



Eco-Ethnological and Aromatic Plants of Jahu Valley Region Himachal Pradesh, India

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Abstract- Plants are the basis of life and play a vital role in our livelihood. A present study was carried out in nine villages surrounding the Jahu valley region of Himachal Pradesh to enumerate medicinal plant species used to cure different kinds of ailments. The people of these areas have a great traditional knowledge about the local plants used for the treatment of various diseases. An ethno botanical survey was undertaken in study area to collect information related to medicinal plants for the treatment of various diseases. The information was obtained through questionnaire, face to face interviews of the herbal experts 'Vaidyas' and local inhabitants. The study reveals that many people of this region depend upon the local plants for their primary health care. This study also reveals that several medicinal plants are decline in number due to destruction of their habitats, unscientific collection of plants and poor post harvest methods. Hence, there is a need of conservation of local eco-ethnological plants in order to use the traditional knowledge for future generations.

Keywords- Eco-ethnological, Jahu, Ailments, Traditional, Vaidyas.

1. INTRODUCTION

Himalayas are rich with medicinal flora and ethno-medicinal knowledge. The western Himalayas contain about 50% medicinal plants mentioned in British pharmacopoeia.¹ About 60% of the world population depends upon the traditional medicine for their primary health needs.² Himachal Pradesh is one of the Himalayan states of India, which is rich of ethno-medicinal flora.³ Medicinal and aromatic plants defined as groups of plants that possess some special properties that qualify them as ingredient of drugs and therapeutic agents, and, are used for medicinal purposes. The indigenous knowledge has been evolved from the variety of the ecosystem in different part of the world.⁴ Due to changing perception of the user communities and socio economic transformation all over the world the indigenous knowledge on sustainable use of resources has degrade severally, and needs to be documented before it get lost for the use of future generation.⁵ Traditional herbal medicine used by different communities play an important role in curing different ailments. They are safe, effective and inexpensive. The Jahu valley touches the boundary of district Hamirpur, Bilaspur and Mandi in lower foot hill region of Himalaya. Medicinal plants are collected from the forests, grasslands and agriculture land. Medicinal plants are collected from these different sources are used for curing various ailments. Medicinal plants are the backbone of traditional medicine being used over the world. The knowledge acquired by a few local people, descended

down from generation to generation still forms the traditional practices of herbal cure.⁶ The indigenous people have direct dependence on the ethno botanical plants for their sustainability. The knowledge about ethno botanical plant used as food, vegetables and medicine has been handed from generation to generation. Today the knowledge of ethno botanical plants is vanishing due to changing social values and participation of younger generation in conservation of traditional knowledge. The main goal of this study is to explore the traditional knowledge and to create awareness among younger generations for the use.

2. MATERIAL AND METHODS

Study Area: the extensive survey was conducted in the nine villages of Jahu valley region i.e. Bahanwin, Bhalwani, Samakari villages of Hamirpur district, Pounta, Batail, Mohi villages of Mandi district and Hatwar, Kulwari, Pantehra villages of Bilaspur district respectively. The climate in the study areas can be divided into three distinct season cool and relatively dry winter(November to March), warm and dry summer (April to June), and rainy (July to September). Temperature ranges between 3°C to 43°C. The socio-economics of the Jahu valley region is very diverse. The local people of the study areas have a great knowledge about the traditional uses of the plants in curing various ailments. It offers tremendous scope to study indigenous traditional knowledge.⁷⁻¹³

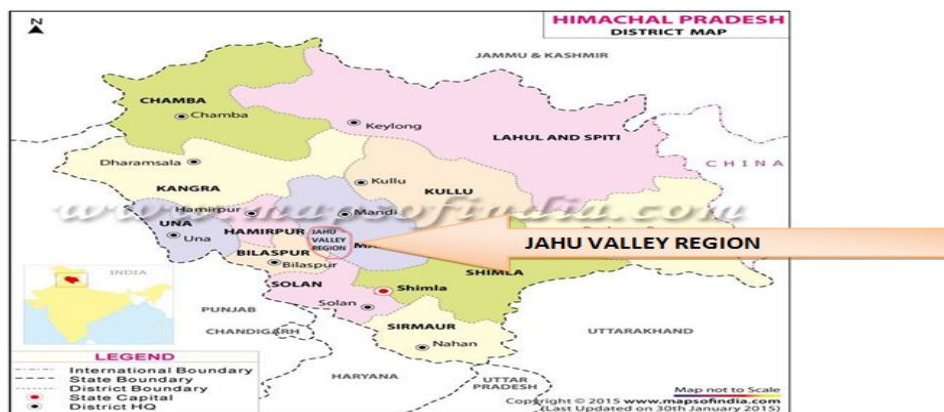


Fig. 1. Map of Himachal Pradesh, India (representing Jahu valley region bordering Hamirpur, Bilaspur and Mandi districts).

An ethno botanical survey was undertaken in study area to collect information related to medicinal plants for the treatment of various diseases. The information was obtained through questionnaire, face to face interviews of the herbal experts '*Vaidyass*' and local inhabitants. The specimen was identifying by using regional flora and monographic works.¹⁴⁻¹⁸

Table 1: Uses of different Ethno-medicinal plant species used for curing various ailments. Abbreviation used in the above table: T-tree, S-shrub, H- herb, C-common, Oc- occasionally, R-rare, &-and.

| S.No. | Botanical Name & Family | Vernacular Name | Life Form | Status | Part used | Ethno-medicinal uses |
|----------------------|------------------------------------|-----------------|-----------|--------|----------------------------------|---|
| Acanthaceae | | | | | | |
| 1. | <i>Justicia adhatoda</i> Linn. | Basuti | S | C | Whole plant | 1. Extract from leaves and roots are useful in treating bronchitis and other lung and bronchiole disorders as well as common cough and colds. 2. A decoction of the leaves has soothing effect on irritation in the throat, and act as expectorant to loosed phlegm in the respiratory passage |
| Amaranthaceae | | | | | | |
| 1. | <i>Achyranthes bidentata</i> Linn. | Puthkanda | S | C | Leaves, seeds, roots | 1. Root juice is used for the tooth ache. 2. The plant is externally used in treatment of leech bite. 3. Stem is used to cure cough and cold. 4. Leaf paste is used to heal bites of poisonous insects & wasp. |
| Anacardiaceae | | | | | | |
| 1. | <i>Mangifera indica</i> Linn. | Aam | T | C | Leaves, bark, fruit, root, seeds | 1. Fruits are eaten as kidney tonic and cure headache. 2. Mango root paste is used to reduce fever by applying paste on palms of hand and soles of feet. 3. seeds of mango taken in the dose of 4 gms with honey /water thrice a day is used for the diarrhea during pregnancy |
| 2. | <i>Pisticia integerrima</i> | Kakarsingi | S | Oc | Gall | 1. The galls of this herb are effective in treatment of diarrhea & dysentery. 2. The galls with Kaiphal are given with |



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| | Linn. | | | | | honey used to cure asthma. 3. The herb is good in treatment of fever. |
| Asparagaceae | | | | | | |
| 1. | Asparagus adscendens Roxb. | Sanspai | S | C | Leaves, fruits, roots | 1. Paste of leaves mixed with raw sugar can cure dysentery. 2. Decoction of leaves powder with one Capsicum powder can relive in dry cough. 3. Dried powder of fruits and roots are used in increasing lactation after child birth. |
| Berberidaceae | | | | | | |
| 1. | Berberis aristata Royle | Kashmalya | S | Oc | Roots, stems, fruits and seeds | 1. Roots and lower stems are cooked in water and then used for curing stomach infection, piles, fever, constipation, ulcer, jaundice & eye related problems. 2. Fruits & seeds are anti cancerous, anti inflammatory, Antioxidant & anti diabetic. |
| Caesalpinaceae | | | | | | |
| 1. | Bauhinia variegata Linn. | Karyala | T | C | Buds, roots | 1. Barks & buds are used foe leprosy, ulcers, and skin diseases. 2. Dried buds are used in case of dysentery, piles, diarrhea & for worms. |
| 2. | Cassia fistula Linn. | Amaltas | T | Oc | Fruit, bark, roots, leaves | 1. Fruit pulp is consumed to cure constipation. 2. 12-14 gms of leaves in mustard oil is roasted & taken twice a day can cure rheumatism 3. Fruit pulp decoction with ghee is used in curing chronic cough. |
| 3. | Bauhinia vahli Wight & Arn. | Torreyia | T | C | Roots, leaves, seeds | 1. Roots are used for treating pulmonary tuberculosis, dysentery, fever. 2. Seeds are used to treat pimple, blisters, indigestion. |
| Cannabaceae | | | | | | |
| 1. | Cannabis sativa Linn. | Bhang | H | C | leaves | 1. Powder of leaves is given in treatment of diarrhea. 2. Mixture of bhang (120gms) and Black piper corns (7 in numbers) is taken twice a day to get relief from cough and cold. 3. The paste of leaves is used on cuts, skin ulcers, & insect bites. 4. The dried leaf powder is applied on wounds for faster healing. |
| Combretaceae | | | | | | |
| 1. | Terminalia bellerica Roxb. | Bhera | T | Oc | Stem, bark, fruits | 1. The fruits are useful in treatment of diarrhea. 2. The fruits are used for the preparation of trifala. 3. Fruits area also used in the treatment of cough, asthma and bronchitis. |



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| | | | | | | 4. Mixture of ground stem bark of <i>Bellericmyrobalan</i> and clove along with honey is taken in diarrhea. |
| 2. | <i>Terminalia chebula</i> Retz. | Harad | T | Oc | Fruits | 1. Fruit powder is given to lick in intermittent fevers. 2. Fruit powder is used to treat diarrhea, dysentery and bronchial asthma. 3. The powder of fruits is mainly used in constipation, cough, stomach & skin bacterial & fungal infections. |
| Caricaceae | | | | | | |
| 1. | <i>Carica papaya</i> Linn. | Papita | T | C | Fruits, leaves | 1. Ripe papaya fruits have digestive, carminative & diuretic activities. 2. The juice of leaves can eradicate ring worms. 3. The seeds are effective in bloody diarrhea & urinary infections. 4. The fruit is useful in diabetes, diarrhea. |
| Cordiaceae | | | | | | |
| 1 | <i>Cordia dichotoma</i> Forst. | Lasura | T | Oc | Fruits, leaves, bark | 1. Filtered juice of ground leaves and black pepper corns are for rabbies. 2. Powdered bark is applied to mouth ulcers. |
| Cuscutaceae | | | | | | |
| 1 | <i>Cuscuta reflexa</i> Roxb. | Amarbel | H | Oc | Whole plant | 1. Prepare paste of cuscuta mixed with sesame oil can cure air fall. 2. Decoction of amarbel is used to cure constipation & flatulence. |
| Euphorbiaceae | | | | | | |
| 1. | <i>Embolia officinalis</i> Gaertn. | Amla | T | C | Fruits, leaves | 1. Dried fruits are useful in diarrhea & dysentery. 2. Fruit powder & black salt with water can cure digestive disorders. 3. Neem leaves & amla fruit powder taken daily for one month in case of leprosy & leucoderma. |
| 2. | <i>Mallotus philippensis</i> Arg. | Kambal | T | C | Bark, leaves, fruits | 1. The powder of hairs present on the surface of fruit is given in single dose for 2 days in case of intestine infected by roundworm, Giardia, Hookworm 2. Decoction of bark is used for the treatment of rheumatism. 3. Oil prepared from the leaves is used in the treatment of cold. |
| 3. | <i>Ricinus communis</i> Linn. | Arand | S | C | Leaves, seeds, roots | 1. Roots are used in treatment of swelling, fever, rheumatism, abdominal diseases. 2. Fresh leaves can be used in treatment of jaundice. 3. Latex with Luke warm desi ghee on joints is useful in rheumatic pains. |
| Lamiaceae | | | | | | |
| 1. | <i>Ocimum sanctum</i> Linn. | Tulsi | H | C | Leaves | 1. The decoction of gloye, tulsi leaves effectively cure fever & strengthens liver. 2. 3 ml of ginger juice with 3 ml of tulsi leaves juice give relief in cold & |



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| | | | | | | cough. 3. Paste of Tulsi leaves effectively cures pimples & acne. |
| 2. | Mentha arvensis Linn. | Pudina | H | C | leaves | |
| Menispermaceae | | | | | | |
| 1. | Tinospora cordifolia Bunge | Galoye | H | C | Stem, roots, leaves | 1. Mixutre of 10 ml of gloye juice with 8-10 drops of Satyanshi oil taken twice a day can cure jaundice. 2. Decoction of stem is taken for chronic rheumatism, fever, malaria, & urinary disorder. |
| Meliaceae | | | | | | |
| 1. | Melia azedarach Linn. | Darek | T | C | Whole plant | 1. Flowers and leaves poultice is used to relieve headache. 2. Seeds are used in rheumatism. 3. Fruits are used in leprosy. |
| Mimosaceae | | | | | | |
| 1. | Acacia catechu Willd | Khair | T | C | Twig, bark , root | 1. Decoction of bark mixed with milk help to cure cough & cold. 2. Catechu powder & dalcini powder taken with honey to cure diarrhea. 3. Paste of fresh root is applied on joints once a day for a week to cure rheumatism. |
| Moraceae | | | | | | |
| 1. | Artocarpus integra Merrill. | Kathal | T | Oc | Bark, seed, fruits | 1. The bark powder is used in chronic diseases. 2. Fruit juice is effective against Jaundice, cutaneous infections and antidote to scorpion poison. |
| 2. | Ficus glomerata Roxb. | Tryambloo | T | C | Fruit, root, bark | 1. The inner side of bark paste is used in pimples, acne & freckles. 2. Roots are useful in diarrhea, diabetes. 3. Powder of fruits with milk taken three times a day can stop blood during vomiting. |
| 3. | Ficus palmate Forrsk. | Khashra | T | Oc | Bark, fruit | 1. The fruits are laxative. 2. The fruits are used to cure jaundice & enlarged spleen. 3. The bark is astringent & diuretic. |
| 4. | Ficus religiosa Linn. | Peepal | T | C | Leaves, fruits, bark | The decoction of bark is useful in variety of diseases such as skin diseases, rheumatism, ulcers & scabies. The dried fruits or figs are given in case of asthma. The oral intake of leaves gives strength to heart and also given to treat feverish conditions & arresting bleeding. |
| Myrtaceae | | | | | | |
| 1. | Syzygium cuminii Linn. | Jamun | T | C | Bark, leaves, fruits | 1. The powder of bark with honey taken twice a day is used for arresting diarrhea. 2. Powder of seeds with sugar taken two to three times a day used for the treatment of dysentery. |



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| | | | | | | <p>3. The juice of leaves mixed with black pepper powder taken twice a day for few weeks used for the kidney stones.</p> <p>4. The paste of leaves is used on cuts & wounds for faster healings.</p> |
| Papilionaceae | | | | | | |
| 1. | Trigonella foenum-graecum Linn. | Methi | H | Oc | Leaves, seeds | <p>1. The paste of leaves is applied on the scalp for promoting hair growth & curing dandruff.</p> <p>2. The intake of seeds reduces the cholesterol.</p> <p>3. Dried fried seed powder with honey used for the treatment of diarrhea, loose motion, dysentery.</p> <p>4. Seed powder taken in dose of 6 grams twice a day with water gives relief in joint pain.</p> |
| Poaceae | | | | | | |
| 1. | Cynodon dactylon Linn. | Doob | H | C | Whole plant | <p>1. For nose bleeding the 4 drops of fresh juice of doob grass are put on the nostrils. 2. For frequent nose bleeding use few drops of juice in nostril regularly to cure nose bleeding permanently.</p> <p>3. Grass juice with honey taken 2-3 times a day for heavy & prolonged menstrual period.</p> <p>4. Juice of grass with alum & gargle used for mouth ulcer.</p> |
| Rosaceae | | | | | | |
| 1. | Pyrus pashia Buch.-Ham. | Kainth | T | C | Fruits, leaves | <p>1. Used to treat mouth and eye infections.</p> <p>2. Fruits & leaves are used in curing sores.</p> |
| Rutaceae | | | | | | |
| 1. | Aegle marmelos Corr. | Bael | T | Oc | Fruit, bark, root | <p>1. Juice of soft bael leaves mixed with black pepper taken every morning & evening for the treatment of jaundice.</p> <p>2. The dried pulp helps to cure diarrhea.</p> <p>3. Fresh bel fruit is used to cure dysentery.</p> <p>4. Powder of dry pulp of fruit add in boiled cow milk taken a twice a day used in treating anemia.</p> <p>5. The grind leaves are boiled in one cup of water till it become thick. This paste with honey taken twice a day for the treatment of typhoid.</p> <p>6. Bael leaves are chewed with empty stomach in the morning for the treatment of diabetes.</p> |
| 2. | Citrus limon Linn. | Nimbu | T | C | Fruits | <p>1. Amla powder in lemon juice is applied on the scalp to remove dandruff & prevent hair fall.</p> |

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| | | | | | | <p>2. 20 ml of onion juice added in lemon juice taken for few days in case of liver enlargement.</p> <p>3. Equal amount of lemon juice with cucumber juice & rose water are applied on the face for 15 minutes are useful in improving complexion, fairness, glowing skin, and in face wrinkles.</p> <p>4. Lemon juice with honey in Luke warm water drinks empty stomach in morning for the obesity.</p> |
| 3. | Citrus medica Linn. | Galgol | T | C | Fruits | <p>1. The fruit juice & water is useful in case of diarrhea & digestive disorders.</p> <p>2. The ripe fruit juice is useful in cholera & conclusive cough.</p> |
| 4. | Murraya koenigii Linn. | Kandhela | S | C | Stem, leaves | <p>1. Powder of leaves consumed 3-4 gms daily in the morning help to reduce blood sugar level.</p> <p>2. The decoction of leaves is used in curing stomach pain.</p> <p>3. Coconut oil (100ml) with curry leaves & neem leaves useful in treating baldness, premature hair fall & helpful in growth & strength of hairs.</p> |
| 5. | Zanthoxylum armatum DC | Tirmira | T | OC | Whole plant | <p>1. Fruits, branches and thorns are used as remedy for toothache as stomachic, carminative, antihelminthes.</p> <p>2. Seeds are used to treat indigestion and digestive disorders.</p> |
| Solanaceae | | | | | | |
| 1. | Datura stramonium Linn. | Datura | S | Oc | Whole plant | <p>1. The seeds are used in the treatment of leprosy.</p> <p>2. The leaves are used as poultice for inflammation & boils & to get relief from headache.</p> <p>3. Fruit juice is used for earache.</p> <p>4. The leaf smeared with oi; is used for rheumatic swelling of joints & neuralgia.</p> |
| 2. | Withania somnifera Linn. | Ashwagandha | S | Oc | Roots, leaves | <p>1. 3 gms of Ashwagandha with 3gms ghee & 1 gms misri taken twice a day for the rheumatism.</p> <p>2. Powder of ashwagandha mix in glass of milk and drink used for the joint pains.</p> <p>3. 200-1200 mg of ashwagandha powder with tea is useful in thyroid.</p> |
| Verbenaceae | | | | | | |
| 1. | Vitex negundo Linn. | Banna | S | C | Leaves | <p>1. Leaf powder is taken in dose of one table spoon; twice a day is useful in arthritis.</p> <p>2. Decoction of leaf is used in abdominal gas & pain.</p> <p>3. Root decoction is used in chronic fever, intestinal parasites.</p> |

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| | | | | | | 4. Leaves are boiled in water & the vapour is inhaled twice a day is used for cough, cold, headache, fever. 5. A dried fruit powder is orally taken with honey in a dose of 5-10 gms is useful in diarrhea. 6. Leaf powder is taken in dose of half teaspoon twice a day is help in strengthening hair, reduce swelling, curing swollen joints & its pain. 7. Heated leaf is pressed & tied for rheumatoid arthritis pain. 8. Dried fruits powder is taken in a dose of 5-10 gms with roasted common salt & warmed water useful in menstrual disorders, urinary disorders and indigestion. |
| Violaceae | | | | | | |
| 1. | Viola serpens Smith. | Banaksha | T | C | Whole plant | 1. Decoction of flower with mulathi (<i>Glycyrrhiza glabra</i> roots and mint leaves are taken orally for fever. 2. The herb is a laxative, antipyretic, and diuretic. |

3. RESULT AND DISCUSSION

A total of 40 species of ethno-medicinal plants belonging to 25 families has been identified (Table 1). Among the families, maximum species were represented by Rutaceae (5 spp.) followed by Moraceae (4 spp.) followed by Euphorbiaceae (3 spp.) (figure1). Whereas, Anacardiaceae, Cesalpiniaceae, Combretaceae, Lamiaceae, Solanaceae families contribute two plant species each followed by Acanthaceae, Asparagaceae, Amaranthaceae, Berberidaceae, Cannabaceae, Caricaceae, Cordiaceae, Cuscutaceae, Menispermaceae, Meliaceae, Mimosaceae, Myrtaceae, Papilionaceae, Poaceae, Rosaceae, Verbenaceae, Violaceae families contribute 1 plant species.

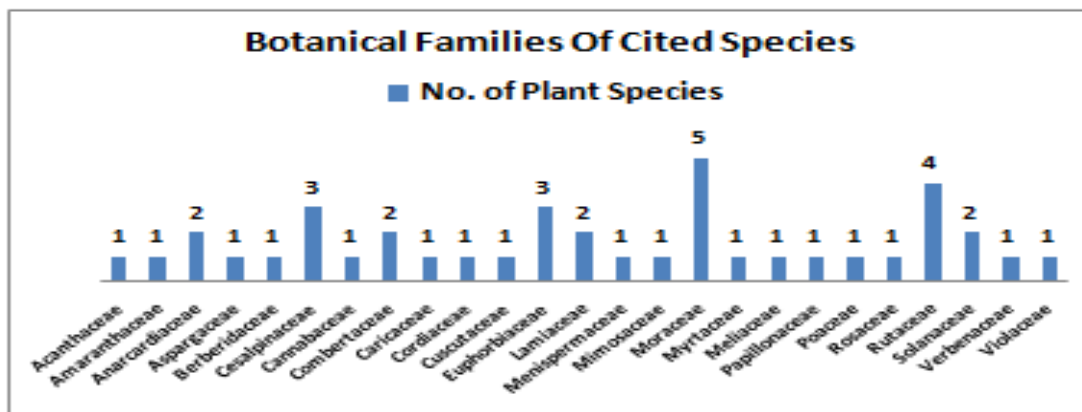


Fig 2: Number of Plant species Present in the Different Families

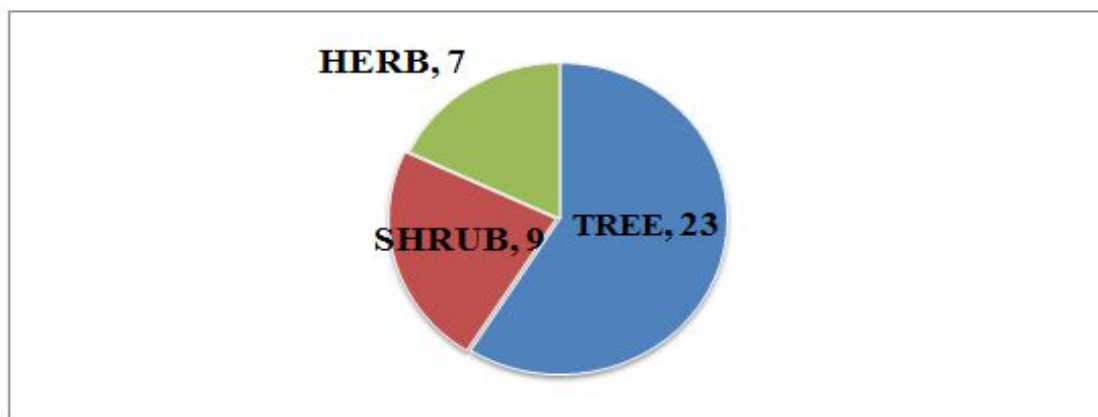


Fig 3: Different life form of Plant species used for medicinal treatment

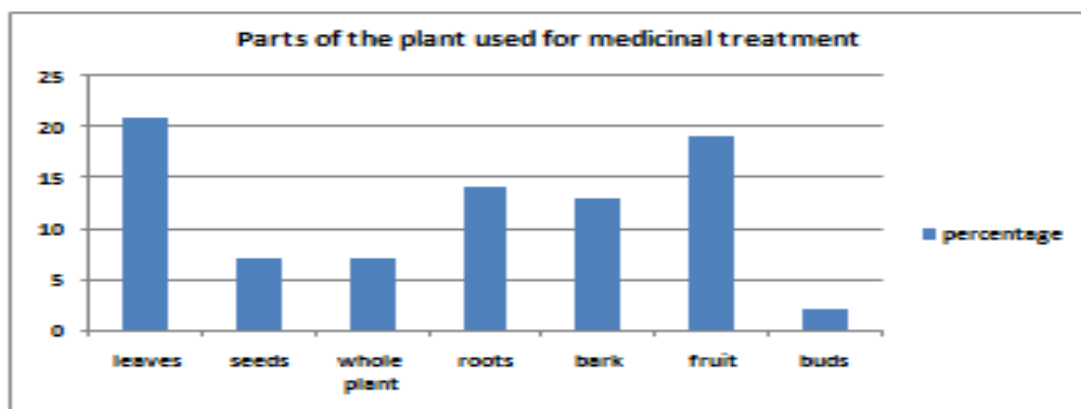


Fig 4: parts of the plant used for the medicinal treatment

4. CONCLUSION

The study has shown that Jahu valley region is a rich medicinal flora. The local people of the study area have a great indigenous knowledge on medicinal plants. Most of the herbal medicines are used in the form of powder, paste, decoction and extract. Some herbal plants are used for the treatment of more than one disease. This study also decline that some traditional plants like *Terminalia bellerica*, *Terminalia chebula*, *Pisticia integerrima* and *Cascuta reflexa* get reduce in number due to destruction of habitats, unscientific collections and lack of knowledge. Documentation, preservation and recording of medicinally important plant species and traditional knowledge associated with use of local plant species should be the necessary step for the conservation of plant species and traditional knowledge associated with them for future generation.

5. RECOMMENDATIONS

The survey conducted in Jahu valley region of Himachal Pradesh India demonstrated the need for documenting the traditional knowledge of local herbal experts which will otherwise dilute or even erase with the passage of time. Eco-Ethnomedicinal and Aromatic plants of the area, *Cassia fistula* Linn., *Terminalia bellirica* Roxb., *Terminalia chebula* Retz., *Cordia dichotoma* Forst., *Embllica officinalis* Gaertn., *Mallotus philippinensis* Muell. Arg., *Melia azedarch* Linn., *Tinospora cordifolia* Bunge, *Aegle marmelos* Corr., *Vitex nigundo* Linn. and *Viola serpens* Smith. are recommended for further ethno-pharmacological studies.

6. ACKNOWLEDGEMENTS

The authors appreciated the collaboration of the key informants (*Vaidya*) and village elders who spread their time and provided this valuable knowledge on Eco-ethnomedicinal and aromatic plants.



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