaertn.	Aanwala	Euphorbiaceae	Fruit	The aqueous extract of fruits mixed with the fruits of Harar (<i>Terminalia chebula</i>) and Bahara (<i>Terminalia bellirica</i>) is used in constipation.	Sufficient

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34	<i>Ficus bengalensis</i> L.	Bargad	Moraceae	Bark	An infusion of bark cures dysentery nervous disorders, diarrhoea, leucorrhoea and reduces blood sugar in diabetes.	Sufficient
35	<i>Ficus glomerata</i> Roxb.	Gular	Moraceae	Whole plant	It is highly efficacious in threatened abortions, menorrhagia or flooding and failure of lactation, gonorrhoea, skin diseases and ulcers.	Sufficient
36	<i>Ficus religiosa</i> L.	Peepal	Moraceae	Whole plant	The plant parts used in mouth sores, atrophy, emaciation, rheumatism small in urine, spermatorrhoea, gravel, cholera etc.	Sufficient
37	<i>Fumaria indica</i> L.	Pitta papda, parpat	Fumariaceae	Whole plant	The dried plant is used as anthelmintic, diuretic and diaphoretic.	Insufficient need of conservation
38	<i>Gloriosa superba</i> L.	Kali hari	Liliaceae	Tuber	Tuber are used in medicines as anthelmintic and leaf is used to kill lice in hair.	Need of conservation
39	<i>Grewia asiatica</i>	Dhamin	Teliaceae	Root	The root decoction is given in urinary troubles.	Insufficient need of conservation
40	<i>Gynemna sylvestre</i> L.	Gurmar (Afro)	Asclepiadaceae	Root and Leaves	Root and Leaves are used in stomach pain.	Need of conservation
41	<i>Helicteres isora</i>	Maropali	Sterculiaceae	Root, bark	Juice of roots is beneficial in stomach affections and used in diabetes. Bark is used for diarrhoea and dysentery.	Insufficient need of conservation
42	<i>Holarrhena antidysenterica</i> (Roth) A.D.C.	Indra jav	Apocynaceae	Bark	The bark decoction is given orally in the morning for 7 days in the treatment of malarial fever.	Need of conservation
43	<i>Holoptelea integrifolia</i> (Roxb) Planch.	Chilbil	Euphorbiaceae	Stem bark	Stem bark is tied on arm to cure hydrocoel.	Sufficient
44	<i>Lamnea coromandelica</i> (Houtt.) Merr.	Zinghan	Anacardiaceae	Bark	The bark decoction is applied on wounds for healing.	Sufficient
45	<i>Leuca macrophylla</i> Roxb. ex Hornem	Badi Hansia Med	Leeaceae	Roots	Roots are used as remedy for ring worm and in cure of guinea worm.	Insufficient need of conservation
46	<i>Litsea glutinosa</i>		Lauraceae	Seed	It is used in medicines for curing rheumatism and bark is used in diarrhoea and dysentery.	Endangered plant species, need of conservation
47	<i>Mangiphora indica</i> Lim,	Aam	Anacardiaceae	Leaves	Leaves are acrid, astringent cure for vaata, pitta, and kapha and are used in scorpion sting.	Sufficient
48	<i>Martynia annua</i> L.	Hathajori	Martyniaceae	Leaves	Leaves are used in epilepsy and applied to tuberculous glands of the neck.	Need of conservation
49	<i>Mallotus philippinensis</i> Muill.-Arg.	Rohini	Euphorbiaceae	Fruit	The powder obtained from the fruits and mixed with coconut oil is applied externally as an antiseptic in skin diseases.	Need of conservation
50	<i>Moringa oleifera</i> Lam	Sahjana	Moringaceae	Bark, Root	The paste of root bark is applied on boils for suppression as well as suppuration.	Sufficient
51	<i>Melastoma heterophyllum</i> (Lour.) Cogn.	Gulakhari	Cucurbitaceae	Tubrous root	Decoction of root is useful in toothache.	Insufficient need of conservation
52	<i>Murraya koenigii</i> L. Spreng	Kadi patla	Rubiaceae	Roots and bark	Bark and root are stimulant externally used to cure eruptions and bites of poisonous animals.	Sufficient
53	<i>Nyctanthus arborescens</i> L.	Harsinghar	Oleaceae	Whole plant	The plant is cholagogue and laxative.	Need of conservation

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54	<i>Ocimum basilicum</i> L.	Van-Tulsi	Lamiaceae	Whole plant	It cures disorder due to kapha, vata, dyspepsia, cough, bronchitis, intermittent fevers. Seeds are used in dysentery and diarrhoea.	Sufficient
55	<i>Operculina turpethum</i> L.	Nishoda	Convolvulaceae	Root	The white tuberous root is used as a mild hydragogue in chronic constipation, enlargement of the spleen and other disorders.	Insufficient need of conservation
56	<i>Plumbago zeylanica</i> L.	Chitawar	Plumbaginaceae	Root and Milky Juice	Root is an appetizer, used in skin diseases, diarrhoea, piles, Milky juice is used as application in scabies and ulcers.	Endangered plant species, need of conservation
57	<i>Phyllanthus niruri</i>	Bhumi aawala	Euphorbiaceae	Whole plant	It is used as diuretic in dropsical affections, gonorrhoea and other troubles of genito urinary tract. Fresh root is remedy for jaundice.	Need of conservation
58	<i>Piper longum</i> L.	Pipali	Piperaceae	Unripe fruit	It is given with honey to indigestion, dyspepsia, cough bronchitis, asthma, cholera, fever, leprosy, piles etc.	Need of conservation
59	<i>Pterocarpus nesusipum</i> Roxb.	Vizaya-Sal	Fabaceae	Leaves and gum	Leaves are applied on sores and boils. Gum is used in diarrhoea and for toothache.	Need of conservation
60	<i>Ronovofia serpentina</i> (L.) Benth.	Jharbarua	Apocynaceae	Roots	The roots are used in fever as an antidote to snake bite.	Need of conservation
61	<i>Sapindus emarginatus</i> Vahl	Reetha	Sapindaceae	Roots	Roots and bark are used as mild expectorant and demulcent.	Insufficient need of conservation
62	<i>Schrebera swietenoides</i>	Jamarali	Oleaceae	Stem bark	The decoction of stem bark is used to cure mental depression.	Need of conservation
63	<i>Schleichera oleosa</i> (Lour) Oken.	Kusum	Sapindaceae	Stem bark	The stem bark is warmed and used as a poultice to cure rheumatic pains.	Need of conservation
64	<i>Smilax zeylanica</i> L.	Ramdatun	Smilacaceae	Root	It is used in sexual troubles.	Need of conservation
65	<i>Sterculia urens</i>	Kamraha	Sterculiaceae	Powder root	The powder root of young plant is mixed with water and given orally to pregnant women at the time of childbirth for easy delivery.	Endangered plant species, need of conservation
66	<i>Sterculia foetida</i> L.	Jangli badam	Sterculiaceae	Gum	It is used in rheumatism and dysentery.	Need of conservation
67	<i>Srobilanthus ciliatus</i>	Kaira	Acanthaceae	Rhizome	Rhizome is used as antidote in snakebite.	Insufficient need of conservation
68	<i>Shorea robusta</i> Gaertn. f.	Sal	Dipterocarpaceae	Gum	The gum mixed with curd is given in dysentery.	Sufficient
69	<i>Soyinida febrifuga</i> A. Juss	Rohini	Meliaceae	Bark	The powdered bark is mixed with water and given to cattle to cure diarrhoea and body inflammation.	Need of conservation
70	<i>Syzgium cumini</i> (Linn.) Skeels	Jamun	Myrtaceae	Bark and seed	A decoction of bark and seeds is useful in diarrhoea and dysentery.	Sufficient
71	<i>Tanacetum indicum</i> L.	Inali	Caesalpiniaceae	Leaf	The leaf juice is applied on eyes to cure inflammation.	Sufficient

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72	<i>Teminalia allata</i>	Asan	Combretaceae	Bark	The powdered bark is applied for healing of cuts and wounds.	Need of conservation
73	<i>Teminalia arjuna</i> (Roxb.) Wight & Arn.	Arjuna	Combretaceae	Stem bark	The decoction of the stem bark, mixed with the decoction of seeds of 'Sakhu' (<i>Shorea robusta</i> Gaertn) and 'Anar' (<i>Punica granatum</i> L.) is used in dysentery.	Need of conservation
74	<i>Teminalia chebula</i> Retz.	Harara	Combretaceae	Fruits	Fruits are also used in medicines as laxatives, stomachic, tonic and purgative.	Need of conservation
75	<i>Teminalia bellirica</i> Gaertn	Baheda	Combretaceae	Fruit pulp	Fruits pulp is used in drops, diarrhoea and leprosy, and holy ripe fruit as purgative.	Insufficient need of conservation
76	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook. f & Thoms.	Gumuchi	Menispermaceae	Stem	The aqueous extract of the stem is given to cure nocturnal emission and to impact strength.	Insufficient need of conservation
77	<i>Urgenia indica</i> (Roxb.) Kunth	Kad, Kanda	Liliaceae	Bulbs	Alcoholic extracts of the bulbs possess against human epidermal carcinoma.	Insufficient need of conservation
78	<i>Vernilago-nadensispatane</i> (Caerten)	Gulisar	Rhamnaceae	Root bark	Root bark is stomachic, tonic and stimulant.	Need of conservation
79	<i>Withania sonnifera</i> (L.) Dunal	Asagandha	Solanaceae	Root	It is useful in cough, dropsy, leucorrhoea and menstrual troubles. It restores loss of memory and is used in cases of nervous exhaustion spermatorrhoea and senile debility.	Endangered plant species, need of conservation
80	<i>Ziziphus jujuba</i> L.	Ber	Rhamnaceae	Fruit and Leaves	The plant root is bitter and cooling cures kapha, biliousness and headache.	Sufficient
81	<i>Ziziphus oenoplia</i> L. Mill	Makoya	Rhamnaceae	Stem bark	Mixture of decoction of stem bark (3ml) with paste of long peppers (<i>Piper longum</i>) (2gm) is taken with empty stomach in early morning for cure of dysentery.	Need of conservation