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TRADITIONAL PHYTOTHERAPY FOR VARIOUS DISEASES BY THE LOCAL RURAL PEOPLE OF BHARAI VILLAGE IN THE KULLU DISTRICT OF HIMACHAL PRADESH (INDIA)

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Key words:

Phytotherapy, Bharai Village, Himachal Pradesh, Documentation

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ABSTRACT: An ethno-medicinal survey was undertaken in Bharai village of Kullu district in Himachal Pradesh to collect the information on the use of medicinal plants for the various diseases rampant in the area through questionnaire and personal interviews of the traditional health healers/rural people The investigation reveals that 20 plants belonging to the 16 different families are utilized by local health healers/rural people in traditional phytotherapy. This study also reveals that many people of this region still continue to rely on traditional medicine for their primary health care. There is a little documentation of ethno-medicinal knowledge was carried out in this region. In addition, several wild medicinal plants are declining in number due to destruction and unscientific collection of plants from forests. Hence there is an urgent need for exploration and documentation of the traditional knowledge in order to conserve the local ethno-medicinal plants. Details of medicinal plants are described alphabetically with their botanical name, family, local name, part used, disease/ailment and ethno medicinal uses.

INTRODUCTION: Bharai is a small Village in Kullu Tehsil in Kullu District of Himachal Pradesh State, India. It comes under Peej Panchayat, 112 km from State capital Shimla. It is surrounded by Naggar Tehsil towards North, Drang Tehsil towards South, Mandi Tehsil towards South, Chauntra Tehsil towards west. Mandi, Sundarnagar, Hamirpur, Keylong are the nearby Cities to Bharai.

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Phytotherapy promotes proper utilization and also to conserve these plant resources for further future use. As per different reports India is one of the richest biological heritages with more than 50 million tribal people under 300 tribal communities, constituting about 8% of the total population of the country [2, 22]. About 15% of the total geographical area of the country is inhabited by the tribal's [1, 6].

The tribal ethno-botanical information is significant not for the tribal people themselves, but also beneficial for the whole world. Unfortunately, these old civilizations, traditional skills and beliefs are going to be lost due to modernization, industrialization and also by discarding the traditional lifestyle by younger generation. The people of the tribal areas are the repository of accumulated experience and knowledge about

traditional uses of medicinal plants. But due to modern civilization into tribal areas, knowledge about the use of traditional herbal wealth is vanishing rapidly. It is well reported by all India ethnobotanical survey by Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India, that about 7500 plant species are used in traditional medicinal system by 4635 ethnic communities (Pushpangadan 2001). World community is facing challenge to inventories and records all ethnobotanical information before the traditional cultures are lost forever.

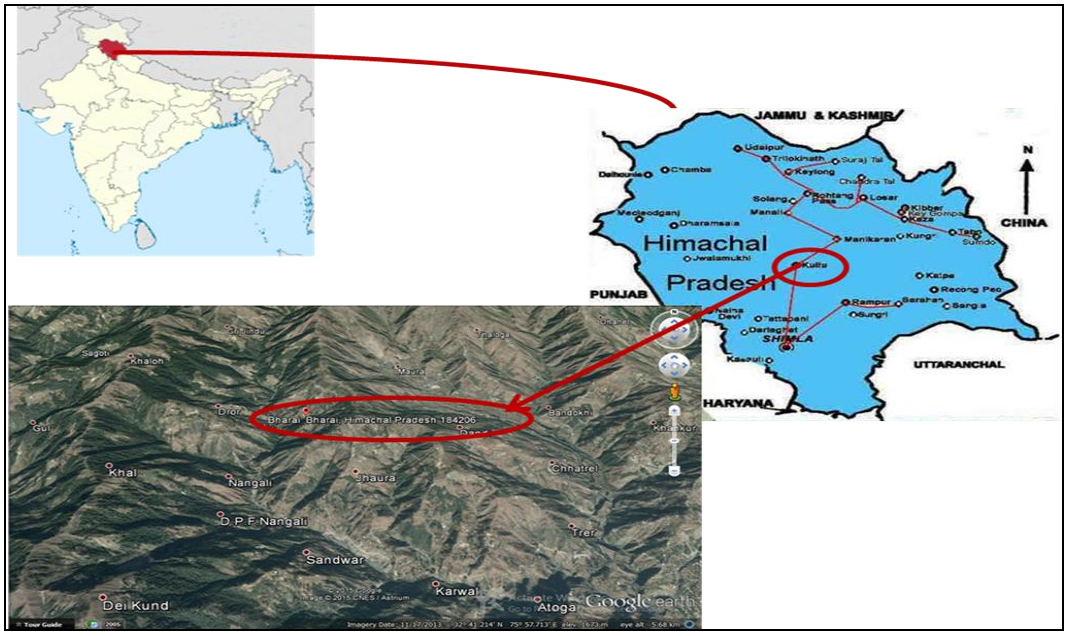

FIG. 1: STUDY AREA

The state of Himachal Pradesh has been extensively explored floristically by various workers such as: Atkinson 1882; Hooker 1872-1897; Collett 1902, with emphasis on taxonomy. Sharma *et al* 2014, has documented the ethno-botanical plants Jwalamukhi with special reference to status and significance of medicinal plants. Since no documentation has been done in Bharai village, the present work is an effort to bring in light its beauty and people's indigenous knowledge. Studies on diversity of medicinal and aromatic plants in different regions of the state have also been well known, such as: Kangra valley[1, 39], Kullu [25, 98, 12], Chamba[15, 27]. As per earlier reports, the estimated number of higher plant species (angiosperms and gymnosperms) on this planet is 250,000 [4] with a lower level at 2, 15,000 [10, 11] and an upper level as high as 5, 00, 000 [37, 26]. Of these, only about 6% have been screened for biologic activity, and about 15% have been evaluated phytochemically [40].

FIG.2. BHARAI VILLAGE, HIMACHAL PRADESH (HP)

FIG. 3: LOCAL HEALERS OF THE VILLAGE BHARAI, HP

FIG.4: COOKING LOCAL DISHES BY THE FEMALE RESIDENT OF THE VILLAGE

It is a fact that the 25% of all medical prescriptions are based on substances derived from plants or plant-derived synthetic analogues [17]. Himachal Pradesh a hilly state has rich plant diversity due to varying degree of agro climatic zonation. In one of the earlier report it is clearly mentioned, that about 3500 known plant species recorded in the state and about 500 are reported on the medicinal value [8]. Keeping this in view, many researchers have explored time to time the indigenous knowledge of different parts of the area [30, 13, 14] and many more are still trying.

The present study is therefore, a continuation of ongoing labors to explore the traditional knowledge and cultural practices in the study area with the ultimate aim of evaluating the indigenous plant species for diversity and utilization pattern and also to protect from disappearance. As we know that ethnobotany is entirely and fundamentally a new field of research. It is highly mentioned in different research reports that if in this field plants investigated systematically and scientifically, it will yield result of great value of the archeologists, anthropologist, plant geographer, enthnobotanist, linguistics, botanists and phytochemists [21]. The plants of Himachal Pradesh have been deeply studied by different researchers and scientists, such as: wild plants of Himachal Pradesh [29]; some commercially important medicinal plant of the Kullu forest division [38]; ethnomedicine and supplement food by Gaddis of Himachal Pradesh [6, 7] described the medicinal and the aromatic plants of Himachal Pradesh; the ethno-botanical study of the useful plants of the Kullu district in Himachal Pradesh [35].

As a part of our investigation on ethnobotanical inputs along with morphological data for reported medicinal plants from Bharai village, Himachal Pradesh, the aim of this research work is to provide precise, truthful and detailed information of reported medicinal plants to future researchers worldwide.

MATERIALS AND METHODS:

The floristic survey was conducted throughout the study period in the study area, among the local people. The plant specimens were identified, photographed and preserved with the healers. The field data was compared with literature on medicinal plants of Himachal Pradesh; some literatures of ethno-botany have also been considered. The method, which are used to collect the data: (a). Plants were identified and photographed. (b). the information was collected from the local healers of the area. (c). Interviews were conducted during structured questionnaire prepared for traditional medicinal practitioners. (d). Plants were identified and nomenclature with the help of "Flora of British India' [18].

Table 1: List of plants documented along with their family, habit, local name, part used and ethno medicinal use

Sl. No.	Botanical Name	Family	Habit	Local Name	Plant Part Used	Uses
1.	*Achyranthes aspera* Linn.	Amaranthaceae	Herb	Puth Kanda	Seeds	5-10 gm of seed paste is applied on the affected region in case of snake bite.
2.	*Albizia lebbeck* (Linn.) Benth.	Leguminosae	Tree	Shirish, Sirinh	Bark	2-3 gm of the paste of the bark is mixed with powdered paste of *Mimosa pudica* and the decoction is taken twice a day in case of malaria.
3.	*Argemone mexicana* Linn.	Papaveraceae	Herb	Bharbhand	Root	2 gm of root is powdered and taken thrice a day before food to cure malaria.
4.	*Bauhinia variegata* Linn.	Leguminosae	Tree	Kachnar/ Kariala	Root	2-3 gm of powdered root is mixed with the grinded leaves of *Murraya koenigii* and the mixture is taken for digestive problems.
5.	*Bombax ceiba* Linn.	Malvaceae	Tree	Semal, Simul	Flowers and Fruits	1-2 gm of paste of flowers and fruits are used in case of the treatment of snake bites.
6.	*Butea monosperma* (Lam.) Taub.	Leguminosae	Tree	Dhak, Palah, Plash	Resin/ Latex	5 gm of resin is used to cure chicken pox.
7.	*Cheilocostus specio-sus* (J.Koenig) C.D.Specht	Costaceae	Herb	Kemuk, Kustha	Rhizome and Root	1-2 gm of the paste of rhizome and root is applied to the cut and wounds.
8.	*Cissampelos pareira* Linn.	Menispermaceae	Shrub	Patindu, Batindu and Patha etc.	Root	5-6 gm of root is grinded and two teaspoon of the decoction is taken thrice a day for constipation.
9.	*Euphorbia royleana* Boiss	Euphorbiaceae	Shrub	Chhuien	Root	10 gm of root is grinded and the paste is applied on the cuts and wounds.
10.	*Fragaria indica* Jacks.	Rosaceae	Herb	Pallaya	Leaves, flowers, fruits	10 ml of leaves decoction used for treatment of swelling, flower decoction is used to increase the blood circulation; fruits are used externally to cure the skin disease.
11.	*Gentiana pedicellata* (D. Don.) Wall.	Gentianaceae	Herb	Tikta	Leaves	Leaves powder (5-15 gm) given with ½ glass of water in case of rheumatic pain.
12.	*Gloriosa superba* Linn.	Colchicaceae	Shrub	Nagardi	Root	10-12 gm of the root is pasted and is taken twice in case of dysentery.
13.	*Mentha longifolia* (Linn.) Linn.	Lamiaceae	Herb	Podina, Pudina	Leaves	5-10 gm of leaves is grinded and made into a decoction which is taken twice with luke warm water to cure digestive problem.
14.	*Murraya koenigii* (Linn.) spreng.	Rutaceae	Shrub	Gandhela, curry patta	Leaves	20 gm of leaves is boiled, dried and grinded to powder and the powder is taken twice a day with water in case of stomach

						worms.
15.	*Murraya paniculata* (Linn.) Jack.	Rutaceae	Shrub	Gandhela	Root	10-15 gm of root is taken with 2 gm leaves of *Cheilocostus speciosus*, the mixture is grinded and the paste is used in case of boils and blisters.
16.	*Origanum vulgare* Linn.	Lamiaceae	Herb	Lameysha	Whole Plant	Whole plant decoction (1-1/2 cup twice a day for one week) is used to cure the asthma, rheumatic pain, cold and gastric problems, tea made from leaves and flowers is useful to cure the influenza.
17.	*Rauvolfia serpentina* Benth. Ex. Kurtz.	Apoacynaceae	Shrub	Sarpgandha	Root	30 gm of root paste acts as antidote to snake venom.
18.	*Sinopodophyllum hexandrum* (Royle) T.S.Ying	Berberidaceae	Herb	Tandik, Demobkusu, Bankakri, Omosheya	Rhizomes, roots	Powdered form of rhizome (2-6 gm) given per day with honey to cure the cough and extract of (100 g) rhizome in water is given for the same.
19.	*Thalictrum foliolosum* DC.	Ranunculaceae	Tree	Pilijari, mirchadi	Root	2-3 gm of root is grinded and the paste is used to cure skin diseases.
20.	*Verbascum acaule* (Bory & Chaub.) Kuntze	Scrophulariaceae	Shrub	Jangli tambaku	Whole Plant	Whole plant is chopped into small pieces and dried in sunlight for two days and grinded to powder. Two teaspoon of the powder is used twice a day with water in case of Malaria.

RESULTS AND DISCUSSIONS: The present study was done in the month of July 2015 in Bharai village, Kullu district of Himachal Pradesh, India. In present investigation, 20 angiosperms have been documented for folklore medicinal plants used by different local healers of the village. Of these 20 documented indigenous plants 8 plants are found to be herb, 5 tree and 7 shrubs. The documented plants belong to 16 different families out of which 3 plants belong to the family Leguminosae, 2 plants belong to Lamiaceae and 2 plants belong to the family Rutaceae.

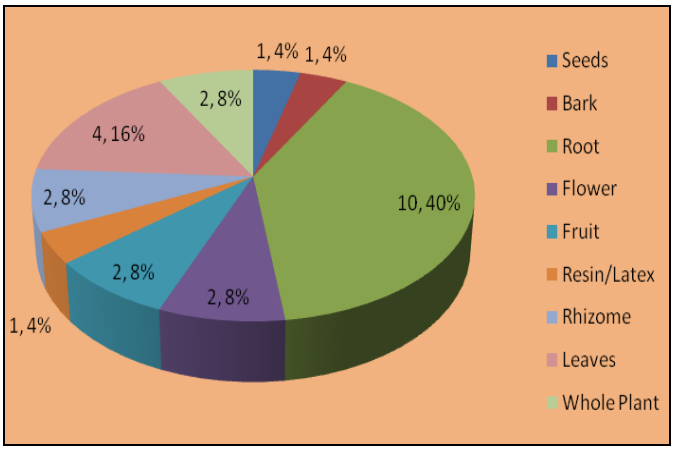

FIG. 5: PERCENTAGE AND NUMBER OF PLANT PART USED

The analysis of the indigenous plants according to IUCN red list criteria revealed that out of 20 documented plants enlisted in **Table 1**. 3 plants [*Bauhinia variegata* Linn., *Gloriosa superb* Linn., *Mentha longifolia* (Linn.) Linn.] are least concern and for 17 plants there is very less data available on their population, conservation and distribution which indicated the immediate need of documentation and assessment. Interview with the local healers of the area resulted in the documentation of 11 different diseases in which 5 diseases were documented the most with different formulations.

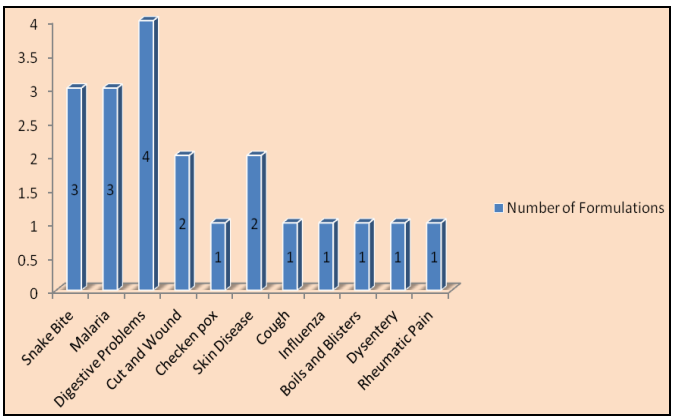

FIG. 6: DIFFERENT DISEASES DOCUMENTED WITH NUMBER OF FORMULATIONS

***ACHYRANTHES ASPERA* LINN.**

ARGEMONE MEXICANA

***BUTEA MONOSPERMA* (LAM.) TAUB.**

***BOMBAX CEIBA* LINN.**

***RAUVOLFIA SERPENTINE* BENTH. EX KURTZ.**

FIG. 7: INDIGENOUS PLANTS USED BY LOCAL HEALERS OF THE AREA.

CONCLUSION: The plant biodiversity, traditional knowledge and cultural practices of the rural people are facing threat due to rapid urbanization and uncontrolled grazing in the study area. Our attempts for this research work will not only provide recognition to this treasure, but also help in the conservation of these medicinal plants for further researchers worldwide. Ethno-botanical studies have a major role to play in modern drug development programs from plant resources. There

is a great role of botanists in the correct identification of the medicinal plants and allowing chemists to isolate and identify active principles and pharmacologists to investigate therapeutic properties. These traditional claims should be scientifically proved by using different analytical tools for production of drugs with least side effects. The present study revealed the information of plants used to cure different disorders. These plants are arranged in alphabetical order, with their family, local name, part/parts used, habit and folk uses.

The present study includes 20 plants belonging to 16 families. The popular use of herbal remedies among the rural people of Himachal Pradesh reflects the restoration of interest in the traditional medicine. The scientific validation of these remedies may help in discovering new drugs from these plant species. The information on therapeutic uses of plants may provide a great potential for discovering new drugs and promoting awareness among the tribal people to use them as remedy in health care system with supreme accuracy and knowledge.

The present observations revealed that the local people of Kullu district of Himachal Pradesh particularly those living in remote and high altitude areas are largely dependent upon the surrounding plant resources to meet their day-to-day requirements. In addition to the above mentioned species, the local people also use many other plants. These plants form an integral form of their lifestyle and hence have always been revered.

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