

Documentation of Medicinal Plants used by Traditional Healers in the vicinity of Panthaghati-Pujarli region, District Shimla, Himachal Pradesh

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Abstract

Plants of medicinal importance are the treasure for meeting our future needs and will also help in resolving elements which will form the basis of new knowledge and technology. The indigenous knowledge and traditional practices of medicinal plants are vanishing fast. Himachal Pradesh, which lies in the Indian Himalaya, has a rich diversity of medicinal plants. This paper brings together existing information with the results from recent field survey based on the interactions with herbal healers, local Vaid, rural women, and old experienced informants. The present study was conducted to explore ethno-botanical diversity and importance of local plants harnessing for medicinal purposes by the local people of Panthaghati-Pujarli region of district Shimla, Himachal Pradesh, India. Total of 67 plant species belonging to 61 genera and 43 families were recorded from the study area. Across family wise distribution Rosaceae with the most dominant family followed by Asteraceae, Rutaceae, Solanaceae, Moraceae, Lamiaceae (3 species each), Fabaceae, Asphodelaceae, Pinaceae, Zingiberaceae, Utricleae, Oxalidaceae, Polygonaceae (2 species each) and rest of the 32 families are represented by one species each. The plant parts used were leaves, roots, bark, fruits, seeds, etc. This study provides comprehensive information about the medicinal plants used in the treatment of various ailments like infections, anti-diabetes, digestive disorders, respiratory problems, female diseases, antidotes, for cuts & wounds, for curing many skin diseases, jaundice & malaria like diseases, dental problems etc. Herbal medicines are specifically used as an alternative to life threatening condition in order to improve health care. The utilization of traditional medication plays a vital role in treating diseases when modern medicine proves to be futile.

Keywords: *Ethno-botanical, Traditional healers, ailments, Shimla*

I. Introduction

Since time immemorial, mankind has used plant extracts from different plants to cure many diseases and thus relieve him from physical agony. In our country, the traditional system of medicine plays important role in health care of rural people of all types of ailments. The healing power of traditional herbal medicines have been realized and documented since Rigveda and Atharvaveda. The indigenous systems of medicine namely AYURVEDA, SIDDHA, and UNANI have been in existence for several centuries. These indigenous systems of medicine cater to the needs of nearly 70% of our population residing villages. However, our knowledge of medicinal plants has been inherited traditionally. "Traditional medicine is time-tested and still caters to the health needs of the society and provides health care through prophylactic treatment and rejuvenation. Traditional medicine comprises a medical aspect of traditional knowledge that developed over generations within various societies before the era of modern medicine. In the traditional healing system, the plant kingdom has been a primary source of medicine. Since ancient ages, humans have been looking forward to nature to cater to their basic needs, especially medicines. In 1985, it was estimated by WHO, that nearly 65% of the global population relied on traditional medicines which were derived from plant source. An individual plant can be used to treat more than one disease. It is estimated that out of approximately 300,000 species of terrestrial flora, nearly 6% of higher plants only have been investigated for its pharmacological effect and approximately 15% have been investigated phytochemically. The reason for using plant-based drugs is because of the following advantages: safety, effectiveness, cultural preferences, inexpensiveness and easy availability (M.Noronha, R.B. Subarmanayam, 2020). In spite of the many challenges in drug discovery from natural sources

especially medicinal plants, natural products isolated from such source can be predicted as essential component in search for new medicine (Balunas and Kinghorn, 2005). Several developing societies utilize traditional medicine which is the sole system of health care that is accessible and inexpensive. Those making use of herbal medicines should be certain that the products they procure are harmless and contain specific contents, may it be a particular herb or amount of a specific herbal element (Wachtel-Galor and Benzie, 2011).

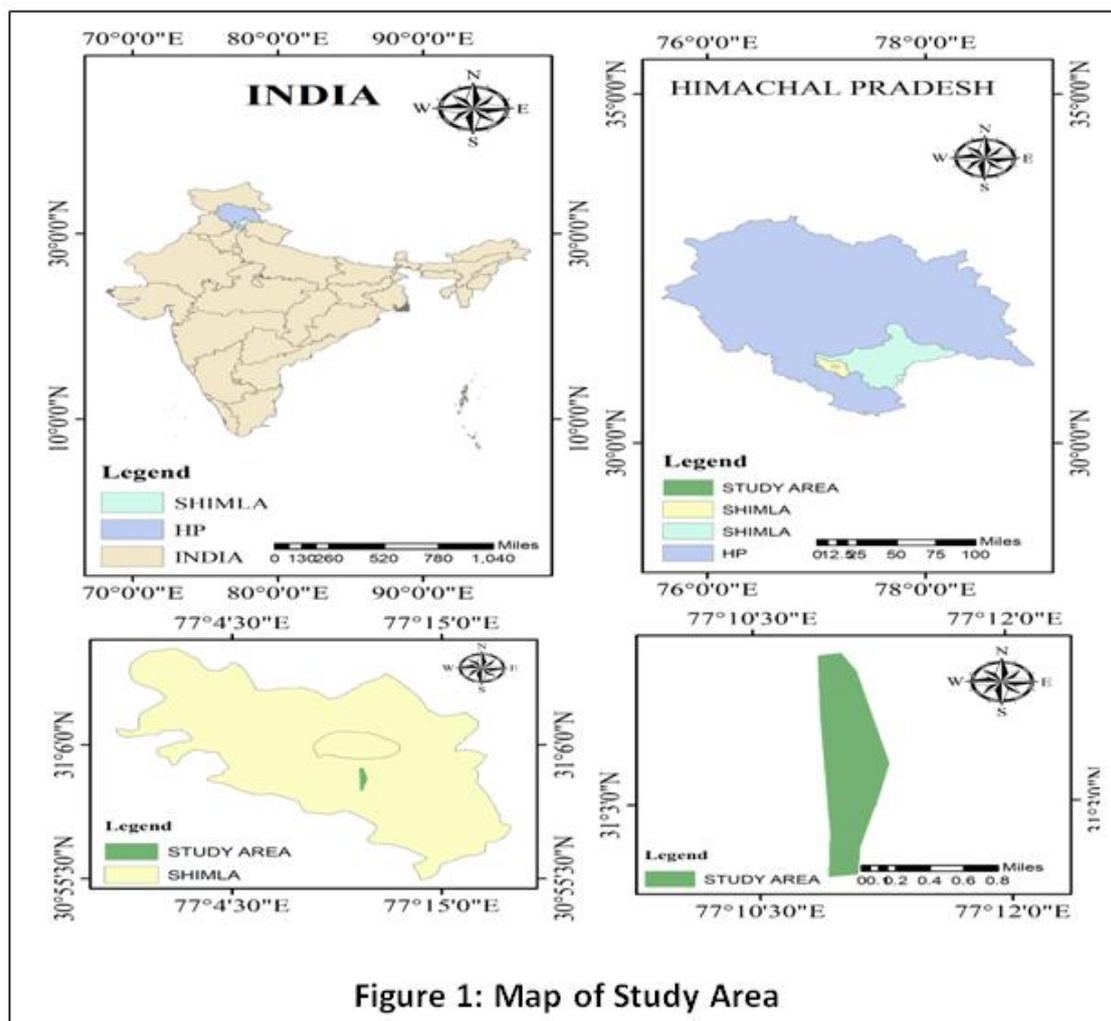
The use of plants for therapeutic purpose has been practised in India since the Vedic period, and even today, our country is one of the major contributors to the world in terms of herbal drugs and their raw materials (Grunwald, 2000). Such a community based traditional knowledge on ethnobotanical plants is, however, progressively eroding due to loss of traditional cultural systems, and thus calls for a strong need for documentation of indigenous knowledge related to plant uses so as to make it available for the welfare of future generations. Majority of Indian population live in villages and rural masses especially the tribal ones exhibit a very close association with surrounding environment. Himachal Pradesh is a hilly state situated in the Western Himalaya with an altitude ranging from 350m to 7000m above mean sea level and, covers an area of 55,673sq.km. This hilly State comprises a good heritage of ethno-botanical flora and natural wealth in the North Western Himalayan region between 30°22'44 "N to 33°12'44"N latitude and 75°45'44"E to 79°04'20"E latitude, extends over an area of about 55,673 sq.km. Geographically, the State is divided in to three distinct regions, the Shivalik or outer Himalaya, mid-hills and the greater Himalaya or high altitude zone. The mid hill region of Himachal comprises regions between the elevation range of 1500m to 3500m above mean sea level and includes Shimla district along with other districts. This district is a rich repository of medicinal and aromatic plants and traditional knowledge associated with these plants.. Medicinal and ethno-botanical uses of many of these species were documented by various researchers from different parts of the Himachal Pradesh based on the information provided by the local ethnic people. The Shimla hills are rich in floristic diversity as is evident from the works of Sir Henry collect in Flora Simlensis (Atkinson .1882) and Lady Elizabeth Smith and H.Babington Flowers (C.Smith,1899).knowledge about the medicinal use of plants is rapidly disappearing in the area as new generation is un willing to take interest in the traditional study of medicinal plants.

Thus this study was initiated to document the traditional medicinal plants. Therefore, present investigation was conducted in the area to document medicinal uses of local plants with their relative importance and to educate the local people about the declining wealth of traditional medicinal flora from the area.

II. Materials And Methods

STUDY AREA

The state of Himachal Pradesh is located in the Northern part of country in lower Himalayas. The normal weather of various regions in the state varies as per altitude levels. H.P rich in flora and fauna. Himachal Pradesh, located in the lap of the Himalayas, has varied climatic conditions due to variations in altitudes ranging from 450 meters to 6500 meters above mean sea level from west to east and from south to north. These wide variations in altitude, topography and climate have made this state a home for wide variety of plants and animals. The Shimla hills, located at 31.61°N 77.10°E, lie in the south-western ranges of the Himalayas. The Shimla hills have a rich repository of medicinal and other useful plants. Shimla lies in the northern part of India. It lies between the longitude 77.00" and 78.19 The elevation of the district ranges from 300mt.(984ft) to 6000mt. (19,685ft). Shimla district lies in the North-western ranges of the Himalayas. It is located 31.61° N 77.10° E with an average altitude of 2397.59 meters (7866.10 ft) above mean sea level. Panthaghati – Pujarli region is a medium size urban-rural area located in Shimla Tehsil of Shimla district, Himachal Pradesh. It comes under Pujarli Beolia Panchayat. The area is located 8-15 km away from Shimla, which both district & sub – district headquarter of the area.



III. Methodology

The field survey was conducted from June 2021 to August 2021 in order to explore ethno-botanical diversity and importance of local plants harnessing for medicinal purposes by the local people of Panthaghathi-Pujarli region, district Shimla, Himachal Pradesh. Data was collected through personal interviews. The medicinal plants used in the treatment of various ailments in the study area were collected with the help of local knowledgeable persons, traditional healers, and botanists. The photographs of these plants were taken during the field visits. Botanical names of different plants were available from the online websites. Then, the plant specimen pictures were collected by their local names. The plants were identified with the help of herbaria, floras and manuals on Himalayas and Himachal Pradesh. Identification of the collected specimens was also done by using standard flora written by researchers available at the library of Himachal Pradesh University (HPU), Shimla. The medicinal and other uses for these plants were recorded from the available literature in books and journals. The secondary data has been collected from published as well as unpublished sources. Some study materials has been referred from websites also.

IV. Results And Discussions

The present study was conducted to explore ethno-botanical diversity and importance of local plants harnessing for medicinal purposes by the local people of Panthaghathi-Pujarli region of district Shimla, Himachal Pradesh, India. The study recorded total 67 plant species of 61 genera belonging to 43 families. Across family wise distribution Rosaceae was the most dominant family followed by Asteraceae, Rutaceae, Solanaceae, Moraceae, Lamiaceae (3 species each), Fabaceae, Asphodelaceae, Pinaceae, Zingiberaceae, Utricaceae, Oxalidaceae, Polygonaceae (2 species each) and rest of the 32 families are represented by one species each (Fig.-3).

However, of the total recorded plants revealed, herbs contributed the major proportion (40%) followed by trees (33%), shrubs (21%), climber (5%), fern (1%) (Fig.-2). Most utilized parts were leaves recorded from

67 plant species to cure ailments followed by other components viz. whole plant (17), fruits (13), seeds(7), stems (5), flowers (3), rhizome(2) (Fig. -4) .Plants used by locals were tabulated in alphabetical order of botanical names, local names, family, growth habitat and part of the plant used shown below in the Table -1. The study presents a brief account of the uses of various medicinal plants against the diseases i.e. infection, anti-diabetic, digestive disorder, respiratory diseases, boil & wounds, antidotes, anti- cancerous & anti- tumorous, female diseases, aphrodisiacs, dental diseases, weakness, birth control, skin diseases, joint pains , jaundice& malaria by the local people of Panthaghati- Pujarli region of district Shimla. The largest number of 30 plant species were used for the treatment of digestive disorders, 21 plant species were used for the treatment of respiratory problems, 20 plant species used for the treatment of infections,16 plant species were used in the treatment of wounds & boils, 15 species of plants were used to treat skin diseases, 13 plant species were used in the preparation of antidotes, 12 species of plants were used in the treatment of joint pains, 10-10 species each were used for the treatment of diseases like anti-cancerous & anti- tumorous ,9 plant species each used for the treatment female diseases, dental diseases and weakness,8-9species each were used for the treatment of birth control & diseases like jaundice & malaria explained in the given Table-2. .

The outcomes of the present investigation was identical with the study did by Miguel et. al., (2010) who also reported antimicrobial, antioxidant and anti-inflammatory properties of the plant *Punica granatum*. Present study was also validated by the studies of Kumar et. al., (2010) who reported anti-inflammatory and antiseptic properties of plant *Allium candense*.

TABLE No. 1: Systematic list of medicinal plant species with their Botanical names, Local names, Families, Growth Habit& Part used.

Sr no.	Botanical Names	Local Names	Family	Growth Habitat	Part Used
1	<i>Adiantum incisum</i>	Maiden hair fern	Pteridaceae	Fern	Whole plant
2	<i>Ajuga integrifolia</i>	Neelkanthi	Lamiaceae	Herb	Leaves
3	<i>Albizzia julibrissin</i>	Mimosatree,Barau	Fabaceae	Tree	Bark
4	<i>Allium canadense</i>	Wild onion	Amaryllidaceae	Herb	Whole plant
5	<i>Aloe aristata</i>	Aloe vera	Asphodelaceae	Herb	Leaves
6	<i>Aloe barbadensis</i>	Ghikumari	Asphodelaceae	Herb	Leaves
7	<i>Amaophophallus konjac</i>	Elephant Yam	Araceae	Herb	Whole plant
8	<i>Amaranthus viridis</i>	Jungalichaulayi	Amaranthaceae	Herb	Leaves
9	<i>Anacyclus pyrethrum</i>	Karka	Asteraceae	Herb	Root & Flower
10	<i>Azardirachta indica</i>	Neem	Meliaceae	Tree	Whole plant
11	<i>Bauhinia variegata</i>	Kachnaar	Fabaceae	Tree	Root & Leaves
12	<i>Berberis aristata</i>	Kashmal	Berberidaceae	Shrub	Fruits&roots
13	<i>Bryophyllumpinnatum</i>	Patharchaat	Crassulaceae	Herb	Leaves
14	<i>Cannabis sativa</i>	Bhang	Cannabaceae	Herb	Whole plant
15	<i>Catharanthus roseus</i>	Sadabahar ,sadaphul	Magnoliopsida	Herb	Whole plant
16	<i>Cedrus deodara</i>	Deodar	Pinaceae	Tree	Wood
17	<i>Cestrum nocturnum</i>	Raat ki rani	Solanaceae	Shrub	Whole plant
18	<i>Cirsium arvense</i>	Canada thistle	Asteraceae	Shrub	Leaves & root
19	<i>Citrus lemon</i>	Nimbu	Rutaceae	Tree	Leaves & Fruit
20	<i>Coriandrum sativum</i>	Dhaniya	Apiaceae	Herb	Leaves & seeds
21	<i>Curcuma longa</i>	Haldi	Zingiberaceae	Herb	Rhizome
22	<i>Cuscutareflexa</i>	Akashbel	Convolvulaceae	Climber	Stem
23	<i>Cynodondactylon</i>	Dhrub	Poaceae	Herb	Whole plant
24	<i>Datura innoxia</i>	Dhutra	Solanaceae	Herb	Leaves & seeds
25	<i>Dioscoreadeltoidea</i>	Shinglimingli	Dioscoreaceae	Climber	Whole plant
26	<i>Elaeagnusumbellate</i>	Ghayeen	Elaeagnaceae	Shrub	Whole pant
27	<i>Euphorbia heterophylla</i>	Dhooghali	Euphorbiaceae	Herb	Leaves
28	<i>Ficus palmate</i>	Anjir	Moraceae	Tree	Fruit
29	<i>Ficus racemose</i>	Tyamal	Moraceae	Tree	Root

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30	<i>Ficus religiosa</i>	Peepal	Moraceae	Tree	Stem&bark
31	<i>Girardinadiversifolia</i>	Bichhubooti	Urticaceae	Shrub	Fruit&root
32	<i>Hypericum oblongifolium</i>	Basant	Hypericaceae	Shrub	Seed
33	<i>Juglans regia</i>	Akhrot	Juglandaceae	Tree	Leaves &bark
34	<i>Mentha longifolia</i>	Pudina	Lamiaceae	Herb	Leaves
35	<i>Morchella esculenta</i>	Guchi	Morchellaceae	Herb	Whole pant
36	<i>Murrayakoenigii</i>	Curry patta, gandhela	Rutaceae	Tree	Leaves& branches
37	<i>Musa acuminata</i>	Banana	Musaceae	Tree	Whole plant
38	<i>Myrica esculenta</i>	Kaphal	Myricaceae	Tree	Bark
39	<i>Ocimumtenuiflorum</i>	Tulsi	Labiataeae	Herb	Whole plant
40	<i>Opuntia ficus- indica</i>	Shitershoo	Cactaceae	Shrub	Stem & flower
41	<i>Oxalis corniculata</i>	Khatti ambi	Oxalidaceae	Herb	Leaves
42	<i>Oxalis latifolia</i>	Kunth	Oxalidaceae	Herb	Leaves
43	<i>Pinus roxburgii</i>	Chil,chir	Pinaceae	Tree	Seeds&leaves
44	<i>Prunus cerasoides</i>	Pajja	Rosaceae	Tree	Seeds
45	<i>Prunus domestica</i>	Plum	Rosaceae	Tree	Fruit & bark
46	<i>Psidium guajava</i>	Amrood	Myrtaceae	Tree	Fruit & leaves
47	<i>Punica granatum</i>	Daru	Punicaceae	Tree	Fruit&bark
48	<i>Pyrus pashia</i>	Kainth	Rosaceae	Tree	Fruit
49	<i>Quercus glauca</i>	Ban	Fagaceae	Tree	Whole plant
50	<i>Ranunculus arvensia</i>	Sarson	Ranunculaceae	Herb	Flowers & leaves
51	<i>Rhododendron arboteum</i>	Buransh	Ericaceae	Tree	Whole plant
52	<i>Rosa Amadeus</i>	Gulab	Rosaceae	Shrub	Fruit & flower
53	<i>Rubia cordifolia</i>	Majit	Rubiaceae	Shrub	Whole plant
54	<i>Rubus ellipticus</i>	Aakhe	Rosaceae	Shrub	Fruit
55	<i>Rubus niveus</i>	Rasberry	Rosaceae	Shrub	Fruit&roots
56	<i>Rumex hastatus</i>	Khatmith	Polygonaceae	Shrub	Whole plant
57	<i>Rumex obtusifolius</i>	Mermalia	Polygonaceae	Herb	Whole plant
58	<i>Solanum nigrum</i>	Mako	Solanaceae	Herb	Leaves
59	<i>Taraxacum officinale</i>	Dandelion, dhoodhai	Asteraceae	Herb	Roots
60	<i>Thalictrum foliolosum</i>	Mamira	Ranunculaceae	Herb	Roots
61	<i>Tinospora cordifolia</i>	Gloe	Menispermaceae	Climber	Stem
62	<i>Urtica fissa</i>	Bichhu	Urticaceae	Herb	Leaves
63	<i>Vitex negundo</i>	Bana	Lamiaceae	Tree	Stem&leaves
64	<i>Woodfordiafruticosa</i>	Dhaidhaura	Lythraceae	Shrub	Flower&fruit
65	<i>Zanthoxylum armatum</i>	Timbur	Rutaceae	Shrub	Whole plant
66	<i>Zingiber officinale</i>	Adrak	Zingiberaceae	Herb	Rhizome
67	<i>Zizipjasmauritiana</i>	Bair	Rhamnaceae	Tree	Fruit

Table No. 2: No. of medicinal plant species against various diseases from the collected plant species.

Sr. No.	Diseases	No. of Plant Species	Sr. No.	Diseases	No. of Plant Species
1	Infection	20	9	Aphrodisiacs	4
2	Anti-diabetic	10	10	Dental diseases	9
3	Digestive	30	11	Weakness	9
4	Respiratory	21	12	Birth control	8
5	Boil and wound	16	13	Skin diseases	15
6	Antidotes	13	14	Joint pains	12
7	Anti-cancerous and anti-tumorous	9	15	Jaundice and Malaria	9

8	Female diseases	10			
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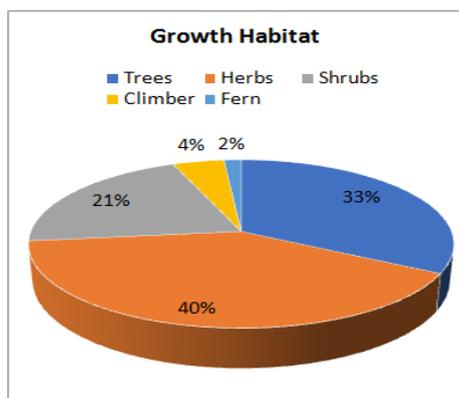


Figure 2: Percentage representation of growth habitat.

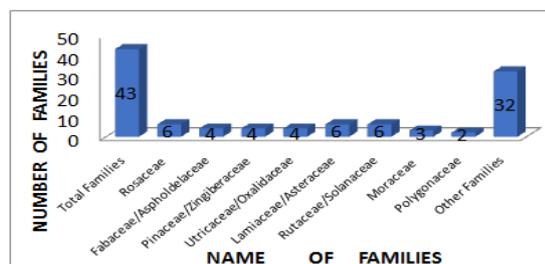


Figure 3: Dominant families of medicinal plants recorded in the

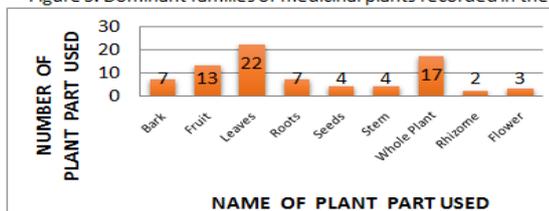


Figure 4: Number of plant part used as medicine.

Adiantum incisum (Maiden hair fern)	Ajuga integrifolia (Neelkanthi)	Albizzia julibrissin (Barau)	Allium canadense (Wild onion)	Aloe aristata (Aloe vera)
Aloe aristata (Aloe vera)	Amaopphalluskonjac (Elephant Yam)	Amaranthus viridis (Jungalichaul ayi)	Anacycluspyrethrum (Kar ka)	Azadirachtaindica (Neem)
Bauhinia variegata (Kachnaar)	Berberis aristata (Kashmal)	Bryophyllum (Patharchaat)	Cannabis sativa (Bhang)	Catharanthus roseus (Sadaphul)
Cedrus deodara (Deodar)	Cestrum nocturnum (Raat ki rani)	Cirsium arvense (Canada thistle)	Citrus lemon (Nimbu)	Coriandrum sativum (Dhaniya)

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Curcuma longa (Haldi)	Cuscutareflexa (Akashbel)	Cynodondactylon (Dhrub)	Datura innoxia (Dhutra)	Dioscoreadeltoidea (Shinglimingli)
				
Elaeagnus umbellate (Ghayeen)	Euphorbia heterophylla (Dhoogali)	Ficus palmate (Anjir)	Ficus racemose (Tyamal)	Ficus religiosa (Peepal)
				
Girardianadiversifolia (Bic hhubooti)	Hypericum oblongifolium (Basant)	Juglans regia (Akhrot)	Mentha longifolia (Pudina)	Morchellaesculenta (Guchi)
				
Murrayakoenigii (Gandhela)	Musa acuminata (Banana)	Myrica esculenta (Kaphal)	Ocimumtenuiflorum (Tulsi)	Opuntia ficus-indica (Shitershoo)
				
Oxalis corniculata (Khatti ambi)	Oxalis latifolia (Kunth)	Pinus roxburgii (Chil)	Prunus cerasoides (Pajja)	Prunus domestica (Plum)
				
Psidium guajava (Amrood)	Punica granatum (Daru)	Pyrus pashia (Kainth)	Quercus glauca (Ban)	Ranunculus arvensia (Sarson)

				
Rhododendron arboteum (Buransh)	Rosa Amadeus (Gulab)	Rubia cordifolia (Majit)	Rubus ellipticus (Aakhe)	Rubus niveus (Raspberry)
				
Rumex hastatus (Malora)	Rumex obtusifolius (Mermalia)	Solanum nigrum (Mako)	Taraxacum officinale (Dhoodhai)	Thalictrum foliolosum (Mamira)
				
Tinospora cordifolia (Gloe)	Urtica fissa (Bicchu)	Vitex negundo (Bana)	Woodfordia fruticosa (Dhaidhaura)	Zanthoxylum armatum (Timbur)
				
Zingiber officinale (Adrak)	Ziziphus mauritiana (Bair)			

PHOTOGRAPHS OF THE DOCUMENTED MEDICINAL PLANTS.

V. Conclusion

A total of 67 plant species belonging to 61 genera and 43 families were recorded from the study area. The plant parts used were leaves, roots, bark, fruits, seeds, etc. This study provides comprehensive information about the medicinal plants used in the treatment of various ailments like infections, anti-diabetics, digestive disorders, respiratory problems, female diseases, antidotes, for cuts & wounds, for curing many skin diseases, jaundice & malaria like diseases, dental problems etc. by the local people of Panthaghati-Pujarli region, District Shimla. A total of 67 plant species belonging to 61 genera and 43 families were recorded from the study area. The plant parts used were leaves, roots, bark, fruits, seeds, etc.

30 plant species which was the highest number among all the studied plants was used in the treatment of digestive problems. For the cure of respiratory disorders total 21 plant species were used. Around 20 plant species were used for the treatment of infections, near about 16 plant species were capable to treat wounds & boils. There were nearly 15 plant species used for the treatment of skin diseases. Study area consisted almost 13 plant species which were used in antidote's preparation. 10 plant species for the cure of anti-cancerous & anti-tumorous diseases. Rest of the diseases i.e female diseases, dental diseases & weakness was treated with 9 plant species each. 8 plant species were used for the treatment of birth control. There were 9 plant species for .The recorded medicinal plants are highly valuable for various medicinal uses. Parts of these plants may be assessed pharmacological point of view for its effective utilization. The information on therapeutic use of plants may provide a great potential for awareness among the people to use them. Modern therapeutic medicine is historically based on indigenous therapies and ethnobotanical & ethnopharmacologicals. Globalization of herbal medicine along with uncontrolled exploitative practices and lack of concentrated conservation efforts, have pushed many plant species to the verge of extinction .Thus, the present study not only highlights the use of plants but also focuses on the future conservation which provides very precious biodiversity which will lead for the betterment of human society. Sustainable utilization and management of medicinal plants, based on traditional knowledge, is therefore necessary.

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