



Study on ethnobotanical utilization of plant resources of district Shajapur, Madhya Pradesh, India

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Abstract

The present study was carried out in District Shajapur of Madhya Pradesh, a region of Bhilala, Bhil and Barela tribes. A number of traditional Herbal healers, vaidhya, Ojhas belonging to the tribal community are utilizing local plants as ethno-medicine to help locals to cure many health problems traditionally. An ethno-botanical survey had been carried out in tribal dominating villages like Peerkhedi, Dumaheda, Kolukhedi and Bayda of Shajapur from 2020-2021 and resulted in the documentation of 34 medicinal plant species belonging to 23 families and 32 genera. Ethnomedicinal plants are delineated with Botanical names, followed by local names, family name, plant's part utilized, and the ethno-medicinal uses have been provided alphabetically.

Keywords: documentation, ethnobotanical, herbal, survey, traditional

Introduction

The term Ethnobotany was given by American Botanist John William Harshberger in 1896. It is a discipline which deals with the uses of the plants traditionally for fibre, fodder, dyes, tannin, resin and gum by the society and describe its uses as ethno-medicine. Ethnobotanical studies give us an intense sensitivity and grasp of the lavishness and intimacy of relationships between nature and people. Primeval herbal healers throughout the world understand very well their surrounding flora and fauna. Indigenous people are the people who live in euphony with the nature and work as link between environment and local people. The culture of tribals, life style, and their traditions have remained almost static since several years. The knowledge gathered by native people during hundreds of years, through a long series of observations and practice transferred from one generation to another by verbally for power possessed by ethnomedicinal plants in cure of various health problems. The assemblage of indigenous knowledge is important for a sustainable management and conservation of natural resources receives more and more appreciation (Posey, 1992) ^[16]. Furthermore, an increased importance on ethnomedicinal plants is being placed on probable good economic benefits of the medicinal use of tropical forest produces rather than pure timber harvesting of resources.

Shajapur is one of the agriculture-oriented districts in Madhya Pradesh, India which is placed wholly on the Malwa Plateau, the centre portion of the state. All study village Peerkhedi, Dumaheda, Kolukhedi and Bayda have more than 75% tribal population of Bhilala, Bhil and Barela tribes. Local people first used faith healing, ethno-medicine next and modern mode of medicine only when the first two mode not worked. They have not made too many changes in their life style also have impact of Rajasthani culture.

Earlier many studies on the ethnobotany in Madhya Pradesh on traditional health care carried out by numerous ethno- botanists such as Alawa and Ray (2012) ^[1], Bhalla et. al. (1992) ^[2], Bhattacharya and Dubey (2004) ^[3], Choudhary and Upadhyay (2012) ^[5], Jain (1963, 1975, 1981) ^[6, 7, 8], Maheshwari (1989 & 1996) ^[9, 10], Muwel and Kher (2016) ^[13], Rai et. al. (1996, 2002, 2003) ^[17, 18, 19], Rai et.al. (2004 a, 2004 b, 2004 c) ^[20, 21, 23], Rai and Nath (2005) ^[22], Saxena and Shukla (1971) ^[25], and Saxena (1988) ^[26].

In Shajapur District there is no special work has been done in context of ethnobotanical utilization of plant resources because of low population of tribal community. So, the present study was taken up to explore information on ethnomedicinal plants used by Bhilala, Bhil and Barela tribe of Shajapur, for treatment of various health problems and disorders recorded during field trips has been further documented.

Materials and Methods

A survey was conducted during 2020 to 2021 to collect various information on the medicinal uses of plants found in the Bhilala, Bhil and Barela inhabited villages Peerkhedi, Dumaheda, Kolukhedi and Bayda. The study site placed at 23° 60' North latitude and 76° 34' East Longitude and occupy very less 0.5 % area as open forests. The study Area covered by tropical dry deciduous and thorny forests of west division forests of Madhya Pradesh (Champion and Seth, 1968) ^[4]. During collection of information on ethno- medicinal plants special attention was paid to record information from local Vaidhyas, Ojhas and traditional herbal healers of ethnomedicine. There were 8 ethnomedicine practitioner (5 males and 3 females) between the ages of 42 to 76 in the study area, among them 4 were regular tribal practitioners. Ethnobotanical data were accumulated according to the methodology

proposed by Jain. The ethnobotanical data of medicinal plants such as local name, mode of medicine preparation and their uses were congregated through discussions, questionnaires and interviews among the herbal healer practitioners at their place in their local language. Specimens were identified with the help of Rao & Shastry's Flowering plants of Indore, M. P. (1964) [24], Trees of India (Mukherjee, P., 2008) [12], Flora of Bhopal (Oommachan, M.1978) [14], Flora of Madhya Pradesh Vol. II (Mudgal *et al.*1997) [11], Flora of Madhya Pradesh Vol. III (Singh *et al.*2001) [27].

Results and Discussion

The present investigation reported 34 species of ethno-medicinal plants belonging to 32 genera and 23 different families. For each species their botanical name, local name, family, parts used, and ailments treated are provided. Traditional herbal healers are using these medicinal plants to cure various diseases like, skin problems caused by fungus, bacteria, fever, cough and cold, wounds, diabetes, asthma, rheumatism, urinary problems, piles and poison bites etc. Trees (14 species) were found to be the most used plants followed by herbs (14 species), shrubs (3 species) and climbers (3 species) as ethnomedicine. The most dominant families in the study were, Fabaceae (5 species), Euphorbiaceae, Asclepiadaceae and Combretaceae (3 species each), while Amaranthaceae (2 species) and Acanthaceae, Aristolochiaceae, Solanaceae, Boraginaceae, Menispermaceae, Myrtaceae, Rubiaceae, Nyctaginaceae, Anacardiaceae, Liliaceae, Sterculiaceae, Asteraceae, Lamiaceae, Moraceae, Balanitaceae, Papavaraceae, Oxalidaceae and Rutaceae (1 species each). The information on the ethno-medicinal plant used by the herbal healers was arranged alphabetically species name following as (Table 1):

Table 1: Ethnobotanical data with botanical, local name, plant part used and Ethno-medicinal Uses.

S. No.	Botanical Name	Local Name	Family	Plant part used	Ethno-medicinal uses
1	<i>Acacia leucophloea</i>	Reonjha	Fabaceae	Bark	Use as Antidote in snake bite and also in bronchitis.
2	<i>Achyranthus aspara</i>	Latjira	Amranthaceae	Seed	Powder of seed uses for a week, twice a day to cure bleeding piles.
3	<i>Adhatoda vasica</i>	Safed Adusa	Acanthaceae	Leaves	Kadha used to cure asthma and cough.
4	<i>Aegle marmelos</i>	Bilva	Rutaceae	Fruit	Fresh pulp of ripen fruit used to cure bad stomach and diarrhoea.
5	<i>Allium sativum</i>	Lahsoon	Liliaceae	Bulb	Two cloves every day in morning with luke warm water to cure any type piles
6	<i>Amaranthus spinus</i>	Kateli bhaji	Amranthaceae	Whole plant	Poultice of whole plant is used to cure injuries and swelling of feet.
7	<i>Argimone maxicana</i>	Pili kateri	Papavaraceae	Latex	Fresh yellow latex used to cure ringworm effectively.
8	<i>Aristolochia indica</i>	Keeramar	Aristolochiaceae	Root	Used in skin diseases and heal wounds.
9	<i>Balanitis aegyptica</i>	Hingot	Balanitaceae	Fruit	Fresh pulp of fruit used to cure diabetes.
10	<i>Boehrvia diffusa</i>	Punarnava	Nyvtaginaceae	Whole plant	Used in treatment of rheumatoid arthritis.
11	<i>Butea monosperma</i>	Palas	Fabaceae	Flower	Flower juice uses to treat ophthalmic diseases.
12	<i>Calotropis procera</i>	Aakda	Asclepiadaceae	Latex	Latex directly applied on fungal and other skin infections.
13	<i>Cassia fistula</i>	Amaltas	Fabaceae	Bark	Paste used for treatment of inflammatory swelling and wounds.
14	<i>Cordia dichotoma</i>	Lasoda	Boraginaceae	Fruit	Gummy fruits used to heal joint pain.
15	<i>Dhatura strumanium</i>	Dhatura	Solanaceae	Fruit	Paste applied on scalp to treat falling hairs.
16	<i>Emblica officinalis</i>	Amla	Euphorbiaceae	Fruit	Fresh fruit juice used to improve body immunity system.
17	<i>Euphorbia hirta</i>	Doodhi	Euphorbiaceae	Shoot	Upper part of plant used to cure respiratory ailments.
18	<i>Ficus glomerata</i>	Umbar	Moraceae	Bark	Used to treat dysentery.
19	<i>Helicteres isora</i>	Marorphali	Sterculiaceae	Root	Powder used to cure abdominal colic pain.
20	<i>Hemidesmus indicus</i>	Antmool	Asclepiadaceae	Root	Used root powder to treat leprosy.
21	<i>Ocimum sanctum</i>	Tulsi	Lamiaceae	Leaves	Used in respiratory problems also in skin diseases.
22	<i>Oxalis corniculata</i>	Amrul	Oxalidaceae	Whole plant	Used to cure urinary tract infections.
23	<i>Phyllanthus niruri</i>	Bhui amla	Euphorbiaceae	Branches	Poultice used to treat skin ulcers.
24	<i>Pongamia pinnata</i>	Karanj	Fabaceae	Flowers	Used to cure bleeding haemorrhoids.

25	<i>Portulacaoleracea</i>	Kulfa	Portulacaceae	Leaves	Used to remedy liver disorders.
26	<i>Semecarpus anacardium</i>	Bhilma	Anacardiaceae	Fruits	Oil used to heal foot cracks.
27	<i>Syzygium cumini</i>	Jamun	Myrtaceae	Bark	Used to cure sore throat and asthma.
28	<i>Tephrosia purpuria</i>	Surpanka	Fabaceae	Whole plant	Poultice used to treat leprosy.
29	<i>Terminalia arjuna</i>	Kohu	Combretaceae	Bark	Bark decoction used to cure diabetes.
30	<i>Terminalia bellerica</i>	Bahera	Combretaceae	Fruit	Used to treat respiratory tract infections.
31	<i>Terminalia chebula</i>	Harad	Combretaceae	Fruit	Commonly used roast fruit to cure cough and sore throat.
32	<i>Tinospora cordifolia</i>	Amrata	Menispermaceae	Twig	Decoction of twig used to cure viral fever.
33	<i>Tridax procumbens</i>	kanphuli	Asteraceae	Upper Shoot	Poultice applied on fresh wounds to cure.
34	<i>Tylophora indica</i>	Dambel	Asclepiadaceae	Leaves	Powder used to treat rheumatism and syphilitic rheumatism.

Herbal practitioners of Bhilala, Bhil and Barela tribes uses various plant parts and specific ethnomedicinal dosages for the treatment of various diseases. The plants are eaten uncooked, as blaze product, or in the form of a decoction, as blend for oral therapeutics and raw pulp or lotion when used exteriorly. The plant parts which generally uses for ethnomedicinal purposes are sometime whole plant, root and stem barks, leaves as paste, root, stem and fruits as fresh or dry, the complete aerial parts, and flowers as part or whole. Fresh juice of whole plant or any part, powder of crushed or burned part of plant and paste of different parts are the main methods of preparation, either for oral inhalation or external application. Mainly tree and herb species are used in that region and the status of vegetation is not good in the area as it covers mostly agriculture field area. Sometimes they mix several plants part as ingredients to cure problem immediately. In general herbal healers are using fresh plant part for the preparation of medicines, but in the absence of fresh plant parts dried parts are also used. In the study area life style of people particularly with respect to healthcare practices has rarely any change even in the present covid crisis conditions most people rely on their ethnomedicinal healing methods.

Conclusion

The information collected from the present study about the medicinal plant use by the Bhilala, Bhil and Barela tribes of Shajapur need a thorough phytochemical investigation for best utilization, including alkaloid extraction along with necessary clinical trials. Those practices are very important in executing mass awareness considering the need for preservation of such ethnomedicinal plants and also in the enhancing of ethno-medico-botany knowledge and conservation and improvement of the gene bank of such ethnomedicinally plant species before they are become rare in vicinity. Unsystematic use of plant resources in study area has harmful effect on the flora and reports very less plant species diversity. Constantly more attention on any ethnomedicinal important species can also lead to the extinction of other species. People of study area believe on ethnomedicine and mostly they gone to ojhas, vaidhyas for treatment of various health problems, because of the poor health care condition in the region. There will be need to done lots of work in this propitious field with the active support of local people so that importance of these ethnomedicinally plants could be classified for our upcoming generations with enhanced health care conditions.

Acknowledgments

The author is grateful to the local traditional healers of Bhilala Bhil and Barela tribe of Shajapur for sharing their conventional knowledge on ethno-medicines. I also thank to staff of T. F. R. I., Jabalpur, Madhya Pradesh (India), for helping in identification of collected ethno-medicinal plant specimens with their herbaria.

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