

*Full Length Research Paper*

# Ethnomedicinal plants used for different ailments by the tribals of district Raisen (M.P.), India

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The present investigation was carried out for documentation of native medicinal plants which are exploited for medicinal purposes in the Raisen district of Madhya Pradesh. The district is rich in repository economically as well as ethnomedicinally for important for plants. Information was collected from tribals using interview and semi-structural questionnaires among the traditional medicine men of the area. First hand information on ethnomedicinal uses of plants, part used, mode of administration, botanical name, and family is enlisted in the paper which deals with 25 medicinal plants used for different dreaded diseases like diabetes, cancer, sexual disorders, ulcers, etc. These plants are arranged alphabetically in table.

**Key words:** Medicinal plant, medicine men, tribals, ailment.

## INTRODUCTION

Medicinal plants play a vital role in providing health care to humans since the dawn of civilization. It is evident that the Indian people have tremendous passion for medicinal plants and they use them for wide range of health related applications. The demand for medicinal plants is increasing in both developing and developed countries and the bulk of their material trade is still from wild harvested plants.

Humans from prehistoric times had been dependent on plant medicines and their dependence on plants for treatment of diseases is proved by facts of Ayurveda. But the knowledge is being lost, because of rapid progress in allopathic medicines and modernization of tribesman.

The district harbours a variety of trees, shrubs, herbs, climber and grasses. The ethnobotanically important plants are the treasure for the Raisen district. Culture of tribals revolves round the plants and plant products. Though, they are changing slowly towards relatively modern ways of agriculture, animal husbandry, etc., but when it comes to therapeutics, most of them rely upon their traditional ways of curing ailments, which they have

learned from generation of experience of their ancestors. The tribal people cure their ailments by using crude drugs remedies. They use different parts of plants which are locally available in curing different types of diseases. They also use plants in the treatment of animals. A perusal of literature reveals that though a lot of work has been done on the ethnobotany of medicinal plants in Madhya Pradesh, but no work has been done in Raisen district. Therefore, an attempt has been made to find out the medicinal plants used against different diseases in rural and tribal areas of the Raisen district. The field observation and collection of specimens were made from July 2008 to January 2011, while surveying the district floristically. The plants were identified with the help of flora of British India (Hooker, 1897), Flora of Bhopal (Oommachan, 1976), and Flora of Marathwada (Naik, 1998). Some of the noteworthy contributions in the field of ethnobotany of the centrally located state of the country encompass the work of Jain (1963, 1964, 1987), Khan and Chaghtai (1979, 1981), Khan et al. (1981, 1984, 1992), Ahmad Zahoor et al. (2010a, b), Khan and Zaheer ul Haque (1981), and Ahirwar (2010). As is evident from these references, there is very little ethnomedicinal information available for the Raisen district.

The present study is therefore aimed to investigate and

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document the oral heritage of ethnobotanical knowledge of the ethnic people of Raisen district. The ethnic groups in this area are Gond, Bhils, Pardhan, Agariya, Ojha, Nagarchi and Solhas who have been traditionally using the local plants particularly for the treatment of various diseases.

In case of any health disorder, they instinctively resort to the plant material available at hand for the treatment of ailments they are suffering from. Even in these days of chemo and radiotherapy, they practice their own mode of treatment on which they have firm belief. The knowledge of medicinal utility has descended in the form of oral folklores and is based on generations of experience of their forefathers.

## MATERIALS AND METHODS

The present study was carried out in Raisen district of Madhya Pradesh, which is rich floristically and is the home of a number of tribal communities, especially Gonds and Bhils. Raisen district lies in the central part of Madhya Pradesh. The district is situated between the latitude 22°47' and 23°33'; North and longitude 77°21 and 78°49 East. It is bounded in the west by Sehore district, in the north by Vidisha district, in the east and south east by Sagar district, in the south east by Narismhapur district, and in the south by Hoshangabad and Sehore districts. The total area of the district is 8,395 km<sup>2</sup> which contains 1.93% of the state's total area.

Regular field trips were conducted in Raisen districts from July 2008 to January 2011 for collecting ethnobotanical data. The tribal people, including local healers, who regularly use the plants, provided important information regarding ethnomedicinal uses of the plants. Information obtained from more than one source has been incorporated, we took interviews, noted down and taped their interviews, recorded their knowledge of the plants. Collected plants were identified with the help of Indian standard floras. The plants were photographed in their natural habitat, collected in vasculum and brought to the laboratory for botanical diagnosis with the help of various angiospermic floras available in the libraries of Government Benazeer Science and Commerce College, Bhopal. After a plant species was identified, it was given a voucher specimen number. Using a plant press, the collected plants in whole (small herbaceous plants) or part (twigs of perennial plants) were made into herbarium sheets with such details as botanical name, local name, family, habit, habitat, date and place of collection and name of the collector and the name of the professor who confirmed its identity. The herbarium sheets were deposited in the Herbarium of Government Benazeer Science and Commerce College, Bhopal.

Medicinal properties of the plants were learned through interviews with tribals/village medicine man. A number of group discussions were also conducted during the period of investigation. Voucher specimens were collected from the field during the flowering and fruiting periods. While noting ethnobotanical information, every care was taken to record the local names of the plants, part used, method of drug preparation and dosage uses. A total of 26 informants were interviewed independently to avoid other influences. Some social factors like age, gender (in the present study only males were contacted) and education were also recorded during interviews. The preparation methods of medicinal plants and dosage of application were also collected. The informants were suitably compensated for their time they spared. Questionnaires were devised to get information about various aspects of the plants, such as traditional uses, collection methods, time of collection, part used, distribution, availability and abun-

undance, etc. Most of the participants belonged to 35 to 70 years age groups.

Prior to the administration of questionnaires, conversations with the informants were held with the assistance of local development agent working in the study area to elaborate the objectives of the study and to build on trust with the common goal to document and preserve the knowledge on medicinal plants. The sampled informants were 26 males ranging from the age 35 to 70 years old (e.g. Kailash (65 years), Ramesh Singh (35 years), Shankar Kanwar (47 years), Bagi Panika (68 years), Sunil Sharma (33 years), Balram Singh Thakur (38 years), Murli Sai (45 years), Nistor Kunji (55 years), Ramullas Beek (40 years), Gopal Singh (60 years), Laxman Singh (70 years), Lodha Baiga (60 years), Lallu Bai (55 years) and Jay Sai (43 years), etc). Date on disease treated, plant parts used, method of preparation of the remedy, details of administration, dosage, any noticeable side effects, etc., were collected. Voucher specimens and pictures of the reported medicinal plants were collected during regular systematic survey in the fields.

The objective of this study was to study the ethnomedicinal plants used for different ailments and suggest appropriate strategies for research development and sustainable management. At the initial stage, it was very difficult to precisely decide the names of the ethnomedicinal plants of the study area about which detailed studies were to be made. A list of the important medicinal plants of the study area was prepared (Haines, 1916). This was prepared on frequent field visits, study of literature and discussions with herbal precautioner. Thereafter, the species for detailed studies were selected. The criteria for selection were based on occurrence of the species in different habitats, their importance and relatively ethnomedicinal plants for traditional uses in the area. Based on these considerations, the following species were selected for the ailments of different disease by the tribes of the Raisen district as shown in the Table 1. *Barleria prionitis* L., *Boerhaavia diffusa* Linn., *Bombax ceiba* L., *Bougainvillea spectabilis* Willd., *Bryophyllum pinnatum* (Lam.) Kurz, *Cajanus cajan* (L.) Mill Sp., *Caesalpinia crista* Linn., *Calotropis gigantea* (L.) R.Br.ex Ait., *Carica papaya* Linn., *Cassia alata* Linn., *Catharanthus roseus* (L.) G.Don., *Celosia argentea* L., *Chrysanthemum indicum* DC., *Cissus quadrangularis* L., *Cordia dichotma* Forst, *Cuscuta reflexa* Roxb., *Datura innoxia* Mill., *Ehretia laevis* Roxb., *Eichhornia crassipes* Sohns., *Ficus bengalensis* Linn., *Gloriosa superba* L., *Grewia tiliaefolia* Vahl., *Helicteres isora* L., *Ipomoea fistulosa* Mart., and *Solanum nigrum* L. It is interesting to note that the tribals and the village medicine man not only make use of locally available wild plants species, but also prescribed, commonly occurring ornamental plants, as shown in Table 1 that species such as *C. roseus*, *B. spectabilis*, *C. papaya* and *C. alata*, etc., find their usage in herbal therapies involving tribals and villagers living in the remote forest areas or its vicinity.

## RESULTS

A total of 25 plant species belonging to 21 families are said to possess the ethnomedicinal properties. Most of the recipes are given by the traditional healers while others were collected from the herbalists and tribals. The methods of preparation and the plant parts used as well as the application are also included in this work. The detailed observation is presented in Table 1 enumerating the scientific name, local name, family, part used, voucher specimen number of the plant and uses of the plant are alphabetically arranged. The data of medicinal plants were collected from twelve selected site of the Raisen district, that is, Chainpur, Hinotiya, Siyalwara,

**Table 1.** Ethnomedicinal plants used for different ailments in Raisen district (M.P).

S/N	Botanical name, family, common name, voucher specimen number	Part used	Disease	Administration
1	<i>Barleria prionitis</i> L., Acanthaceae, Piya bansa, ZAL110	Leaves	Hair fall	Leaves are ground to fine powder and water is added to it. It is applied on the hair for 4 to 5 days mostly in the night then the hair is washed after 8 to 10 h. The hair will become shiny and very strong.
2	<i>Boerhaavia diffusa</i> L., Nyctaginaceae, Patherchat, ZAL209	Root	Kidney stone	The dried roots (12 to 24 g) are ground into a fine powder, mixed with two cups of milk or water and given to the patient twice a day for 15 days.
3	<i>Bombax ceiba</i> L., Bombacaceae, Saimar, ZAL125	Bark	Urinary tract infection	The bark is ground to fine powder, mixed with water (2 L) is put into the pot being covered by cloth, it is given thrice a day up to three days. The patient suffering from the UTI can be cured.
4	<i>Bougainvillea spectabilis</i> Willd., Nyctaginaceae, Beganbeliya, ZAL205	Stem	Hepatitis	Ten gram of dry stem with 2 to 4 glass of water is boiled for the few minutes and given to the patient after its cold twice a day for about one week.
5	<i>Bryophyllum pinnatum</i> (Lam.) Kurz, Crassulaceae, Badabaekla, ZAL166	Leaves	Chronic cough	One fresh leave is daily chewed for about 5 to 6 days can control the chronic cough in patients.
6	<i>Cajanus cajan</i> (L.) Mill Sp., Fabaceae, Arhar, ZAL202	Leaves	Jaundice	The juice of leaves is mixed with black pepper and butter milk. Two spoonful of this mixture is given to the patient thrice a day for two weeks to cure the patient.
7	<i>Caesalpinia crista</i> L., Caesalpinaceae, Kanghi, ZAL108	Seed	Itching	The fresh seeds are crushed and the oil obtained is applied on the affected area of skin for about 2 to 3 days.
8	<i>Calotropis gigantea</i> (L.) R.Br.ex Ait., Asclepiadaceae, Safeed akoua, ZAL198	Latex	Scorpion sting	Latex is applied on the sting portion twice a day for two days.
9	<i>Carica papaya</i> L., Caricaceae, Papita, ZAL183	Fruit	Hypogalactogens	The fruits are given to the women thrice a day for about two weeks which increase the secretion of milk.
10	<i>Cassia alata</i> L., Caesalpinaceae, Kasundi Bruch, ZAL195	Stem bark	Severe headache	Fresh stem bark paste is applied on forehead, twice a day for 3 days.
11	<i>Catharanthus roseus</i> (L.) G.Don., Apocynaceae, Sadasagwan, ZAL187	Root	Arthritis	The paste of the roots is applied on the affected part for one or two weeks for relief in the pain.
12	<i>Celosia argentea</i> L., Amaranthaceae, Kisra, ZAL146	Leaves	Fever	The decoction of the fresh leaves is given to the patient one cupful twice a day for about 2-4 days to recover from the fever.
13	<i>Chrysanthemum indicum</i> DC., Asteraceae, Sewanti, ZAL218	Flower	Enteritis	The fresh flowers (10 to 15) are ground into the fine powder mixed with sugar (Misri) given to the patient twice a day for 2 to 4 days.
14	<i>Cissus quadrangularis</i> L., Vitidaceae, Harjoodu, ZAL193	Stem	Fracture	The fresh stem (5 g) is crushed into a fine paste mixed with half glass of milk and given to the patient twice a day for three days.
15	<i>Cordia dichotma</i> Forst., Boraginaceae, Rusalla, ZAL107	Root	Flatulence	The fresh (100 g) roots with (50 g) misri are crushed and mixed with a cup of water and taken twice a day for 3 to 4 days.
16	<i>Cuscuta reflexa</i> Roxb., Convolvulaceae / Cuscutaceae, Amarbel, ZAL182	Whole plant	Boil	The paste of the whole plant is wrapped on the boil for remedy. It is given twice a day for about one week.
17	<i>Datura innoxia</i> Mill., Solanaceae, Dhatura, ZAL133	Leaf	Asthma	The dried hundred grams of leaf powder is smoked as a cigarette. It is useful for the asthmatic patients and given twice a day for about one month.

Table 1. Contd.

18	<i>Ehretia laevis</i> Roxb. , Ehretiaceae, Bajarjanti, ZAL214	Bark	Mouth ulcer	The fresh bark (12g) are chewed for 10 to 15 minutes twice a day for 2 to 4 days. It also strengthens the teeth and gums.
19	<i>Eichhornia crassipes</i> Sohns., Pontederiaceae, Jalkhundi, ZAL170	Leaves	Fainting	The leaves paste is applied on the forehead twice a day for about two days to cure the fainting.
20	<i>Ficus bengalensis</i> L., Moraceae, Bargad, ZAL210	Latex	Gum bleeding	Latex is applied internally in mouth on wounds for gum bleeding, thrice a day for 5 to 7 days.
21	<i>Gloriosa superba</i> L., Liliaceae, Ladael, ZAL237	Tuber	Abortion	The tuber extract is prepared in cold water and administered in doses of one spoonful twice a day for 5 doses to be taken in three months.
22	<i>Grewia tiliaefolia</i> Vahl., Tiliaceae, Lapadpanda, ZAL226	Leaves	Burns	The paste of the fresh leaves is made and is applied on the affected part, twice a day for about 2 to 3 days. Powder of the bark is used as an aphrodisiac.
23	<i>Helicteres isora</i> L., Sterculiaceae, Marolpahli, ZAL155	Fruit	Indigestion	The fresh 50 g of young fruits are crushed with a cup of water and given twice a day for about three days.
24	<i>Ipomoea fistulosa</i> Mart., Convolvulaceae, Tamasur, ZAL241	Root	Paralysis	The fresh roots paste is applied on the affected part and massaged twice a day for about one month to cure the paralysis.
25	<i>Solanum nigrum</i> L., Solanaceae, Makoo, ZAL147	Leaves	Swelling (Oedema)	The fresh leaves are used for cooking and are taken like vegetables for 2 to 3 days twice a day, can cure the swelling.

Deori, Goharganj, Begamganj, Gairathganj, Dimara, Nirwari, Hardoot, Barna and Sultanpur. The medicinal attributes to various plant species were confirmed from at least 5 persons who shared the same opinion for the efficacy of a particular species against a specific ailment. The workers also tried to contact the local patients who were administered the crude herbal drugs in case of suffering. Majority of them benefited from the local herbal therapies and they also claimed that they seldom go for modern therapies which are not so effective and beyond their reach; instead they have firm faith in tribal medicines and those prescribed by village medicine man.

In the earlier enumeration (Table 1), plants are arranged in alphabetical order, followed by family, botanical name, part used, local name and mode of administration of each species reported.

During the course of the survey in the tribal communities of Raisen district, it was discovered that there are several of such plants which are medicinally very important and the people of the district are using them. The district has so far not been explored floristically and it is still underexplored. So far as the richness of the medicinal plants is concerned there are several of such plants which are largely used for the treatment for a variety of ailments.

## DISCUSSION

Traditional knowledge of Malwa plateau medicine is a good illustration of poor communities, fighting even

incurable diseases through the traditional methods and even for their livestock, through these traditional herbal medicines. The indigenous traditional knowledge of medicinal plants and therapies of various local communities has been transmitted orally for centuries and is becoming extinct, due to changes in traditional culture and introduction of modern technologies. Hence, these traditional practices need proper documentation and the present study is an attempt to collect/explore, preserve and proper documentation of medicinal plants which are being used traditionally. The investigation revealed that the local people, herbalist and Vaidyas have explored a number of plant species to cure various ailments. Qualitative analysis of the present study reveals that a total of 25 plant species were identified. While on the basis of the plant parts used, it was observed that the maximum plant species were found to be used as various parts, such as leaves, roots, stems and bark. It is evident from the present study that the tribal communities are dependent on a variety of plants to meet their requirements and beliefs to cure many diseases. The different plant parts are used for medicinal preparation, mode of administration, dosage and other human consumption. In some cases, the whole plant parts are utilized only for medicinal purposes.

The plant parts are generally used by the ethnic communities to cure some important diseases, namely, hair fall, urinary tract infection, boils, piles, arthritis, paralysis, burns, swelling, indigestion, asthma, gum bleeding, chronic cough, flatulence, fracture, kidney stone and severe headache. A total 25 plant species, belonging

to 21 families are used in day-to-day life of the tribal people.

The elder ethnic people are familiar with the plant species and they are used for common ailments, and the plant remedies are being used regularly. Majority of the young generation do not know many plants and their medicinal values. Only few younger ones are following the medicinal practices and the traditional knowledge of the elders and healers. Information that is related to women's health problems, namely, urinary infections, bleeding and pregnancy are difficult to acquire and treat. Such curative information is kept with secret, with the belief that the medicines would lose their effectiveness if revealed to other people. So, scientific cultivation, conservation and sustainable use of plant species by ethnic communities would be highly advantageous for socio-economic growth, in conservation of rare and endangered plant species and the indigenous knowledge for the future generations.

Seeing the vastness of the state of Madhya Pradesh and its rich floristic heritage, studies pertaining to floristics and ethnobotany are rather meager. Some notable contributions from some parts of the Madhya Pradesh, are Jain (1963, 1964, 1987), Jain and Singh (1994), Judah and Oommachan (1994), Khan and Chaghtai (1979, 1981), Khan and Haque (1981), Khan et al. (1984, 1992) and Masih (1997). Recently, Srivastava (2011) explored the medicinal plants used by tribals of Bandhagarh National park of Madhya Pradesh and Ahirwar and Singh (2011) have reported some anti diabetic plants from Dindori district of Madhya Pradesh. As said earlier, studies pertaining to floristics and ethnobotany as far as the state of Madhya Pradesh is concerned and perusal of literature reveals that the district Raisen is almost unexplored from this point of view. A perusal of literature reveals that only the preliminary study of floristic of Goharganj of this district is carried out by Khan and Haque (1981), and that it was confined to recording of rainy season plants only.

It was therefore thought imperative to explore this underexplored district both from floristic and ethnobotanical view.

The claims recorded in the present study pertain to herbal drugs based on the knowledge of tribal community disseminated through oral folklores which has descended down from one generation to another and kept as a closely guarded secret. These herbal drugs which are claimed to be efficacious by the tribals or locals against a particular ailment need thorough pharmaceutical trials by the isolation of active principles on scientific lines, so that if found effective on experimental animals, it may be recommended for human who often face side effects while undergoing chemotherapies and radiotherapies. The crude herbal drugs may prove a boon for the society in India, majority of which lives below poverty line and cannot afford the sky rocketing prices of the modern therapies.

## Conclusion

The result of the present study indicates that the rich traditional knowledge of the community should be documented and preserved properly for better utilization of the plant resources. Particularly, there is a need of detail study of the medicinal plants used by the community with possible phytochemical investigation which may highlight the true value of these plant species so that they can be managed and conserved for the benefit of the local community as well as for the welfare of mankind.

The ethnomedicinal plants reported from the tribal area of the district can be put to practical use after thorough pharmacological and phytochemical trials on experimental animals and if found promising then their use can be recommended for human administration.

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