



Indigenous Ethno-Medicinal and Ethno-Veterinary Practices in Shivalik Hills Zone of Himachal Pradesh, India

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(Received 17 June, 2017; Accepted 22 Aug, 2018; Published 26 Aug, 2018)

ABSTRACT: Shivalik hills are the rich repository of diverse aromatic and medicinal plants. The present study focused on the analysis, documentation and interpretation of indigenous ethno-medicinal and ethno-veterinary practices in Shivalik hills zone of Himachal Pradesh, North-West Himalaya. During the study, a total of two hundred species of plants have been identified and enumerated. The highest number of species belongs to the families Brassicaceae, Cucurbitaceae, Leguminosae, Asteraceae, Euphorbiaceae, Solanaceae, Ranunculaceae and Sapindaceae. A wide range of diseases of human ranging from cough and cold to asthma and bronchitis, cuts and wounds to snake-bites, and are treated by the traditional healers of study area with the help of these local plant remedies. Some of these plants are also used for ethno-veterinarian practices by livestock owners to diagnose animal diseases like foot and mouth disease, constipation, dysentery and de-worming etc. It was observed that unsustainable collection methods, poor post-harvest methods, soil erosion, intense deforestation and grazing animals are causing serious threat to these plants.

Keywords: Ailments; Ethno-veterinary practices; Medicinal plants; Shivalik hills and Traditional usage.

INTRODUCTION: Indian Himalayan region (IHR) is one amongst the thirty-eight biodiversity hotspots of World.^{1 & 2} The floral wealth of IHR accounts for more than 9000 plant species including 33% species as endemics.³ A large number of studies on medicinal and aromatic plants have been carried out in this region.^{4, 5 & 6} However, in Himachal Pradesh, such studies are incomplete and mainly focused on inventory.^{7, 8, 9, 10, 11, 12, 13 & 14} Some workers have mentioned medicinal uses of plants in ethnobotanical notes, floristic and biodiversity studies.^{16, 17, 18, 19, 20, 21, 22 & 23} The natural stock of medicinal plants of Himachal Pradesh is enriched by diverse plant species, which includes around 3,400 species of flowering plants distributed from tropical to alpine zone.²⁴

The Shivalik zone is spread over districts Hamirpur, Bilaspur, Una, Mandi, Sirmour and Solan of Himachal Pradesh. Ecologically, entire Shivalik belt is considered as highly sensitive zone. This region suffers heavy fragmentation and degradation of habitat due to human encroachment and proliferation of exotic weeds such as *Lantana camara*, *Parthenium hysterophorus*, *Cassia tora* and *Sida* spp.²⁵ This part of IHR is an extensive abode of the tribal communities such as Kohlies and Gujjars. Their main profession is semi-nomadic, semi-pastoral and semi-agricultural type. In ancient times, it had been the abode of Rishies and Munies (prophet, sages or saints), who pursued their meditational and scholarly

endeavors here. The research and practices of Rishies and Munies on herbs proved a panacea for the people of the region. The knowledge acquired by a few local inhabitants, descended down from generation to generation still forms the traditional practices of herbal cure. Despite a rich heritage and enormous herbal wealth existing in the state, it is disheartening to point out that the knowledge acquired and disseminated by the great saints and scholars, is on the verge of extinction on the very land of its origin. Owing to lack of awareness and proper written records, the traditional practice of herbal-cure had to suffer a lot during the course of time. Therefore, an attempt has been made to provide comprehensive information on traditional use of plants in regions of Shivalik zone of North-Western Himalaya.

MATERIALS AND METHODS: Extensive field survey were conducted in various locations of Shivalik hill of district Hamirpur, Una, Bilaspur, Mandi, Kangra, Sirmour and Solan of Himachal Pradesh during the study period (2016-17). Prior to the visit to research sites, a questionnaire was designed and pre-tested to find out if it actually worked. Revisions needed as a result of this pre-test were noted and undertaken in the following day of the visit. The traditional usage of plant resources were learned with both the questionnaire and through participatory techniques. The ethno-medicinal importance of the collected plants

containing the information about the vernacular name of the plants, part used and medicinal and vegetarian practices were recorded through detailed discussion with local people and traditional healers.

RESULTS AND DISCUSSION: A total of 200 plant species in 72 families were documented for the treatment of various chronic ailments in the studied area (Table 1). Among the families, maximum species were represented from Leguminosae (14 spp.) followed by Brassicaceae (12 spp.), Asteraceae (9 spp.), Cucurbitaceae (9 spp.), Rutaceae (9 spp.), Solanaceae (9 spp.), Moraceae (8 spp.), Rutaceae (8 spp.) and Euphorbiaceae (7 spp. each), Rosaceae (7 spp.), Poaceae (6 spp.), Alliaceae (4 spp.), Apiaceae (4 spp.), Lamiaceae (4 spp.), Ranunculaceae (4 spp.), Rubiaceae (4 spp.), Amaranthaceae (3 spp.), Anacardiaceae (3 spp.), Asperagaceae (3 spp.), Chenopodiaceae (3 spp.), Combretaceae (3 spp.),

Lythraceae (3 spp.), Malvaceae (3 spp.), Menispermaceae (3 spp.), Oleaceae (3 spp.), Sapindaceae (3 spp.), Urticaceae (3 spp.), Zingiberaceae (3 spp.), Apocyanaceae (2 spp.), Berberidaceae (2 spp.), Bignoniaceae (2 spp.), Crassulaceae (2 spp.), Fabaceae (2 spp.), Lauraceae (2 spp.), Myrtaceae (2 spp.), Pedaliaceae (2 spp.) and Sterculiaceae (2 spp.). The local people and traditional healers were using these plants to treat various diseases of human as well as animals like Astringent, Anthelminite, Diuretic, Expectorant, Urinary problems, Skin problems, asthma, body pain, bone fracture, cholera, cold, conception, constipation, cough, diabetes, diarrhea, fever, healing wounds, high blood pressure, improving appetite, indigestion, influenza, joint pain, kidney stones, leucorrhoea, malaria, measles, mouth ulcers, piles, pneumonia, purify blood, respiratory disorders, rheumatic pain, skin and eye infections, stomach worms, toothache and whooping cough.

Table 1: Ethno-medicinal and ethno-veterinary plants of Shivalik hills.

Sr No.	BOTANICAL NAME	FAMILY	H/S/T	MEDICINAL PROPERTIES	E/F/R/M /V	LOCAL NAME	PARTS USED
1.	<i>Justicia adhatoda</i> Mart. Ex Nees	Acanthaceae	S	Leucorrhoea, Cough, Tuberculosis, Jaundice, Vomiting, Diuretic, Stomachs disorders, Wormicides	M, V	Basuti	Leaves
2.	<i>Acorus calamus</i> L.	Acoraceae	T	Expel out the worms, Hydrocele, Urinary problems, epilepsy	M	Barya	Rhizome, Fruits
3.	<i>Agave cantala</i> (L.) Schult.	Agavaceae	S	Scurvy, Syphilis, Goiter, Ulcer, Eczema	M	Jarri	Leave, roots
4.	<i>Alium cepa</i> Radic	Alliaceae	H	Ear & Eye Drops, Cholera	E, M	Piaz / Gathhu	Bulbs
5.	<i>Alium sativum</i> L.	Alliaceae	H	Cough, Whooping cough, Skin troubles, Hemicranias, Asthma	E, M	Lahassan	Bulbs
6.	<i>Zeyphyranthes candida</i> Lindl.	Alliaceae	H	Earache, Eye drops, Cholera	E, M		leaves
7.	<i>Crinum defixum</i> Ker-Gawl.	Alliaceae	H	Cough, Skin trouble, Hemicranias, Rheumatism	E, M	Sukhrashan	Leaves
8.	<i>Aloe barbadensis</i> Mill.	Aloaceae	H	Whooping cough, Skin troubles, Hemicranias	M	Dharitkumari	Leave, roots
9.	<i>Achranthes aspera</i> Wall.	Amaranthaceae	H	Stone kidney, Piles, Night blindness, Cough	R, M	Puthhkanda	Roots, leaves, seeds, Bark
10.	<i>Aerva lanta</i> (L.) Schult.	Amaranthaceae	S	Diuretic, Cough, sore-throat, Diabetes, Headache	M	Dhardu	Leave, Fruits
11.	<i>Amaranthus spinosus</i> L.	Amaranthaceae	H	Leprosy, Cutaneous trouble	F, M, V	Chulai	Leaves
12.	<i>Cirrus defixum</i> Ker Gawl.	Amaryllidiaceae	H	Diaphoretic, emollient, Earache	M	SuKh darshan	Leave, Bulbs
13.	<i>Cotinus coggygria</i> Scop.	Anacardiaceae	H	Headache, Inflammations, Dyspepsia	M	Tahirra	Leave, Roots

14.	<i>Mangifera indica</i> Thwaites	Anacardiaceae	T	Gonorrhea, Throat troubles, diarrhea, Piles, sun-strokes, Scurvy	E, R, M	Aam	Fruits, Pulp, Stone
15.	<i>Spondias pinnata</i> (L.f.) kurz	Anacardiaceae	T	Antiscorbutic, Dyspepsia, Diarrhoea, Dysentery, Rheumatism	E, M	Bwara	Fruits, Bark, roots
16.	<i>Centella asiatica</i> Urb.	Apiaceae	H	Improving memory, madness, hysteria, syphilitic skin diseases, Jaundice	M	Brahmi	Herb, Leaves
17.	<i>Coriandrum sativum</i> L.	Apiaceae	H	Carminative, Diuretic, Stimulant, Piles, Cough, Impotent	E, M	Dhania	Fruits, Seeds
18.	<i>Daucus carota</i> L.	Apiaceae	H	Carminative, Tonic	E, M	Gajar	Roots, Seeds, Leaves
19.	<i>Foeniculum vulgare</i> Mill.	Apiaceae	H	Aromatic, Stimulant, Carminative, Purgative, dysentery, Dyspepsia, Urinary troubles	E, M	Saunf	Leave, seeds, Fruits
20.	<i>Carissa opaca</i> Stapf ex Haines	Apocyanaceae	S	Gum problems, Wormicides, Snake-biting	E, F, R, M	Garna	Roots, Fruits
21.	<i>Nerium odorum</i> Aiton	Apocyanaceae	T	Diaphoretic, Diuretic, Fever, Respiratory troubles	F, M	Kaner	Leaves
22.	<i>Colocasia esculenta</i> (L.)	Araceae	H	Astringent, Swelling pain	E, M	Kachyalu	Tuber, Petioles
23.	<i>Calotropis procera</i> W. T. Aiton	Asclepiadaceae	H	Respiratory troubles, Abdominal swelling, Hemicranias delirium, Rheumatism, Eye sight	R, M	Ak	Leave, Stem
24.	<i>Asparagus adscendens</i> Roxb.	Asperagaceae	H	Aphrodisiac, Exhilarant, Demulcent, Diabetes, gonorrhea, Diarrhoea	R, M, V	Sanspai	Roots
25.	<i>Asparagus racemosus</i> willd.	Asperagaceae	H	Laxative, Asthma, Dyspepsia	R, M, V	Sattavar	Leave, Seeds
26.	<i>Bacopa monnieri</i> (L.) Pennell	Asperagaceae		Digestive secretion, Memory loss, Agony, Reddishness, Cough, Catarrh, Urino-genital disorders	R, E, M, V	Badi-Bharmi	Whole plant
27.	<i>Ageratum conyzoids</i> L.	Asteraceae	H	Diarrhoea, Dysentery, Gastro-intestinal ailments, Antilithic	M	Neela Phulnnu	Plant, Leaves
28.	<i>Anthemis cotula</i> L.	Asteraceae	H	Carminative, Stimulant	F, M	Butikah	Flowers
29.	<i>Bidens biternata</i> (Lour.) Merr. & Sherff	Asteraceae	H	Sore, welks	F, M	Lamb	Leaves
30.	<i>Blumea lacera</i> (Burm. F.) DC.	Asteraceae	H	Wormicides, Piles, Head-ache	F, M	Makora gha	Leaves
31.	<i>Centipeda minima</i> (L.) A. Braun & Asch.	Asteraceae	H	Catarrh, vermifuge, Ophthalmia	M	Nak chhikni	Herb, Seeds
32.	<i>Spilanthes calva</i> DC.	Asteraceae	H	Salivation in a dry mouth, Throat infection, Paralysis of tongue, Epilepsy, Sneezes, Scabies	M	Karkara	Flower, Herb's decoction
33.	<i>Tagetes erecta</i> L.	Asteraceae	H	Diuretic, Fever, Cathartic, Respiratory trouble	M	Gatakaddi	Leaves

34.	<i>Tagetes minuta</i> L.	Asteraceae	H	Diuretic, Fever, Cathartic, Expectorant,	M		Leaves
35.	<i>Taraxacum officinale</i> F. H. Wigg. var. <i>palustre</i> Blytt	Asteraceae	H	Laxative, Cathartic, Expectorant, Tonic, Malarial fever,	M, V	Dudhali	Leaves, Stem
36.	<i>Begonia picta</i> Hort. Henders. Ex A. DC.	Begoniaceae	H	Wormicides, Diabetes, Respiratory troubles	E, M	Pethu	Pulp, Seed, Fruits
37.	<i>Berberies lyceum</i> Hort.ex K. Koch	Berberidaceae	H	Eye disorder	E, M	Rasaunt	Roots, Stem
38.	<i>Berberis lycium</i> hort. Ex k. Koch	Berberidaceae	T	Laxative, Asthma, Dyspepsia	F,M	Daruharidra / Kashmal	Leaves, Bark
39.	<i>Jacarnda mimosifolia</i> D. Don	Bignoniaceae	T	Syphilis, Blennorrhagia, Vulnerary, Chest problems	M	Nili-Gulmohar	Bark, Leaves
40.	<i>Oroxylum indicum</i> (L.) Benth. Ex Kurz	Bignoniaceae	H	Diarrhea, Dysentery, respiratory diseases, Stomachic, Rheumatism, Piles	E, M	Sona-pathha / Tat-palanga/ Arlu	Roots, Bark, Leaves
41.	<i>Bombax ceiba</i> L.	Bombacaceae	T	Hysteria, syphilitic skin diseases	F, M	Simbal	Bark, Leaves
42.	<i>Cordia dichotoma</i> G. Forst.	Boraginaceae	T	Astringent, Anthelminite, Diuretic, Expectorant, Urinary problems, Skin problems	E, F, M	Lasura	Leaves, Fruits, Bark
43.	<i>Brassica napus</i> L.	Brassicaceae	H	Chronic cough, Bronchial catarrh	E, F, M	Toria	Fruits
44.	<i>Brassica nigra</i> (L.) Andrz.	Brassicaceae	H	Wormicides, Digestive secretion	E, M, V	Banarsi rai	Leave, Seeds
45.	<i>Brassica oleracea</i> L. var. <i>botrytis</i> L.	Brassicaceae	H	Fever, Intoxication	E, F, M	Phul Gobhi	Root-powder
46.	<i>Eruca vesicarica</i> L.	Brassicaceae	H	Liver troubles, Strangury, Hydrophobia	E, M	Taramira	Stem, roots
47.	<i>Brassica rapa</i> L.	Brassicaceae	H	Stomachic, Diuretic, Aperients, Hemorrhages, Parturition	E, M	Shalgum	Leaves
48.	<i>Raphanus sativus</i> L.	Brassicaceae	H	Stomachic, diuretic, Aperients, Hemorrhages	E, M	Moli	Leaves
49.	<i>Brassica Compestries</i> L.	Brassicaceae	H	Muscular rheumatism	E, F, R, M, V	Saronh	Seeds
50.	<i>Capsella bursa pastoris</i> (L.) Medik.	Brassicaceae	H	Hemorrhage, Stimulant	M	Toriya	Plants, Seeds
51.	<i>Lepidium sativum</i> L.	Brassicaceae	H	Liver diseases, Asthma, Cough, Bronchitis	F, M, V	Halon	Seeds, Roots, Leaves
52.	<i>Raphanus sativus</i> L.	Brassicaceae	H	Piles, Diuretic, Carminative, Bronchitis, Stone in kidney, Goiter	E, M	Muli	Roots, Seeds
53.	<i>Rorippa nasturtium-aquaticum</i> (L.) Schinz & Thell.	Brassicaceae	H	Appetizing, Antiscorbutic, Stimulant, Goiter, diuretic, Vermifuge, asthma, Tuberculosis	E, M, V	Chhuchh	Leaves
54.	<i>Sisymbrium irio</i> K. Koch	Brassicaceae	H	Laxative, Antipyretic, Diuretic, Fever	F, M	Khoobkalan	Leaves
55.	<i>Cassia occidentals</i> L.	Caesapliniaceae	T	Night blindness, epilepsy	E, M	Ailon	Leave, Pods

56.	<i>Cannabis sativa</i> L.	Cannabaceae	S	Agony, Reddishness, Cough, Catarrach, Urinogenital disorders	R, M, V	Bhang	Leave, Seeds
57.	<i>Carica papaya</i> L.	Caricaceae	T	Carminative, Diuretic, Eczema, Skin troubles, Diphtheria, Digestion	E, M	Kharbuja	Fruits, Latex
58.	<i>Chenopodium album</i> L.	Chenopodiaceae	H	Laxative, Anthelminites	E, M, V	Ghanaun	Whole plant
59.	<i>Chenopodium ambrosioides</i> Hance	Chenopodiaceae	H	Anthelminites, digestive disorder in cattle	F, M	Kah jawyan	Seeds, Leaves
60.	<i>Chenopodium botryois</i> Moq.	Chenopodiaceae	H	Hysteria, syphilitic skin diseases	E, M, V	Bathu	Leaves
61.	<i>Gloriosa superba</i> L.	Cochicaceae	S	Gonorrhea, Wormicides, Aphrodisiac, Jaundice, Earache, Scorpion ache	M	Kalihari / tarangri	Rhizomes
62.	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Combretaceae	T	Expectorant, Diaphoretic, Antipyretic, Cathartic, Tonic, Respiratory trouble	M	Arjun	Bark
63.	<i>Terminalia bellirica</i> Wall.	Combretaceae	T	Diarrhoea, rheumatic swellings, Purgative	E, M, V	Bhera	Fruits, Kernels
64.	<i>Terminalia chebula</i> Willd. Ex Flem.	Combretaceae	T	Laxative, digestants, stomachic, Attenuating, Aphrodisiacs, Diarrhoea, Hemicranias, Apoplexy, Constipation	E, R, M, V	Harar	Fruits, Bark, Leaves
65.	<i>Ipomoea batatas</i> (L.) Poir.	Convolvulaceae	H	Purgative, Astringent, tonic, Diarrhea	E, M	Sakarkand	Roots
66.	<i>Costus speciosus</i> (J. Koenig) Sm.	Costaceae	S	Sores, pimples, Throat pains, Cough	M, V	Kau	Seeds, Leaves
67.	<i>Kalanchoe pinnata</i> (Lam.) Pers.	Crassulaceae	S	Diarrhea, Piles, Nose bleeding	E, M	Lakandru	Leaf
68.	<i>Sedum ewarsii</i> L.	Crassulaceae	S	Diarrhoea, Piles, Nose bleeding	M		Leaves
69.	<i>Citrullus colocynthis</i> (L.) Schrad.	Cucurbitaceae	S	Mastitis, Dog biting, Xanthopsy	M, V	Farfanu	Roots, Fruits
70.	<i>Cucurbita maxima</i> wall.	Cucurbitaceae	S	Taeniocides, tonic, Diuretic, Inflammation	E, M	Kaddu	Seeds
71.	<i>Cucumis sativus</i> L.	Cucurbitaceae	S	Diuretic, Tonic, refrigerant, stone, Nephritis	E, R, M	Kakri	Seeds, Roots
72.	<i>Lagenaria siceraria</i> Standl.	Cucurbitaceae	S	Strangury, Xanthopsy, Dropsy, Anthelmintic	E, M	Lauki	Fruits, Leaf, Seeds
73.	<i>Luffa acutangula</i> (L.) Roxb.	Cucurbitaceae	S	Conjunctives, Urenia, Amenorrhoea, Purgative, Ematic	E, M	Kangher	Leave, Seeds
74.	<i>Luffa aegyptiaca</i> Mill.	Cucurbitaceae	S	Carminative, Diuretic, Cathartic	E, M	Ghangeri	Fruits, Leaf, seeds
75.	<i>Momordica charantia</i> L.	Cucurbitaceae	S	Measles, Eczema, Vermifuge, Astringent, Snake biting, Hemorrhoids	E, M	Karela	Fruits, leaves
76.	<i>Berberis chitria</i> D. Don	Cucurbitaceae	S	Fever, Jaundice, Skin trouble	E, M	Kashmalu	Root, Bark
77.	<i>Cucumais melo</i> L.	Cucurbitaceae	S	Laxative, Astringent, Demulcent, Refrigerant, Urinary troubles	E, M	Phot	Fruits, Seeds, kernels

78.	<i>Cuscuta reflexa</i> Decne.	Cuscutaceae	H	Stomach, Blood-purifier, Skin troubles, Liver complaints	M	Amberbel	Seeds, Decoction
79.	<i>Dioscorea bulbifera</i> Russ. Ex Wall.	Discoreaceae	S	Ulcers, Dysentery, Piles, Diarrhea	E, F, M	Ratalu	Fruits, Tubers
80.	<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	T	Diarrhea, Eye troubles, Urinary troubles	E, F, R, M	Ambala	Fruits
81.	<i>Euphorbia helioscopia</i> L.	Euphorbiaceae	H	Cholera, Rheumatics	M, V	Baddi Dudhhali	Leave, Roots, Latex
82.	<i>Euphorbia royleana</i> Boiss.	Euphorbiaceae	S	Cathartic, Anthelminite	R, M	Chhuin	Latex
83.	<i>Jatropha curcas</i> Wall.	Euphorbiaceae	S	Paralysis, Dropsy, sciatica, skin trouble, Rheumatism, eczema, ring worms	M	Jablothha	Seeds, leaves
84.	<i>Mallotus philippinenses</i> Pax & K. Hoffm	Euphorbiaceae	T	Anthelmintic, Baldness, Cutaneous, Trouble, Pains in Ribs	F, R, M, V	Kaamal / Kangu –radal	Fruits
85.	<i>Phyllanthus urinaria</i> Wall.	Euphorbiaceae	H	Laxative, Expectorant, Diaphoretic, Antipyretic, Respiratory trouble	M	Bhoomi ambala	Fruits
86.	<i>Ricinus communis</i> L.	Euphorbiaceae	T	Laxative, Expectorant, Diaphoretic, Antipyretic, Diuretic	M	Erand	Roots, Fruits
87.	<i>Abrus precatorius</i> L.	Fabaceae	H	Diuretic, Tonic, Ematic, Cough, Cold, Paralysis, Leprosy	M	Ratti / Ratkan / Kalankani-buti	Roots, Flowers, Seeds
88.	<i>Trigonella foenum-graecum</i> L.	Fabaceae	H	Intestinal inflammation, Small pox, Dysentery, Ulcers	E, F, M, V	Mirthya	Seeds
89.	<i>Flacourtia indica</i> (Burm.f.) Merr.	Flacourtiaceae	T	Digestive, Appetizer, Jaundice, Diuretic	E, F, R, M	Kangu	Fruits, Bark, Seeds
90.	<i>Curculigo orchoides</i> Gaertn.	Hypoxidaceae	H	Anthelminite, Sores, pimples, Throat pains, Cough	M	Kali musali	Leave, Stem, Roots
91.	<i>Juglans regia</i> L. Var. <i>intermedia</i> (Jacques)	Juglandaceae	T	Astringent, Anthelminite	E, M	Khor	Leaves
92.	<i>Ajuga bracteosa</i> Benth.	Lamiaceae	H	Astringent, Diuretic, Malaria, Gout, Rheumatism, Fever	M	Nilkanthi, Khurbanti	Whole plant
93.	<i>Mentha piperita</i> L.	Lamiaceae	H	Bronchitis, Stimulant, Stomachic, Carminative	E, M	Pudina	Leaves
94.	<i>Ocimum basilicum</i> L.	Lamiaceae	H	Gonorrhoea, Diarrhea, dysentery, Carminatives, Toothache, Piles	E, M, V	Bhabri	Seeds, Fruits
95.	<i>Ocimum sanctum</i> L.	Lamiaceae	H	Throat disorder, Stomachic, Expectorant, Malaria, Urino-genital problems	R, M	Tulsi	Leave, Seeds
96.	<i>Cinnamomum camphora</i> (L.) T. Nees & C. H. Eberm.	Lauraceae	S	Anthelminite, Diuretic, Expectorant, Urinary problems	R, M	Karpor	Leave, Bark
97.	<i>Cinnamomum tamala</i> (Buch.-Ham.) T. Nees & C. H. Eberm.	Lauraceae	S	Diuretic, Expectorant, Urinary problems	M		Leaves

98.	<i>Butea monosperma</i> Kuntze	Leguminosae	T	Hysteria, syphilitic skin diseases	F, M	Plass	Leave, Bark
99.	<i>Albizia chinensis</i> Merr.	Leguminosae	T	Wounds, Itching, Skin problems	F, M	Chiuli / Oi	Bark
100.	<i>Bauhinia variegata</i> L.	Leguminosae	T	Diarrhea, Dysentery, Piles, Prolepses, Corpulence, Toothache	E, F, M	Karyala / Kachnar	Flowerbuds, Bark
101.	<i>Cajanus cajan</i> (L.) Huth	Leguminosae	S	Apoplexy, Hemicranias	E, F, M	Arhar	Leave, Seeds
102.	<i>Cassia fistula</i> Herbb. Ex Oliv.	Leguminosae	S	Sores, Blisters, Eradication of ring worms, Diuretic, Purgative	F, M	Alih / Karangal	Leave, flowers, Pulp
103.	<i>Crotalaria spectabilis</i> L.	Leguminosae	H	Sores, pimples, Throat pains, Cough, Scabies	M	Jhunjhunia	Leaves
104.	<i>Derris indica</i> (Lam.) Bennet	Leguminosae	H	Vomiting, Leprosy, Hydrocele	M	Karanj / Sukhchain	Leaves
105.	<i>Desmodium gangeticum</i> Blanco	Leguminosae	H	Cathartic, Anthelminite	M	Shalparnni	Leaves
106.	<i>Dolichos biflorus</i> L.	Leguminosae	H	Cutaneous troubles, Stomachic,	E, M	Kulth	Seeds
107.	<i>Erythrina suberosa</i> Roxb.	Leguminosae	T	Fever, Jaundice, Wormicides	M	Bel	Leaves, Bark
108.	<i>Macrotyloma uniflorum</i> (Lam.) Verdc.	Leguminosae	S	Diuretic, Urinary problems, Diarrhea	E, M	Kolth	Seeds, Herbs
109.	<i>Mucuna pruriens</i> (L.) DC.	Leguminosae	H	Tonic, Wormicides, Diuretic, Purgative, stimulant, Dropsy, Renal troubles, Aphrodisiac	M	Daryogal	Leaves, Roots, Seeds
110.	<i>Phanera vahali</i> (Wight & Arn.) Benth.	Leguminosae	T	Fever, Bronchitis, Jaundice, Epilepsy, headache, Eye troubles	R, M	Tour	Bark
111.	<i>Pisum sativum</i> L.	Leguminosae	S	Blood purifier, Laxative, Antipyretics	E, F, M	Mattar	Seeds
112.	<i>Linum usitatissimum</i> Griseb.	Linaceae	H	Gonorrhoea, Backache, Laxative in cattle	E, F, R, M, V	Alsi	Seeds
113.	<i>Lawsonia inermis</i> L. ver. <i>Spinosa</i> (L.) Pers.	Lythraceae	S	Leucoderma, Hemicranias, Leprosy, Skin troubles, Diarrhoea	M	Mehndi	Leaves
114.	<i>Punica granatum</i> L.	Lythraceae	S	Diarrhoea, piles	E, M	Nar	Roots, bark, rind
115.	<i>Woodfordia fruticosa</i> Kurz	Lythraceae	H	Astringent, Diuretic, Antisyphilitic, Serofula	M	Jhinjri	Roots, Flowers, Seeds
116.	<i>Abelmoschus esculentus</i> Moench	Malvaceae	S	Copulation power, Diuretic	E, M	Tori / Bhindi	Roots, Seeds
117.	<i>Gossypium arboreum</i> Vell.	Malvaceae	H	Diuretic, Digestive	F, M	Kapah	Seeds, Fruits
118.	<i>Urena lobata</i> L.	Malvaceae	H	Diuretic, Rheumatism, Expectorant, Whooping cough, Sore throat	M	Banbhinda	Roots, Flowers, Stem
119.	<i>Melia azedarach</i> L.	Meliaceae	T	Wormicide, Menstrual disorders, Stomachic, Goiter, Leprosy, Skin trouble, Piles, Rheumatism	M	Drek	Leave, Flowers, Seeds
120.	<i>Cissamplos pareira</i> L.	Menispermaceae	S	Dyspepsia	E, M	Patindoo	Roots, Leaves

121.	<i>Cocculus hirsutus</i> (L.) Diels	Menispermaceae	S	Stomachache, Eczema	E, M	Tardya/Jal-Jamni	Leave, Roots
122.	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook. F. & Thomson	Menispermaceae	H	Chronic rheumatism, Urinary troubles, Snake biting, Gout, Heart stimulant, Jaundice	M, V	Giloe	Stem, Leave, Roots
123.	<i>Albizia lebbek</i> (L.) Benth.	Mimosaceae	T	Dysentery, Renal Problems, Dyspepsia	F, M	Sarih	Seeds, Leave, Bark
124.	<i>Ficus benghalensis</i> L.	Moraceae	S	Rheumatics, Toothache, Urinary infection, Goiter, Cracks in the foot	R, M	Bar	Bark, Latex, Leaves
125.	<i>Ficus caica</i> Decne. Ex Miq	Moraceae	T	Stomachic, Cutaneous troubles, Asthma, Infertility	M	Dhudda	Bark, Leave, seeds
126.	<i>Ficus glomerata</i> hort. Ex Miq.	Moraceae	T	Stomachic, Cutaneous troubles	F, E, M	Umer	Leave, fruits
127.	<i>Ficus infectoria</i> Roxb.	Moraceae	T	Cutaneous troubles, Stomachic, Menstruation disorderness	F, M	Pallakhare	Leaves
128.	<i>Ficus palmate</i> Forssk.	Moraceae	T	Laxative, Lungs, Bladder problems	E, R, M, V	Panj-Khasara	Fruits
129.	<i>Ficus racemosa</i> Willd.	Moraceae	T	Stomachic, Carminative, Diarrhea, Diabetes, Vulnerary, Piles	E, M, V	Tarayamblu	Fruits, roots, Bark, latex
130.	<i>Ficus religiosa</i> Decne. Ex Miq.	Moraceae	T	Asthma, Cutaneous troubles, Stomachic, Menstruation disorderness	R, M	Pippal	Leave, bark, Fruits
131.	<i>Morus alba</i> Bureau	Moraceae	T	Refrigerant, Purgative, Vermifuge, Anthelmintic, Diaphoretic	E, F, M	Toot	Fruits, Bark, Roots, Leaves
132.	<i>Musa sapientum</i> L. f. hookeri. King	Musaceae	T	Intestinal disorders, Nephritis, Respiratory problems, Gonorrhoea, Hypertension	E, R, M	Kela	Fruits, Leaves
133.	<i>Psidium guajava</i> L.	Myrtaceae	T	Astringent, Wounds, Ulcers, Prolepsis, Toothache, Stool	E, M	Amrood	Leave, Bark
134.	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	T	Throat problems, mouth washes, Diabetes, Eye Troubles	E, F, M	Jamun	Bark, Leave, Seeds
135.	<i>Boerhavia diffusa</i> Engelm. & A. Gray	Nyctaginaceae	S	Expectorant, Diuretic, Laxative, Asthma, Dyspepsia	M	Gadhapurna / Punarnava, Lit-sitt	Bark, Root
136.	<i>Jasminum grandiflorum</i> Hook. f.	Oleaceae	S	Dysentery, Renal Problems, Dyspepsia	R, M	Malti	Flowers, Leaves
137.	<i>Jasminum humile</i> B. Heyne ex Wall	Oleaceae	H	Tuberculosis, Mouth blisters, Eye troubles	M	Jahi / Peeli chameli	Leave, roots, Flowers
138.	<i>Nyctanthes arbortristis</i> L.	Oleaceae	S	Antibilious, Expectorant, Fevers, Sciatica	M	Har singar	Leaves
139.	<i>Argemone maxicana</i> L.	Papaveraceae	S	Cataract, night blindness, Xerophthalmia, ophthalmia, Leprosy, Cutaneous trouble, Asthmas	M	Satyanashi / Shail kanta / peela kandiara	Latex, Seed Oil

140.	<i>Lens culinaris</i> Medik.	Papilionaceae	H	Piles, Vomiting, Diarrhea	E, M	Masar	Seeds
141.	<i>Martynia anua</i> L.	Pedaliaceae	H	Epilepsy, sore throat, Inflammations	M	Kau	Fruits, Leaves
142.	<i>Sesamum orientale</i> Sieber ex C. Presl	Pedaliaceae	H	Diuretic, Emollient, Lactagogue, Cough, Piles, Menstrual disorder, Diarrhoea	E, F, R, M, V	Til	Leave, Seeds
143.	<i>Plantago lanceolata</i> Hook.	Plantaginaceae		Astringent, vulnery, wounds, Sores, diuretic, Purgative	M	Patrah	Leaves
144.	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	H	Diuretic, Vesicant, Abortifacient, Dyspepsia, piles, diarrhea, skin diseases, Ulcers	M	Chitra	Roots
145.	<i>Arundo donex</i> L.	Poaceae	S	Diuretic, Laxative, Digestive Disorders in cattle	M	Nal / Nul	Leave, Culms
146.	<i>Desmostachya bipinnata</i> (L.) Stapf	Poaceae	H	Rheumatics, Toothache, Urinary infection, Goiter, Cracks in the foot	R, M	Kusha / Dabb	Culms
147.	<i>Oryza sativa</i> L.	Poaceae	H	Hemicramia, Pneumonia	E, F, M	Dhan	Seeds, Stem, Leaves
148.	<i>Triticum aestivum</i> L.	Poaceae	H	Skin irritations, Cough, Urine	E, F, R, M	Kanak	Seeds
149.	<i>Zea mays</i> L.	Poaceae	H	Piles, Swellings in Kidney,	E, F, R, M	Chhali	Grains, Syles
150.	<i>Hordeum vulgare</i> L.	Poaceae	H	Diuretic, Diabetes	E, R, M	Jau	seeds
151.	<i>Rumex hastatus</i> D. Don	Polygonaceae	H	Antipyretic, Diuretic, Fever, Cathartic, Expecto- rant, Tonic, Tonic, Respiratory trouble	E, F, M	Khatmith	Fruits, leaves
152.	<i>Ranunculus sceleratus</i> L.	Ranunculaceae	H	Sneezing, Catarrh, kidney-problems, toothache	M	Jal-Dhania	Seeds, Leaves, Roots
153.	<i>Thalictrum foliolosum</i> L.	Ranunculaceae	H	Heart weakness	M, V	Pili jari	Roots
154.	<i>Adonis aestivalis</i> M. Bieb.	Ranunculaceae	H	Heart weakness	E, M	Ban-saunf	seeds
155.	<i>Thalictrum foliolosum</i> Hook. f. & Thomson	Ranunculaceae	H	Intermittent fever, Eye troubles, Snake biting, Cholera	R, M	Mamiri	Leaves
156.	<i>Zizyphus manuritiana</i> Adans.	Rhamnaceae	S	Diarrhoea, Nose bleeding, Whooping cough	E, F, M	Ber / Malah	Bark, Leaves
157.	<i>Amygdalus communis</i> L.	Rosaceae	S	Cough, Bronchitis, Diuretic, Gonorrhoea, Urinal troubles	E, M	Badam	Kernels
158.	<i>Eriobotrya japonica</i> (Thunb.) Lindl.	Rosaceae	S	Sedative, Diarrhea, Expectorant	E, M	Loquathh	Fruits, Flowers, Leaves
159.	<i>Prunus persica</i> Stokes	Rosaceae	S	Demulcent, Antiscorbutic, Ascaricide, Diuretic, Purgative, Cough	E, M	Aru	Leaves, Flowers, Fruits, Bark
160.	<i>Pyrus pashia</i> Buch.	Rosaceae	S	Wormicides, Vermifuge, Astringents	E, F, M	Kainth	Seeds, leaves

161.	<i>Rosa damascena</i> Mill.	Rosaceae	S	Antipyretic, Diuretic, Fever, Tonic, Malarial fever, Cathartic	R, M	Bulgariun Gulab	Flowers
162.	<i>Rosa moschata</i> Herrm.	Rosaceae	S	Laxative, Expectorant, Diaphoretic, Antipyretic, Diuretic, Cathartic, Expectorant, Tonic, Cathartic, Tonic, Respiratory trouble	R, M	Kubjak Gulab	Flowers
163.	<i>Rubus ellipticus</i> Sm.	Rosaceae	S	Laxative, Demulcent, Diuretic, appetizer	E, M	Akhey	Fruits
164.	<i>Catunaregam nutans</i> (DC.) Tirveng.	Rubiaceae	T	Astringent, Diarrhoea, Dysentary, Ematic, Boneache during fever	M	Rara	Bark
165.	<i>Galium aparine</i> L.	Rubiaceae	H	Diuretic, Refrigerant, Aperients, Antiscorbutic	E, F, M	Ghaa	Whole plants
166.	<i>Randia dumetorum</i> (Retz.) Poir	Rubiaceae	T	Laxative, Expectorant, Diaphoretic, Antipyretic	F, M	Radda	Fruits, Bark
167.	<i>Rubia cordifolia</i> Thunb.	Rubiaceae	S	Expectorant, Diaphoretic, Diuretic, Respiratory trouble	M	Majeest	Leaves
168.	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	T	Diarrhea, Dysentery, Renal Problems, Dyspepsia, Fever, Jaundice	E, R, M	Bil	Fruits, Pulp, Bark
169.	<i>Citrus aurantium</i> L.	Rutaceae	S	Digestive disorders, Diarrhoea, Wormicides	E, M	Sangtra	Fruits, Rind
170.	<i>Citrus jambhiri</i> Lush.	Rutaceae	T	Anthelminite, Diuretic, Expectorant, Urinary problems, Skin problems	E, M	Jhhamiri	Fruits
171.	<i>Citrus limon</i> (L.) Burm. f.	Rutaceae	S	Carminative, Scurvy, Hemicranias	E, M	Nimbu	Fruits, Rind
172.	<i>Citrus maxima</i> (Burm.) Merr.	Rutaceae	T	Cholera, Convulsive cough, Refrigerants	E, M	Choktra	Leave, fruits
173.	<i>Citrus medica</i> L. var. <i>alata</i> Tanaka	Rutaceae	S	Diarrhoea, Wormicides	E, M	Kagji Nimbu	Fruits
174.	<i>Murraya koenigii</i> (L.) Spreng.	Rutaceae	S	Diarrhea, Dysentery, Piles, Stomachic, Renal troubles	E, M	Gandhela / Karri patta	Leave, Roots
175.	<i>Zanthoxylum alatum</i> Roxb.	Rutaceae	S	Antipyretic, Diuretic, Fever, Cathartic, Expectorant, Respiratory trouble	R,M,V	Tirmiri	Bark, Leaves
176.	<i>Salix disperma</i> Roxb. Ex D. Don	Salicaceae	T	Headache, Inflammations, Dyspepsia, Hemorrhage of lung	M	Beuns	Bark, Flowers, Woods
177.	<i>Cardiospermum halicabum</i> L.	Sapindaceae	S	Headache, earache, Nervous disease, Rheumatism	M	Kanphora / Kanphala	Leave, Roots
178.	<i>Dodonaea viscosa</i> Royen ex Blume	Sapindaceae	S	Rheumatism, Snake biting, Soporiferous	M	Mhendru	Leaves
179.	<i>Sapindus mukorossi</i> Gaertn.	Sapindaceae	S	Emetic, expectorant, Epilepsy, Chlorosis, Excessive salivation	M	Rithha / Dodan	Fruits
180.	<i>Verbascum thapsus</i> Brot.	Scrophulariaceae	H	Inflammation of mucous membrane, Diarrhoea, Pulmonary disease of cattle, Heart stimulant, Irritation	M	Gider-tamakhu / Bhoot lankra	Leaves
181.	<i>Capsicum annuum</i> L.	Solanaceae	S	Cholera, hysteria, syphilitic skin diseases	E, R, M	Pipali	Fruits

182.	<i>Cestrum nocturnum</i> L.	Solanaceae	H	Cholera, Toothache	M	Rat-rani	Leaves, flowers
183.	<i>Datura stramonium</i> Wall.	Solanaceae	S	Inflammations, Boils, Headache, Asthma, Bronchitis, Toothache, Urinogenetical disorders	R, M	Dhatura	Leave, Seeds, roots
184.	<i>Nicotiana tabacum</i> L.	Solanaceae	H	Toothache, Baldness, Vermifuge, whooping cough	M	Tamakhu	Leaves
185.	<i>Solanum indicum</i> L.	Solanaceae	H	Expectorant, Diuretic, Cathartic, Expectorant, Cathartic, Respiratory trouble	F, M	Bharid kantkari	Leaves
186.	<i>Solanum nigrum</i> L.	Solanaceae	H	Tonic, Diuretic, Cathartic, Heart problems, Fever, Dysentery	E, M	Kyaoon	Whole plant
187.	<i>Solanum tuberosum</i> L.	Solanaceae	H	Diuretic Cough, Catarrh	E, M	Alu	Tubers
188.	<i>Solanum xanthocarpum</i> Schrad.	Solanaceae	H	Laxative, Antipyretic, Diuretic, Fever	M	Chhoti kantkari	Stem, Leaves
189.	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	H	Tuberculosis, Weakness, Menstrual disorders, Dropsy, Rheumatism, Inflammation, Ulcers, Scabies, Goiter	M, V	Aswagandha	Roots, Leaves
190.	<i>Abroma augusta</i> (L.) L.F.	Sterculiaceae	T	Dysmenorrhoea, Swellings, leucorrhoea, Sterility	M	Ulat kambal	Leaves, Roots, bark
191.	<i>Pternospermum acerifolium</i> Benth.	Sterculiaceae	H	Expelling Worms, Urinary troubles, Small pox	M	Lachhmann Patta	Flowers, Fruits, Leaves
192.	<i>Broussonetia papyrifera</i> (L.) Vent.	Urticaceae	T	Diarrhoea, Dysentary, Ematic	M	Japani toot	Flowers
193.	<i>Pouzolzia zeylanica</i> Kuntze	Urticaceae	H	Wormicide	E, M	Shigra	Seeds
194.	<i>Urtica dioica</i> Thunb.	Urticaceae	H	Diarrhoea, Intestinal worms, Cleaning of dandruff	M	Bichhubuti	Roots, Seeds, Leaves
195.	<i>Vitex negundo</i> L.	Verbenaceae	S	High blood pressure, Excrete out the urine, Catarrh, Headache, Dengue fever, Snake biting	M	Banna	Leaves
196.	<i>Viola betonicifolia</i> Bojer ex Baker	Violaceae	H	Laxative, Expectorant, Diaphoretic, Antipyretic, Diuretic, Fever, Cathartic, Expectorant, Tonic, Malarial fever, Cathartic, Tonic, Respiratory trouble	M	Banaksha	Whole plant
197.	<i>Vitis vinifera</i> L.	Vitaceae	S	Laxative, Diuretic, Demulcent, Dog-biting, Diarrhoea, Skin infections	E, M	Angoor	Leaves, Fruits
198.	<i>Curcuma longa</i> L.	Zingiberaceae	S	Rheumatics, Toothache, Urinary infection, Goiter, Cracks in the foot	E, R, M	Haldar	Rhizomes
199.	<i>Costus speciosus</i> L.	Zingiberaceae	H	Dyspepsia, Cough, Cold, Jaundice	E, M	Pokharmol	Rhizomes

200.	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	H	Bronchitis, Dyspepsia, Cough, Cold, Toothache, Jaundice	E, R, M	Adark	Rhi- zomes
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Abbreviations used- H=Herb, S=Shrub, T=Tree, E=Edible, F=Fodder, R=Religious, M=Medicinal, V=Veterinary-Practices

Among the most cured diseases were cough cold/ rheumatism, stomachic/ digestive disorders, wounds/ soars/ pimples/ blisters, Urinary disorders, diarrhea, respiratory problems, dysentery and bilious fever/ malaria (Figure 1, Figure 2). Other studies also showed gastrointestinal pathologies (diarrhea, vomit, and stomach-ache) and respiratory disorders as the most frequently cured ailments with medicinal plants.^{26, 27 & 28}

Some of the plants that are used by the inhabitants of Hamirpur, Bilaspur, and Mandi region find mention in ancient medicinal literature and are also used in different medicines systems such as in the Ayurveda for example *Acacia catechu*, *Cordia dichotoma*, *Embllica officinale*, *Taraxacum officinale*, *Terminalia bellirica*, *Terminalia chebula*, and *Tinospora cordifolia*, *Vitex negundo*.

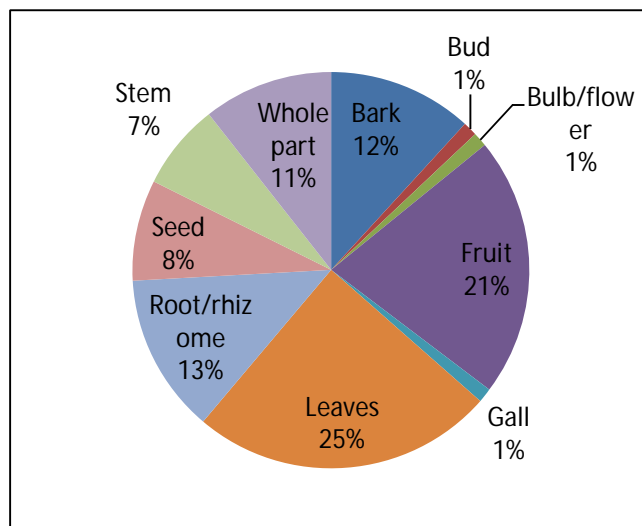


Figure 1: Plant part used for treating various ailments.

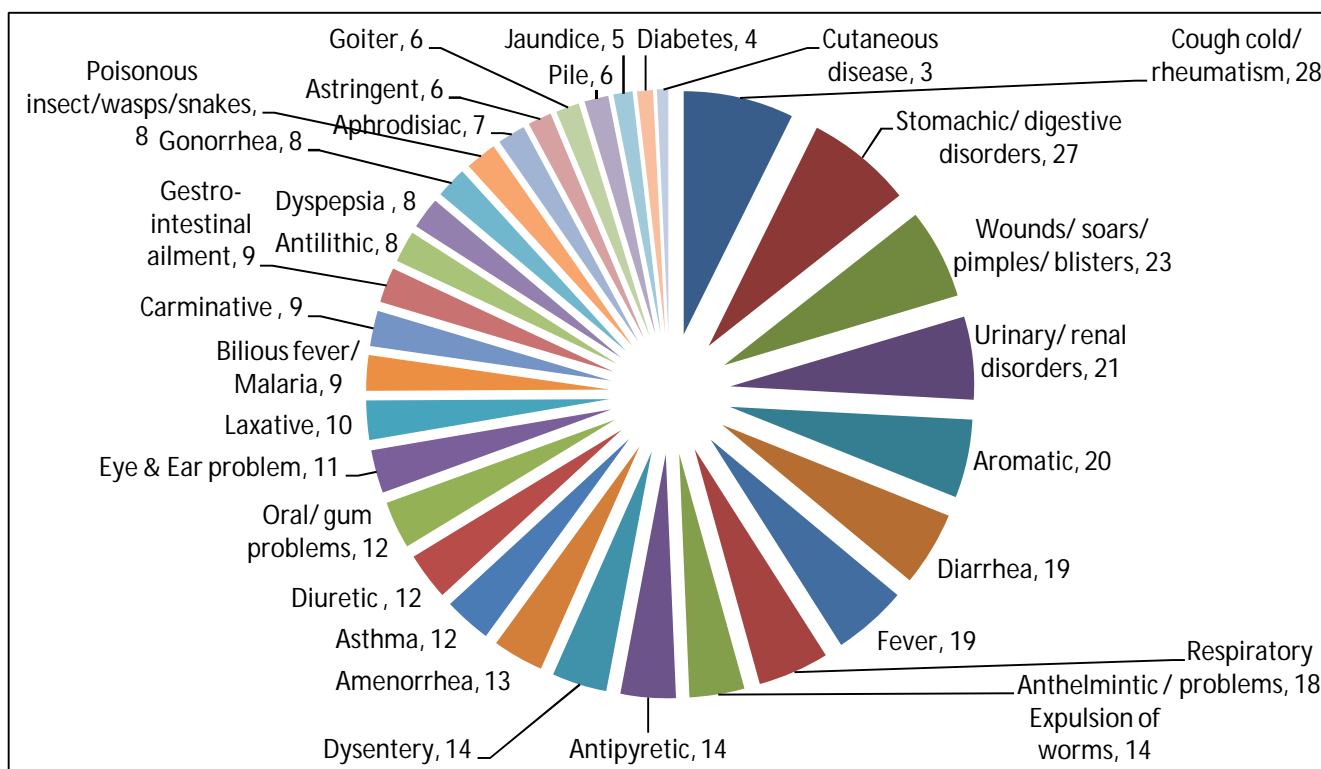


Figure 2: Type of major ailment cured by plants identified in the area of study.

The methods of using these plant parts vary according to the nature of ailment. The methods of preparation fall into categories viz., grinding, dried powder, decoction, juice extraction, poultice or usage in cuisine preparation. In some cases, plant parts are used as such in fresh form directly. The most common method

was grinding of plant parts of various species along with other ingredients like jaggery, carom seeds, black pepper, onion, wheat flour, alum, sugar etc. In majority of the cases, a decoction of plants was prescribed for respiratory and digestive disorders like cough, fever, constipation, diarrhea, etc. while inhalation of

burnt leaves was suggested for treatment of asthma and bronchitis. Ailments like boils, wounds, inflammation, etc. were treated by applying poultice of seeds, leaves, bulbs. For curing fever dual treatment was suggested, i.e., some plant parts like stem and flowers are administered internally in the form of decoction while root paste in the form of decoction while root paste in the form of another plant is applied externally on palms of the hands and soles of the feet. Skin disease like eczema was cured by external application of the paste or juice of leaves of certain plants. Based on the initial investigation survey and group discussions where emphasis was on identification of knowledgeable resource persons, it was found that information on the medicinal uses of plants now seems to be confined to elders only. The study emphasized that there is a profound and growing knowledge gap between old and younger generations. Younger generation is ignorant about the vast medicinal resources available in their surroundings and is more inclined towards market resources. They rely more on allopathic medicines may be because these are easily available; they are easy to use and provide immediate relief. Also, the younger generation is migrating and those who still in the villages are not interested in the practice of traditional medicine. Thus traditional health care system might be facing serious challenges because of; migration of youth to cities for taking up employment; and lack of knowledge regarding the use of medicinal plants, time of collection, the part of the plant to be used, storage and preparation or formulation as the local healers do not pass on their knowledge to other members of community as it is their only source of income and they also fear that it could be misused, During the course of study, it was observed that most of the healers did not want to disclose the knowledge regarding the methods of drug preparation from plants as they believe that disclosure reduces the effect of the drugs.

Herbal remedies comprise an important and effective component of the healthcare system in Shivalik hill's plants in the families Leguminosae (14 spp.) followed by Brassicaceae (12 spp.), Asteraceae (9 spp.), Cucurbitaceae (9 spp.), Solanaceae (9 spp.), Moraceae (8 spp.) and Euphorbiaceae (7 spp. each), Rosaceae (7 spp.), Poaceae (6 spp.), Alliaceae (4 spp.), Apiaceae (4 spp.), Lamiaceae (4 spp.), Ranunculaceae (4 spp.), Rubiaceae (4 spp.) being widely used. Most of the herbal medicines were prepared in the form of paste, powder, decoction, extract, and smoke. The parts of plants used for the preparation of herbal remedies were mainly leaves, fruits, roots/rhizomes, bark, and whole plant. These medicinal plants/ plant parts were used to cure different ailment, being widely used for stomachic/ digestive disorders, wounds/ soars/ pim-

ples/ blisters, cough cold/ rheumatism, diarrhea, bilious fever/ malaria, dysentery and respiratory problems. Some plants were used for treating more than one disease. Therefore, efforts should be made to survey the region thoroughly for more such plants, which should be introduced into the experimental gardens to have an idea about the optimum conditions for their growth, and for assessing the right period when the active principles in them is at the maximum level. The role of ethno-medicinal plants for the welfare of humanity will be of immense value in the years to come. The survey conducted in Shivalik hills zone of Himachal Pradesh demonstrated the need for documenting the traditional knowledge of local herbal experts which will otherwise dilute or even erase with the passage of time. Ethno-medicinally important plants of the area, *Cassia fistula*, *Terminalia*, *Aegle marmelos*, *Vitex nigundo* and *Viola serpens* are recommended for further ethno-pharmacological studies.

CONCLUSION: During the study, a total of two hundred species of plants have been identified and enumerated from Shivalik hills zone of Himachal Pradesh, North-West Himalaya. The highest number of species belongs to the families Brassicaceae, Cucurbitaceae, Leguminosae, Asteraceae, Euphorbiaceae, Solanaceae, Ranunculaceae and Sapindaceae. A wide range of diseases of human ranging from cough and cold to asthma and bronchitis, cuts and wounds to snakebites, and are treated by the traditional healers of study area with the help of these local plant remedies. Some of these plants are also used for ethno-veterinarian practices by livestock owners to diagnose animal diseases like foot and mouth disease, constipation, dysentery and de-worming etc. It was observed that unsustainable collection methods, poor post-harvest methods, soil erosion, intense deforestation and grazing animals are causing serious threat to these plants.

ACKNOWLEDGEMENT: The authors appreciated the collaboration of the key informants (Vaidya) and village elders who spread their time and provided this valuable knowledge on ethno-medicinal plants.

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