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Traditional knowledge on ethno-medicinal uses prevailing in tribal pockets of Chhindwara and Betul Districts, Madhya Pradesh, India

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The present paper deals with the traditional knowledge of traditional herbal healers of Chhindwara and Betul districts of Madhya Pradesh, India regarding the use of plants for the treatment of various diseases prevalent in the tribal pockets. The herbal healers of these region use plant/plant parts of their suitable preparation for treating various ailment. Information collected from traditional tribal healers, medicine men etc has revealed that plant/plant parts of 77 species from Chhindwara district and 50 species from Betul district of forest origin are utilized as paste, powder, juice, decoction and extract for the treatment of various diseases of local people of the area. The knowledge of plants used by traditional herbal healers for ailments would be immense help to replace synthetic drugs.

Key words: Traditional knowledge, herbal healers, medicinal plants, disease.

INTRODUCTION

Plants and plants based medicaments have been employed since the dawn of civilization for prolonging life of man by combating various ailments. Ancient ethnic communities around the world have learnt to utilize their neighborhood herbal wealth for curative purpose. Indian subcontinent is being inhabited by over 54 million tribal people dwelling in about 5000 forest dominated villages spreading across the country comprising 15% of the total geographical area, their knowledge of plants developed often at the cost of their life in their natural dwellings through centuries old experience could not be perfectly documented due to the lack of literacy and it had rather descended from one generation to another as a domestic practice. They comprises of one of the unique treasure and rich source of diversified ethno-botanical wealth.

In remote tribal villages of Chhindwara and Betul districts, traditional medicines are of great importance in the primary healthcare of indigenous people due to their strong faith on these systems and up to some extent the lack of sufficient and reliable health facilities and modern medicines. The local plant resources are the principal

source of medicine and are used by the traditional herbal healers. Hundreds of plants growing in forests are used as source of medicines throughout the world. Some of the plants have pharmacological properties while the others are used in indigenous medicine. Most of these plants has occupied an important place in the past and shall continue in the coming days in traditional as well as in modern medicine system. Ayurveda is the basis and foundation of ancient medicinal system of drugs derived from plant species. The system like Arurveda, Unani, Siddha and Homeopathy have been utilizing about more than 200 plant species for medicinal purposes.

These medicinal systems have attained a great importance these days owing to side effects caused by synthetic drugs. In Indian Materia Medica, 2000 drugs have been extracted from 1800 plants of forest origin. The active principles found in medicinal plants are alkaloids, glucosides and other complex compounds. The active ingredients are found in one or more parts of the plants in varying proportions. It may be found in root, bark, stem, leaf, fruit, flower or seeds.

In Madhya Pradesh tribes and forest dwellers from a considerable part of the population. The state is strategically located and occupies a place almost in the heart of the country. A large number of tribal communities live in remote and inaccessible parts of the forests. Most

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of these tribal communities are largely dependent on plant species for curing their ailments. Living close to the nature, these tribals have acquired unique knowledge about the use of wild flora.

Various contributors have worked on medicinal plants of Central India (Jain, 1963 a, b and c; Jain and Tarafdar, 1970; Bhatnagar et al., 1973; Sahu, 1982, 1983; Mishra and Sahu, 1984; Saxena, 1986; Rai, 1987, 1989; Lal, 1988, 1993; Rai and Ojha, 1989; Oommachan et al., 1990; Shah and Singh, 1990; Pandey et al., 1991; Jain, 1992; Rai and Nonhare, 1992; Bhalla et al., 1992, 1996; Khan et al., 1994; Maheshwari, 1996; Khan and Singh, 1996; Bajpai and Mitra, 1997; Kumar and Jain, 1998; Dubey et al., 2001). Few ethno-botanical works have been done in Patalkot valley (Rai, 1987a; Rai et al., 1999). Ethno-botanical studies have also been done in Central India and Chhattisgarh (Rai and Nath, 2005; Rai et al., 2002) but there are some tribal pockets in Chhindwara and Betul district where indigenous knowledge of herbal healer could not be properly documented due to lack of scientific manpower in such remote areas for the search of traditional medicines. Therefore, the study has been taken up in Chhindwara and Betul districts of Madhya Pradesh, India.

MATERIALS AND METHODS

The study was carried out in the district of Chhindwara and Betul of Madhya Pradesh state of India. The survey was conducted to collect the information regarding tribal pockets of Chhindwara and Betul district from Tribal Welfare Office and Divisional Forest Office. Five tribal villages in each site were visited through periodical tour. Special attention was paid to record information from local traditional herbal healer (*Vaidya*). The information on home – remedies using the preventive and curative values of different plant species documented involving the ethical guidelines adopted by the International Society of Ethno-biology.

Ex-Post Facto Research, Rapid Rural Appraisal method were adapted for collection of data from primary and secondary sources. Ex-Post Facto Research (Chapin, 1955). The design is a systematic empirical enquiry in which scientist has a direct control on independent variables. Here the variables were tribals, traditional herbal healers, *vaidyas*, *ojhas* and *guniyas* from whom the information were collected. The techniques of RRA included interview and question design techniques for individual, household and key informant interviews, methods of cross-checking information from different sources, sampling techniques that can be adapted to a particular objective, methods of obtaining quantitative data in a short time frame group interview techniques, including focus-group interviewing methods of direct observation at site level and use of secondary data sources.

Random and snowball sampling techniques were employed to identify potential participants and interviewed with herbal healers. The study area covers selection of tribal blocks of the district. The details of tribal blocks and tribal herbal healers were collected from Tribal Welfare Office and Forest Office of the districts. The tribal villages are selected from tribal blocks by random sampling method. Rapid Rural Appraisal Method for collection of data has been applied. A questionnaire / schedule have been developed to document the information prevailing in the community over a period of time in periodical visits. The guidelines mentioned in the CBD have been followed for survey and documentation work. During the

field trips, local guide, villagers, traditional herbal healers (*Vaidyas*, *Ojhas* and *Guniyas*), tribal heads and tribal persons are contacted and enquired to gather related information.

Identification of plants has been made through the local name of plant with the help of existing literature. The directory of Indian folk medicines and Indian Materia Medica were consulted to confirm the identification and the medicinal use of plants mentioned in the paper.

Study sites

Chhindwara and Betul Districts of Madhya Pradesh, India are located on region of 'Satpura Range of Mountains'. Chhindwara is spread from 21.28 to 22.49 Deg. North (longitude) and 78.40 to 79.24 Deg. East (latitude). This district is bound by the plains of Nagpur District (in Maharashtra State) on the South Betul and Narsinghpur Districts on the North Betul District on the West and Betul Districts on the East. There are eleven development blocks in Chhindwara district and ten development blocks in Betul. As per Census 2001 the total populations of Chhindwara and Betul districts are 18, 48,882 and 13, 95,175 respectively. Betul is one of the marginally located southern districts of Madhya Pradesh, lying almost wholly on the Satpura plateau. The District extends between 21 - 22 and 22 - 24° N Latitude and between 77 - 10 and 78 - 33°E Longitude and forms a compact shape, almost a square with slight projection on the East and the West. The survey was conducted to collect the information regarding tribal pockets of Chhindwara and Betul district from Tribal Welfare Office and Divisional Forest Office. Four blocks viz. Bichhua, Tamia, Junnardeo and Harrai of Chhindwara district and Betul, Ghora Dongri, Bhainsdehi, Athner and Chicholi of Betul district have been identified as rich tribal pockets. The details of leading traditional herbal healers and their localities have been collected from above tribal blocks. Fourteen leading traditional herbal healers practicing in different localities of Chhindwara district have been contacted to document their traditional knowledge. The seven leading traditional herbal healers of Betul District have been contacted from tribal villages of the above localities for documentation of work (Table 1).

RESULTS AND DISCUSSION

Surveys in tribal villages of four tribal pockets of Chhindwara and five tribal pockets of Betul districts have been conducted. The details are as follows: the enumeration of 77 medicinal plants being used by the traditional herbal healers (*Vaidyas*, *Ojhas*, *Guniyas*) have been documented from Chhindwara district. The tribal uses different parts of plants which are locally available, in curing various types of diseases (Table 2). In case of any illness, village people contact their local medicine practitioner to whom they call *vaidhya* (traditional herbal healer). *Vaidhya* is a person who has inherited the knowledge of curing various diseases from his fore fathers and others by using only plants. There is one or two such type of person in the village community. Traditionally, local knowledge is transferred from one generation to other generation within family of the *vaidhya* and in this way *vaidhya* system survives.

The traditional herbal healing properties contain much medicine for a single ailment out of the various medicines; one is selected by the herbal healer for curing a

Table 1. Tribal blocks selected for the study.

S/N	District	Tribal blocks	No. of traditional herbal healers contacted
1	Chhindwar	Bichhua Tamia Junnardeo	14
2	Betul	Harrai Betul Ghora dongri Bhaisdehi Athner Chicholi	7

Table 2. Plants with local name, parts used in medicine by the traditional herbal healers of Chhindwara district.

S/N	Plant Name		Family	Habit	Plant part used /Formulation	Disease
	Local name	Botanical name				
1.	Nirgundi	<i>Vitex negundo</i> Linn	Verbenaceae	Shrub	Leaf (Decoction)	Rheumatism
2.	Ratanjot	<i>Jatropha curcas</i> Linn	Euphorbiaceae	Shrub	Seed (Decoction)	Rheumatism
3.	Malkangni	<i>Celastrus paniculatus</i> Willd	Celastraceae	Shrub	Seed(Decoction)	Rheumatism
4.	Arandi	<i>Ricinus communis</i> Linn	Euphorbiaceae	Small tree	Leaf (Decoction)	Rheumatism
5.	Harshigar	<i>Nyctanthes arbortristis</i> Linn	Oleaceae	Small tree	Leaf (Decoction)	Rheumatism
6.	Ashwgandh	<i>Withania somnifera</i> Dunal.	Solanaceae	Shrub	Root (Powder)	Weakness
7.	Jangli angur	<i>Ampelocissus arnotiana</i> Planch.	Vitaceae	Climber	Root (Powder)	Weakness
8.	Budhwara	<i>Argyrea nervosa</i> Burm.f.	Convolvulaceae	Climber	Root (Powder)	Weakness
9.	Paral	<i>Stereospermum chelonoides</i> DC	Bignoniaceae	Tree	Seed (Powder)	Migraine
10.	Bari dudhi	<i>Euphorbia hirta</i> Linn	Euphorbiaceae	Herb	Whole plant (Extract)	Rheumatism
11.	Patal kumhda	<i>Pueraria tuberosa</i> DC	Fabaceae	Herb	Tuber part (Powder)	Weakness
12.	Satawar	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Under shrub	Root (Powder)	Weakness
13.	Barahi kand	<i>Dioscorea bulbifera</i> Linn.	Dioscoreaceae	Climber	Tuber part (Powder)	Weakness
14.	Jamun	<i>Syzygium cumini</i> Linn.	Myrtaceae	Tree	Seed (Powder)	Diabetes
15.	Gvar pada	<i>Aloe barbadensis</i> Mill. syn. <i>A. vera</i> Tourn. ex Linn.	Liliaceae	Rosettes herb	Leaf pulp (Paste)	Diabetes
16.	Gurmar	<i>Gymnema sylvestre</i> R.Br.	Asclepiadaceae	Climbing shrub	Leaf (Powder)	Diabetes
17.	Indrayan	<i>Citrullus colocythis</i> Schrad.	Cucurbitaceae	Shrub	Seed (Powder)	Jaundice
18.	Paather chur	<i>Coleus amboinicus</i> Lour; CA	Lamiaceae	Herb	Leaf (Paste)	Stones
19.	Aparajita	<i>Clitoria ternatea</i> Linn.	Fabaceae	Climber	Leaf (Decoction)	Sciatica
20.	Gurhal	<i>Hibiscus rosa-sinensis</i> L	Malvaceae	Small tree	Leaf (Paste)	Vertigo
21.	Badari kand	<i>Ipomoea mauritiana</i> Jacq	Convolvulaceae	Climber	Tuber part (Paste)	Fit

Table 2. Contd.

22.	Bhasam kand	<i>Sauromatum guttatum</i> var. <i>pedatum</i> (Link and Otto)	Araceae	Herb	Tuber part (Paste)	Piles
23.	Hatkan	<i>Leea macrophylla</i> Roxb.	Vitaceae	Herb	Root (Paste)	Cut, Swelling, pain
24.	Kalihari	<i>Gloriosa superba</i> Linn.	Liliaceae	Climber	Root (Paste)	Pregnancy
25.	Bhoora kumhda	<i>Benincasa hispida</i> Thunb.	Cucurbitaceae	Climber	Seed (Powder)	Urinary trouble
26.	Sonpataruka	<i>Coccinia grandis</i> L.	Cucurbitaceae	Climber	Seed (Powder)	Throat problem
27.	Thour	<i>Opuntia dillenii</i> Ker Gawl.	Cactaceae	Under shrub	Stem (Extract)	Pneumonia
28.	Charonta	<i>Cassia tora</i> Linn.	Caesalpinaceae	Herb	New leaves (Paste)	Rheumatism
29.	Amaltas	<i>Cassia fistula</i> Linn.	Caesalpinaceae	Tree	Flower (Paste)	Rheumatism
30.	Gataran	<i>Caesalpinia crista</i> Linn	Caesalpinaceae	Climbing shrub	Seed (Powder)	Intestinal worms
31.	Shivlingi	<i>Bryonopsis laciniosa</i> Linn	Cucurbitaceae	Climber	Seed (Paste)	Pregnancy
32.	Sagun	<i>Tectona grandis</i> L.	Verbenaceae	Tree	Leaf (Smoke)	Skin disease
33.	Singhara	<i>Trapa natans</i> L	Trapaceae	Herb	Fruit (Powder)	Intestinal ulcer
34.	Tulsi	<i>Ocimum sanctum</i> Linn	Lamiaceae	Herb	Leaf (Extract)	Skin disease
35.	Chhoti dudhi	<i>Euphorbia thymifolia</i> Linn	Euphorbiaceae	Herb	Whole plant (Extract)	Gastric problem
36.	Akarkara	<i>Spilanthes acmella</i> Murr.	Asteraceae	Herb	Root (Paste)	Throat problem
37.	Buch	<i>Acorus calamus</i> L.	Araceae	Herb	Root (Paste)	Throat problem
38.	Ledi piper	<i>Piper longum</i> L.	Piperaceae	Climber	Root (Paste)	Throat problem
39.	Keukand	<i>Costus speciosus</i> (Koenig) Sm.	Costaceae	Herb	Tuber part (Paste)	Rheumatism
40.	Arjun	<i>Terminalia arjuna</i> (Roxb.) Wgt. and Arn.	Combretaceae	Tree	Fruit (Powder)	Heart ailments
41.	Pila dhatura	<i>Datura innoxia</i> Mill	Solanaceae	Shrub	Root (Extract)	Skin disease
42.	Safed dhatura	<i>Datura stramonium</i> Linn.	Solanaceae	Shrub	Fruit (Oil)	Body pain
43.	Gurvel	<i>Tinospora cordifolia</i> Willd.	Menispermaceae	Climber	Root (Decoction)	Anemia
44.	Sannay	<i>Cassia senna</i> L	Caesalpinaceae	Under shrub	Leaf (Powder)	Bowel problem
45.	Chirayata	<i>Swertia chirayita</i> Buch. Ham. Ex C.B. Clarke	Gentianaceae	Herb	Whole plant (Decoction)	Diabetes
46.	Kali musli	<i>Curculigo orchioides</i> Gaertn,	Amaryllidaceae	Herb	Root (Powder)	Weakness
47.	Bahera	<i>Terminalia bellirica</i> Roxb.	Combretaceae	Tree	Fruit (Powder)	Cough and cold
48.	Babul	<i>Acacia nilotica</i> Linn	Mimosaceae	Tree	Bark (Decoction)	Cough and cold
49.	Khair	<i>Acacia catechu</i> Willd	Mimosaceae	Tree	Bark (Decoction)	Cough and cold
50.	Mak	<i>Solanum nigrum</i> L.	Solanaceae	Herb	Whole plant (Decoction)	Swelling
51.	Bhui-amla	<i>Phyllanthus fraternus</i> Webster	Euphorbiaceae	Herb	Whole plant (Decoction)	Swelling
52.	Punarnava	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Herb	Whole plant (Decoction)	Swelling
53.	Pitt-papra	<i>Fumaria officinalis</i> L.	Fumariaceae	Herb	Whole plant (Decoction)	Cold, cough, and fever
54.	Neem	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Tree	Bark (Decoction)	Cold, cough, and fever
55.	Raktbirad	<i>Plumbago indica</i> L.	Plumbaginaceae	Shrub	Root (Paste)	Skin disease
56.	Jalpipali	<i>Lippia nodiflora</i> L.	Verbenaceae	Herb	Whole plant (Paste)	Pneumonia
57.	Gorakhmundi	<i>Sphaeranthus indicus</i> L.	Asteraceae	Herb	Whole plant (Powder)	Weakness

Table 2. Contd.

58.	Kasondi	<i>Cassia occidentalis</i> Linn.	Caesalpiniaceae	Shrub	Root (Powder)	Snake bites
59.	Ram datun	<i>Smilax perfoliata</i> Lour.	Liliaceae	Climber	Root (Paste)	Leucorrhoea
60.	Karanj	<i>Pongamia pinnata</i> Pierre.	Fabaceae	Tree	Seed (Powder)	Piles
61.	Maha neem	<i>Melia azedarach</i> Linn.	Meliaceae	Tree	Bark (Paste)	Piles
62.	Am	<i>Mangifera indica</i> Linn	Anacardiaceae	Tree	Flower (Paste)	Skin disease
63.	Adusa	<i>Adhatoda vasica</i> Nees.	Acanthaceae	Shrub	Bark (Powder)	Asthma
64.	Kuda	<i>Holarrhena antidysenterica</i> (Linn) Wall.	Apocynaceae	Tree	Bark (Powder)	Fever
65.	Meda	<i>Litsea monopetala</i> Roxb.	Lauraceae	Tree	Bark (Paste)	Dysentery
66.	Kevti	<i>Flacourtia indica</i> Merr	Flacourtiaceae	Shrub	Bark (Paste)	Dysentery
67.	Haadjod	<i>Cissus quadrangularis</i> Linn	Vitaceae	Climber	Stem (Paste)	Bone fracture
68.	Harra	<i>Terminalia chebula</i> Retz.	Combretaceae	Tree	Fruit (Powder)	Cough
69.	Kardhai	<i>Anogeissus pendula</i> Edgew.	Combretaceae	Tree	Bark (Decoction)	Dysentery
70.	Bad	<i>Ficus bengalensis</i> Linn.	Moraceae	Tree	Latex (Juice)	Weakness
71.	Pipal	<i>Ficus religiosa</i> Linn.	Moraceae	Tree	Latex (Juice)	Weakness
72.	Khirni	<i>Manilkara hexandra</i> Roxb.	Sapotaceae	Tree	Latex (Juice)	Weakness
73.	Ghutla	<i>Ipomoea pestigridis</i> Jacq.	Convolvulaceae	Climbing shrub	Leaf (Chiew)	Stones
74.	Jangli lahsun	<i>Allium porum</i> L.	Liliaceae	Herb	Bulb (Paste)	Rheumatism
75.	Sajji	<i>Salsola kali</i> L.	Chenopodiaceae	Herb	Whole plant (Powder)	Cough
76.	Jangli piyaz	<i>Drimia indica</i> Roxb.	Liliaceae	Herb	Bulb (Paste)	Scorpion sting
77.	Kuramdan	<i>Piper betel</i> Linn.	Piperaceae	Climber	Root (Paste)	Throat problem

particular disease according to symptoms and secondary effects. Several plants are used in case of one disease according to their availability in the region. Some of the plants commonly used by tribals in Central India for prominent disease have been recorded during the present study. The remedial measures have been recorded from tribes of Betul and Chhindawara district of Madhya Pradesh, India. The enumerations of 50 medicinal plants have been recorded from the traditional herbal healers from Betul district. The plants and its parts being used by the traditional herbal healers against the diseases prevailing among tribal/local peoples of the area have been documented and given in Table 3. It is interesting to note that the rural communities still dependent

on herbal medicines and they used to take herbal medicine from herbal healers of their local area. The plant parts used and formulations of the medicine prepared by traditional herbal healers have been documented for the first time from these regions and presented in this paper.

Out of 77 plant species of Chhindwara district, 24 species of herbaceous plants, 14 species of shrubs, 22 species of trees and 17 species of climbers are used in preparation of traditional medicines. In Betul district out of 50 plant species, 18 species belongs to herbs, 16 species to trees, 10 species to climbers and 6 species of shrubs which are used in preparation of medicines (Table 4). India is blessed with rich and diverse heritage of cultural traditions. These traditions are asso-

ciated with use of wild plants. The use of medicinal herbs is still a tradition continued by ethnic communities who are living in undulating plains and at foot hills of dense forest. Shanker (1998) has reported the traditional folk healers in India. Ethno-botanical studies in context to Bharia tribe of Madhya Pradesh, India include those by Jain (1963, 1971, 1975), Prasad et al. (1990), Rai et al. (2001) and Saxena and Shukla (1971), Rai and Nath (2005). The survey of literature shows these people have conducted studies on use of medicinal plants by Bharia tribes. The present study has been undertaken for documentation of information on ethno-medicinal uses prevalent in the region of study. Jain (1963, 1965) has concluded similar study on the plants used in

Table 3. Plants with local name, parts used in medicine by the traditional herbal healers of Betul district.

S/N	Plant Name		Family	Habit	Plant part used /Formulation	Disease
	Local Name	Botanical name				
1.	Palash	<i>Butea monosperma</i> (Lank.) Kuntze	Fabaceae	Tree	Root (Juice)	Eye disease
2.	Gumchi	<i>Abrus precatorius</i> Linn.	Fabaceae	Herb	Root (Juice)	Eye disease
3.	Dam bel	<i>Tylophora indica</i> Burm.f	Asclepiadaceae	Climber	Leaf (Powder)	Asthma
4.	Kadvi lauki	<i>Lagenaria siceraria</i> Molina.	Cucurbitaceae	Climber	Fruit (Powder)	Asthma
5.	Bal harr	<i>Terminalia chebula</i> Gaertn.) Retz.	Combretaceae	Tree	Fruit (Powder)	Asthma
6.	Kasondi	<i>Cassia occidentalis</i> L.	Caesalpiniaceae	Tree	Seed (Powder)	Rheumatism
7.	Bagnakha	<i>Martynia annua</i> L.	Martyniaceae	Shrub	Root (Decoction)	Snake bite
8.	Jalkumbhi	<i>Pistia stratiotes</i> L.	Araceae	Water climber	Seed (Decoction)	Snake bite
9.	Kalmegh	<i>Andrographis paniculata</i> Wall. Ex Nees	Acanthaceae	Herb	Whole plant(Decoction)	Snake bite
10.	Arjun	<i>Terminalia arjuna</i> Bedd.	Combretaceae	Tree	Bark (Powder)	Diabetes
11.	Gudmar	<i>Gymnema sylvestre</i> R.Br.	Asclepiadaceae	Bel	Leaf(Powder)	Diabetes
12.	Jamun	<i>Syzygium cumini</i> Linn.	Myrtaceae	Tree	Fruit(Powder)	Diabetes
13.	Am	<i>Mangifera indica</i> L.	Anacardiaceae	Tree	Leaf(Powder)	Diabetes
14.	Karela	<i>Momordica charantia</i> L.	Cucurbitaceae	Climber	Leaf (Powder)	Diabetes
15.	Methi	<i>Trigonella foenum-graecum</i> L.	Fabaceae	Herb	Seed (Powder)	Diabetes
16.	Keukand	<i>Costus speciosus</i> (J. Koenig) Sm.	Zingiberaceae	Herb	Tuber part(Paste)	Blood pressure
17.	Ramdatun	<i>Smilax perfoliata</i> Linn.	Liliaceae	Herb	Root (Powder)	Blood pressure
18.	Dhania	<i>Coriandrum sativum</i> L.	Apiaceae	Herb	Leaf (Paste)	Blood pressure
19.	Kiwach	<i>Mucuna pruriens</i> L.	Fabaceae	Climber	Seed (Powder)	Impotency
20.	Satawar	<i>Asparagus racemosus</i> Willd.	Liliaceae	Climber	Root (Powder)	Impotency
21.	Safed musli	<i>Chlorophytum arundinaceum</i> Baker.	Liliaceae	Herb	Root (Powder)	Impotency
22.	Kalihari	<i>Gloriosa superb</i> L.	Liliaceae	Herb	Tuber part(Paste)	Leucorrhoea
23.	Semal	<i>Bombax ceiba</i> L.	Bombacaceae	Tree	Bark (Powder)	Leucorrhoea
24.	Satayanasi	<i>Argemone Mexicana</i> L.	Papaveraceae	Shrub	Root(Powder)	Sunstroke
25.	Indrayan	<i>Citrullus colocynthis</i> L.	Cucurbitaceae	Herb	Root (Powder)	Sunstroke
26.	Kadu jira	<i>Centratherum anthelminticum</i> Willd.	Asteraceae	Herb	Seed(Powder)	Tuberculosis
27.	Chirchita	<i>Achyranthes aspera</i> L.	Amaranthaceae	Herb	Root (Powder)	Tuberculosis
28.	Giloy	<i>Tinospora cordifolia</i> (Willd.) Miers.	Menispermaceae	Climber	Root (Powder)	Tuberculosis
29.	Nim	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Tree	Bark (Powder)	Tuberculosis
30.	Bhui aonla	<i>Phyllanthus niruri</i> L.	Euphorbiaceae	Herb	Whole plant(Decoction)	Jaundice
31.	Karanj	<i>Pongamia pinnata</i> L.	Fabaceae	Tree	Leaf (Paste)	Skin disease
32.	Buch	<i>Acorus calamus</i> (Raf.) Raf.	Araceae	Herb	Rhizome(Paste)	Fit
33.	Muledi	<i>Glycyrrhiza glabra</i> L.	Fabaceae	Herb	Root (Paste)	Fit
34.	Lahsun	<i>Allium sativum</i> L.	Liliaceae	Herb	Bulb part(Paste)	Fit
35.	Bhatkataiya	<i>Solanum anguivi</i> Lam.	Solanaceae	Herb	Root (Powder)	Asthma

Table 3. Contd.

36.	Jamrasi	<i>Cassine glauca</i> Rottb.	Celastraceae	Tree	Bark(Powder)	Rheumatism
37.	Nimbu	<i>Citrus medica</i> L.	Rutaceae	Small tree	Bark (Powder)	Rheumatism
38.	Malkangni	<i>Celastrus paniculatus</i> Willd.	Celastraceae	Herb	Root (Powder)	Rheumatism
39.	Indraj	<i>Wrightia tinctoria</i> R.Br.	Apocynaceae	Tree	Bark(Powder)	Bone fracture
40.	Chandarjot	<i>Jatropha curcas</i> L.	Euphorbiaceae	Shrub	Latex(Juice)	Menstrual problem
41.	Khakholi	<i>Maytenus senegalensis</i> Lam.	Celastraceae	Shrub	Root (Paste)	Swelling
42.	Jangli adrak	<i>Zingiber purpureum</i> (J. Koenig) Link ex A. Dietr.	Zingiberaceae	Herb	Root (Paste)	Jaundice
43.	Chodhari bela	<i>Vallis solanaceae</i> O. Ktze	Apocynaceae	Climber	Stem part (Paste)	Hanthi paon
44.	Hathpan	<i>Leea macrophylla</i> Roxb. ex Hornem.	Vitaceae	Shrub	Root (Paste)	Dysentery
45.	Anthi	<i>Helicteres isora</i> Linn.	Sterculiaceae	Climber	Root (Powder)	Dysentery
46.	Bhilwa	<i>Semecarpus anacardium</i> L.F.	Anacardiaceae	Tree	Fruit(Powder)	Diabetes
47.	Mahua	<i>Madhuca indica</i> J.F. Gmel.	Sapotaceae	Tree	Flower(Juice)	Diabetes
48.	Aparajita	<i>Clitoria ternatea</i> L.	Fabaceae	Tree	Root (Decoction)	Sciatica
49.	Chameli	<i>Jasminum officinale</i> L.	Oleaceae	Shrub	Root(Juice)	Eye disease
50.	Kardona	<i>Atropa acuminata</i> Royle. ex Lindley.	Solanaceae	Small Tree	Root (Paste)	Tonsillitis

Table 4. Number of plant species used habit wise as medicine.

S/N	District	Plant used habit wise				No. of medicinal plant
		Climber	Herbs	Shrubs	Trees	
1	Chhindwara	17	24	14	22	77
2	Betul	10	18	6	16	50

medicine by tribals of Mandla and Baster region of Madhya Pradesh. Oomachan and Masih (1992) have also studied the ethno-botany of Pachmarhi region of Madhya Pradesh. However, such documentation work in Chhindwara and Betul districts of Madhya Pradesh, India has so far not been published in detail.

Maximum numbers of plant species being used in preparation of herbal medicines are documented from 14 herbal healers of Chhindwara district. The study reveals that the Chhindwara district is rich in medicinal plants as compared to Betul

District. It has also been observed during the study that these species are being over exploited and need proper conservation.

Conclusion

The information recorded from herbal healers indicates that the tribals of these regions possess good knowledge of herbal drugs. The collective efforts of ethnobotanists, phytochemists, pharmacognostists and pharmacologists are needed to

document and evaluate the efficacy and safety of the claims. Majority of plant species used are belonging to family Caesalpiniaceae, Euphorbiaceae and Liliaceae in district of Chhindwara. The preparations are made from leaves, bark and underground parts (like root, rhizome etc). The percentage of method of preparation of various formulation includes plants applied as paste are 31%; those crushed in the form of powder and applied are 33%; applied as decoction are 22%; applied as extract and juice 11% and other applied as oil, smoke and chew are 3%. While in

Betul district majority of plant species are used from family Fabaceae, Liliaceae and Celastraceae.

The preparations made are same as in Chhindwara district from leaves, bark and underground parts (like root, rhizome etc). The percentage of method of preparation involve number of plants applied as paste are 24%; those crushed in the form of powder and applied are 56%; applied as decoction are 10% and applied as extract and juice are 10%. Some of the patients treated by traditional herbal healers of the study sites have been contacted and enquired about the success of the treatment given to them. Most of the patients are found fully satisfied and having full faith with the treatment given by herbal healers for cure of various diseases prevailing among tribal/village communities. The duration of the treatment in general was from seven to fifteen days as documented from the herbal healers. The formulation of the medicine prepared from a particular plant/plant parts have also been documented from the traditional herbal healers and presented in the tables.

To test the scientific validity of the herbal preparation or drugs, clinical studies are required to be conducted. This can establish therapeutic properties of these preparations for safe and longer use. The indigenous knowledge and uses of herbal medicinal plants of a particular area have to be analyzed to develop appropriate management measures (*ex situ* and *in situ* conservation) for best utilization of natural resource.

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