World Journal of Pharmaceutical and Life Sciences
WJPLS
www.wjpls.org
SJIF Impact Factor: 6.129

DOCUMENTATION OF TRADITIONAL KNOWLEDGE ABOUT ETHNOBOTANICAL IMPORTANCE OF SOME CULTIVATED AND WILD CLIMBERS AND LIANAS IN BHORANJ TEHSIL OF HAMIRPUR DISTRICT (H.P)

***[1]Nitesh Kumar, [2]Monika Thakur, [3]Surendra Kumar Godara, [4]Rajeev Bhoria and [5]Arun Kumar**

[1]Department of Botany, Govt. Degree College, Sujanpur Tihra, Hamirpur (H.P).
[2]Department of Botany, Govt. Degree College, Sarkaghat, Mandi (H.P).
[3]Assistant Registrar, Mgsu Bikaner (Rajasthan).
[4]Department of Botany, Govt.Degree College Naura, Distt-Kangra (H.P).
[5]Department of Botany CPU Distt-Hamirpur (H.P).

Corresponding Author: Nitesh Kumar
Department of Botany, Govt. Degree College, Sujanpur Tihra, Hamirpur (H.P).

Article Received on 15/06/2020 **Article Revised on 05/07/2020** **Article Accepted on 26/07/2020**

ABSTRACT

Hamirpur district is the smallest district of Himachal Pradesh due to area wise and this district falls under Shivalik hills. This district is full of forests with floristic plant diversity. Due to modernization, there is advancement in technology, means and facilities which are helpful to raise the standard of life of people in this district but still the peoples have good faith in traditional knowledge regarding to ethnobotanical uses of plants for various purposes especially for medicinal purposes. This paper emphasizes traditional knowledge about use of some ethnobotanically important cultivated and wild Climbers and Lianas as plant resources of Bhoranj region of district Hamirpur. This traditional knowledge is degraded day by day. So this is the need of hour to conserve the traditional knowledge about the medicinal aspect and other ethnobotanical purposes of plants resources of study area for the benefit of future generation through documenting that traditional knowledge. This step is also a necessary step for the conservation of those plant species among the flora of study area that are in danger of extinction.

KEYWORDS: Climbers, Conservation, Ethnobotanical, Lianas, Traditional Knowledge, Hamirpur & Himachal Pradesh.

INTRODUCTION

Climbers are the plants with weak stem which are rooted in the ground. These plants need support for their weak stem but Lianas are the Climbers with Woody stem. Climbers are different in their mechanical characters, well adopted to climb on any support like large trees. The suitable modifications for mechanical support i.e. hooks, tendrils and roots which are found in these kind of plants. (Patel 2014). Climbers and creepers are the important components of plant diversity and valuable for their medicinal uses and in the nutrients recycling (Schnitizer & Bonger 2002).The Indian Himalayan region is a mega hot spot of the biological diversity. It comprises about 18% of area of India. The flora includes about 8,000 species of Angiosperm (40% endemic), 44 Species of Gymnosperm (16% endemic), 600 species of Pteridophytes (25%) 1734 species of Bryophytes (30% endemic) 1.139 species of Lichen (11% endemic) and 6,900 species of Fungi (27% endemic) (Chauhan et.al 2014). These include 1748 species of medicinal plant with various traditional and modern therapeutic uses, 675 species of wild edible plants. So, the Indian Himalaya are act as richest hot spot for the plant diversity and medicinal plants which is important component of that phyto-diversity. Hamirpur district of Himachal Pradesh is situated between 76°18' to 76°44' East longitudes and 31°28' to 31°52' north latitudes. The track is hilly which is covered by Shivalik range and the elevation varies from 450-1,100 meters. This district of Himachal Pradesh is act as good hotspot for growth of medicinal herbs and aromatic plants due to favorable environment and changeable climatic conditions. (Rawat.et.al).The Bhoranj region of Hamirpur district is rich in diverse flora which is suitable for ethnobotanical exploration. The wild flora of this area contain a variety of useful plants which have been a valuable source of basic needs of people of this district such as food, fodder, shelter, fiber, fuel and medicine etc. Therefore in the present study an attempt has been made to describe only those Climbers and Lianas of the Bhoranj region which are important from the ethnobotanical point of view. This study will be helpful

in documenting the precious indigenous knowledge of the rural people about the ethno- medicinal plants of this district. As a result of this study, it will also be possible to suggest the means and measures to conserve the most threatened plant species of this region of Hamirpur district which are on the verge of extinction due to overgrazing and other human interferences. The lots of researches has done on the ethnobotanical importance of some plants Himachal Pradesh by some research workers as: Harshberger (1896), Jain S.K (1987), Chauhan (1999), Schnitzer and Bonger (2002), Kala (2005), Rawat et.al (2010), Patel (2014), Kharwal and Rawat (2017) & Sharma etc. All these worker reported about the ethnobotanical importance of plants including Climbers and Lianas.

MATERIAL AND METHODS

Various field surveys were carried out for getting the indigenous knowledge about the traditional uses of some ethnobotanically important Climbers and Lianas as plant resources in the different localities of study area during this research. The first-hand information was recorded on the plants used for various purposes through personal interviews or personal local contact with local and indigenous old aged people of different remote localities study area. The collected plant specimen were preserved in the form of herbarium and identified with the help of Chaudhary, H.J. and Whadwa, B.M. flora of Himachal Pradesh and other relevant literature were consulted one.

RESULTS AND OBSERVATIONS

The present study revealed the use of 32 climbers and Lianas belonging to 14 families of study area for ethnobotanical exploration. For each plants species the following ethnobotanical information are provided: botanical name, local name, family, plant parts used, and their folk uses which are as under: The Table 1

Sr. No.	Scientific Name	Family Name	Local Name	Habitat Status	Plant Part(s)	Folk uses
01.	*Abrus precatorius* Linn.	Fabaceae	Ratti	Lianas	Roots, seed and leaves	Decoction of the roots is used for treating abortion. The paste of leaves with root paste of *Plumbago zeylanica* Linn. is used for the treatment of skin diseases. Half spoon of powdered roots is given with honey one times a daily for five days to cure whooping cough. The fresh seeds taken orally, early in the morning for 45 days to treat nervous disorders. Grinded seed powder mixed with water is taken orally twice a day for 3 days to treat scorpion bite and wasp bite. Seeds are used by Jewellers for weighing jwellery due to their fixed weight.
02.	*Aristolochia indica* L.	Aristolochiaceae	Sunanda	Climber	Leaves, roots, whole plant material	Paste of roots and leaves is useful in case of ulcers and snake bite. Powder of roots and leaves is also beneficial in case of worms. Whole plant material extract is beneficial for blood purification. Powder of leaves is good for heart problems and incase of anemia. Leaf juice is used to reduce blood pressure. Juice of leaves is recommended for toxic bite
03.	*Baugainvillea spectabilis* Wild	Nyctaginaceae	Garden glory, Baghan di Mahak	Lianas	Whole plant and Flowers	Whole plant is used for fencing and is also used for ornamental purpose. Decocotion of flowers are used in case of diabetes, inflammation of liver, Hepatitis,sore throat and I used as good expectorant .Flowers of this plant has religious value and used in worships of deities.
04.	*Bauhinia vahlii* Wright and	Fabaceae	Tor, Tourya	Lianas	Stem, Leaves and wood	2-3 grams of dried powdered leaves are taken with water to check dysentery. Leaves are used for

	Arnott.					making meal plates (pattals) and bowl (duna) which are used in all religious ceremony from birth to death. Leaves are also used as fodder for cattles and wood is used as fuel.
05.	*Celastrus paniculatus* Wild.	Celastraceae	Sankheeru, Malkangni	Lianas	Seed, fruit	Mixture of seed oil and mustard in equal proportion is applied externally on the skin infection. Seed oil is recommended in case of beriberi, leprosy and gout. One tea spoon of the powdered seed is given twice in a day till cure for cough and bronchitis. Fruit powder is roasted in butter and which is recommended to improve vigor after post-delivery stress. 10-12 seeds are chewed or crushed in four cups of boiling water for three hours, then sweetened to taste and taken to enhance mental capabilities and thinking. It acts as a powerful brain tonic to stimulate intellect, memory and intelligence
06.	*Cissampelos pareira* Linn.	Menispermaceae	Patindu, Batindu	Climber	Roots and leaves	Root paste is used as antidote to snake bite and to check Leucorrhoea. 5-10ml decoction of leaves twice in a day is considered good for constipation and fever. Leaves along with wheat dough is given to live stock for dysentery. Root powder is also used against toothache.
07.	*Clematis buchananiana* DC.	Ranunculaceae	Dhumbad bel	Lianas	Fruits, flowers and leaves	A pinch of dried powdered flowers in combination with black pepper and powdered leaves of *Berberis aristata* DC. is taken as a snuff to cure migraine.
08.	*Clematis grata* Wall.	Ranunculaceae	Chotti dhumbad bel	Lianas	Whole plant, shoot and leaves	Decoction of whole plant material is used for jaundice. Shoot paste is useful in ringworm and shoot powder is useful in case of boldness. Fresh leaf paste is applied on boils.Leaves are used as fodder.
09.	*Coccinia grandis* (L.) Voigt	Cucurbit aceae	Lal Kanduri	Climber	Fruit	Fruits are cooked as vegetable and considered good for diabetes.
10.	*Cucumis sativus* L.	Cucurbitaceae	Kheera, Kakadi, Kakri	Climber	Fruit and seeds	Fresh fruit is cut into small pieces is given to the patient thrice in a day of a month for the treatment of jaundice, hepatitis and other liver disorder. Fruits are edible and used as 'salad'. Fruit slice is used in facial cosmetics to remove the dark circle around eye. Fruit juice is prescribed three times in a day for one month to cure kidney stones. The powdered decorticated seed are eaten and extract of seed considered as refreshing drink.

11.	*Cucurbita hispida* Thunb.	Cucurbitaceae	Dhuda Petha	Climber	Fruit	Fruit is used for making cheese known as 'Petha'. Its vegetable considered good for expelling worms. A dish which is known as 'Meetha' prepared by its fruit with sugar is common dish in all religious and other ceremonies of Himachali. Fruit is religious and used in worshipping at the time of performing house warming ceremony. The fruit is also used for dyeing black hairs in to grey.
12.	*Cucurbita pepo* L.	Cucurbitaceae	Kaddu, Sitaphal	Climber	Fruit, and seeds	Fruit is cooked as vegetable. Dried seed powder of plant is used for expelling worms.Its roasted seed is used for sexual weakness in males. Seed powder is also used for the treatment of kidney stone. Fruits is also offered to appease Lord Shiva on the day of Shivratri. Roasted seeds are eaten.
13.	*Cuscuta reflexa* Roxb.	Convolvulaceae	Akasbel, Amarvela	Climber	Aerial plant parts (Stem, Leaves, Seeds and whole plant)	Bath in warm decoction of stem is considered good to relieve swelling and Rheumatic pain. 5-10 ml decoction of the aerial plant parts two times a day for 3 days to check dysentery. One tea spoon full paste of stem with little lime is given once in the morning for 4-5 days to induce abortion at the early stage of pregnancy. Poultices of plant paste are applied to cure red spots which are caused due to blood clotting. Massage of mustard oil with powdered plant materials is prescribed well for internal injuries and Rheumatic pain. Powdered seeds are used as an antifertility drug. Stem paste is used for cleaning sores and to treat itching and swelling.
14.	*Dioscorea bulbifera* Linn.	Dioscoreaceae	Tarad	Climber	Tuber	Tuber is used as a vegetable, also crushed and its powder is used in case of pile. Powdered tuber is also used in case of dysentery.
15.	*Dioscorea deltoidea* Wall. Ex Kunth.	Dioscoreaceae	Singli-mingli	Climber	Rhizome	Rhizome paste is applied externally for rheumatism and joint disorder. The crushed rhizomes are given with kneaded flour and salt in case of general gastric problems.
16.	*Glorisa superba* L.	Liliaceae	Nagaradi, Nagrudi	Climber	Leaves and Root	Root paste is act as an antidote to snake bite. Extract of leaves is used for killing lice in hairs. Root powder is given in case of rheumatic fever.
17.	*Hedera helix auct* (non.L.) Clarke	Araliaceae	Patherlata	Climber	Leaves	Paste of leaves is applied externally in the lower region to promote the flow of urine.
18.	*Ipomoea cairica* Sweet.	Convolvulaceae	Ghoudan bel	Climber	Whole plant	Whole plant is used as fodder when weeded out. Decocotion prepared from whole plant material is used for the treatment of

						constipation,dyesentry and also in case of malaria.
19.	*Ipomoea nil* (Linn.) Roth	Convolvulaceae	Nila Ghaudan	Climber	Whole plant, Leaves and Seeds	Powdered seeds are used as laxative. The extract of the whole plant material which is mixed with hot mustard oil is used to promote the hair growth. Paste of leaves and seeds is used to restores the normal texture of dry skin.
20.	*Lagenaria siceraria* (Molina.) Standl.	Cucurbitaceae	Lauki	Climber	Fruit and Flowers	Juices of fruit is taken twice in a day which is considered good for heart problem. A paste prepared from it's dried flowers with water is applied externally on cuts and wounds. Flowers decocotion is useful in case of cold.
21.	*Melothria hetprophylla* Lour. Cong	Cucurbitaceae	Bankrokadi, Krokadi	Climber	Root, Fruit	Root paste heals the mouth ulcers. Root powder is mixed with turmeric powder to cure gastric disorder and discomfort in stomach. Fruit is prescribed for the treatment of antifertility, labour pain and diabetes.
22.	*Momordica charantia* L.	Cucurbitaceae	Karela	Climber	Fruit	Fruit is cooked as vegetable which is useful in case of diabetes. Fruit juice is also useful for the treatment of diabetes. 50 ml of juice of fruit is taken daily to purify the blood and as anthelminthic. One spoon of powdered fruit is taken with water.
23.	*Mucuna pruriens* (L.) DC.	Fabaceae or Papillionaceae	Dryagul, Gazal–bel	Climber	Seeds and stem	Seeds are taken in halva for vigor after delivery. 20-30 ml decoction of seeds is prescribed three times daily till cure for impotency. Powdered seed with 'Gur' and ghee is taken with milk every morning to provide strength to the body. Stem is used in traditional religious activities.
24.	*Momordica dioica* Roxb. ex. Willd.	Cucurbitaceae	Kakroon.	Climber	Fruit	Fruit juice is prescribed once in a day to control diabetes and stone in kidney.
25.	*Passiflora incarnata L.*	Passifloraceae	Maypop, Passion flower	Climber	Leaves, flower, stem, root	It helps in anxiety and insomnia. Roots and leaves are used as herbal tea. It is also useful for pain, heart rhythm problems, menopausal symptoms.
26.	*Sechium edule* (Jacq.) Swartz.	Cucurbitaceae	Lanku Karela**.**	Climber	Fruit	Fruit is cooked as vegetables and is considered good for gastro-intestinal disorder.
27.	*Smilax aspera* Linn.	Smilacaceae	Bagru-Bel	Lianas	Whole Plant and leaves	2-3 gram of powdered whole plant material is recommended three times in a day for 8-10 days to cure yellow leucorrhoea. Leaves are used as fodder.
28.	*Stephania glabra* Roxb.	Menispermaceae	Biskhpar	Climber	Tuber, Roots and Fruit	Root paste prepared in the mustard oil is applied to the inflamed part. Tuber paste is applied locally for mouth ulcers in both human beings and livestock. Smoke of fruits is used to cure inflamed teats in animals. Fresh roots are mixed with a pinch of

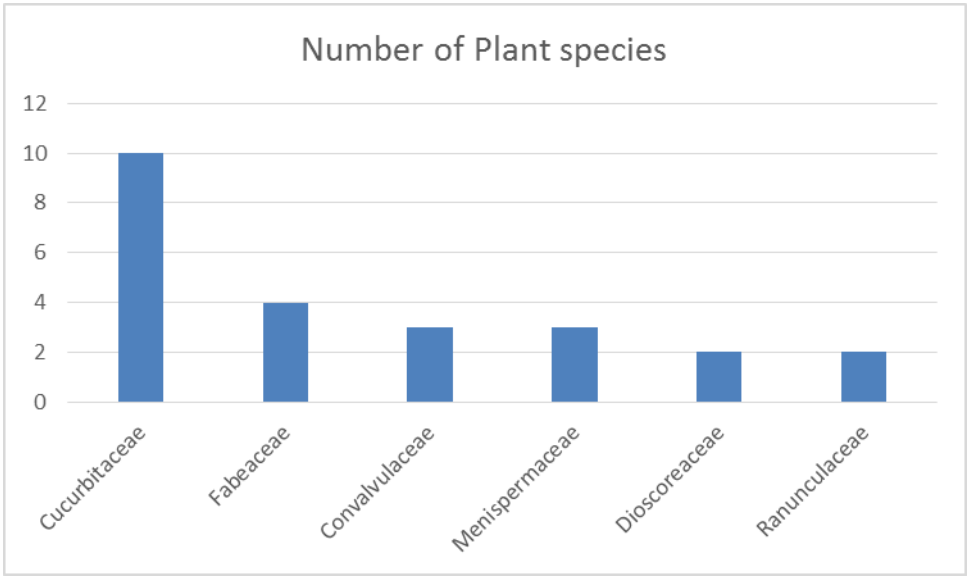
						rock salt which is prescribed to cure flatulence in cattle.
29.	*Tinospora cordifolia* (Thunb.)Miers.	Menispermaceae	Guljaya, Galon, Giloy	Lianas	Stem and Leaves	Dried stem pieces extract is used in case of diabetic problem. 15-20 ml of decoction of the fresh stem is considered good against rheumatic ailments, twice a daily for one month. Stem and leaves mixed with fodder is given to cattle to improve lactation in cattle. Pieces of dried stem used in "Havan" for purification of surrounding. Half tea spoon of powdered stem given twice in a day for 15 days to cure abdominal diseases, congestion of liver and persistent fever. 1-2-gram pulverized stem is taken twice daily for 12-15 days to cure congestion of liver and leucorrhea. Stem starch roasted with butter and wheat flour recommended for menorrhagia.
30.	*Trichosanthes cucumerina* Linn.	Cucurbitaceae	Parod	Climber	Fruit	Fruit is cooked as vegetable. Fruit pulp is used in the treatment of cough. Fruit is used as purgative and vermifuge.
31.	*Vigna Vexillata* (Linn.) A. Rich.	Fabaceae	Baker bel, Gunji root.	Climber	Whole plant and Root.	Decoction of roots along with raw turmeric and roots of 'Bankakadi' is taken twice in a day for 3-5 days in case of stomach pain and to cure ulcer and cholera. Whole plant material is used as fodder for livestock.
32.	*Vitis vinífera* Linn.	Vitaceae	Angoor	Lianas	Fruits and leaves	Unripe fruits are used to treat sore throat. Ripe fruits are used for the treatment of cholera, kidney and liver disorder. Fruits are used to prepare wine which is used to cure skin and eye disorder. Leaves are used to stop bleeding pain in case of hemorrhoids and inflammation. Fruit is edible. Fruits are used in wine,for making jams and jellys etc.

Table 2: Shows the name of dominant families & no. of plant species found in them which are used for ethnobotanical purpose.

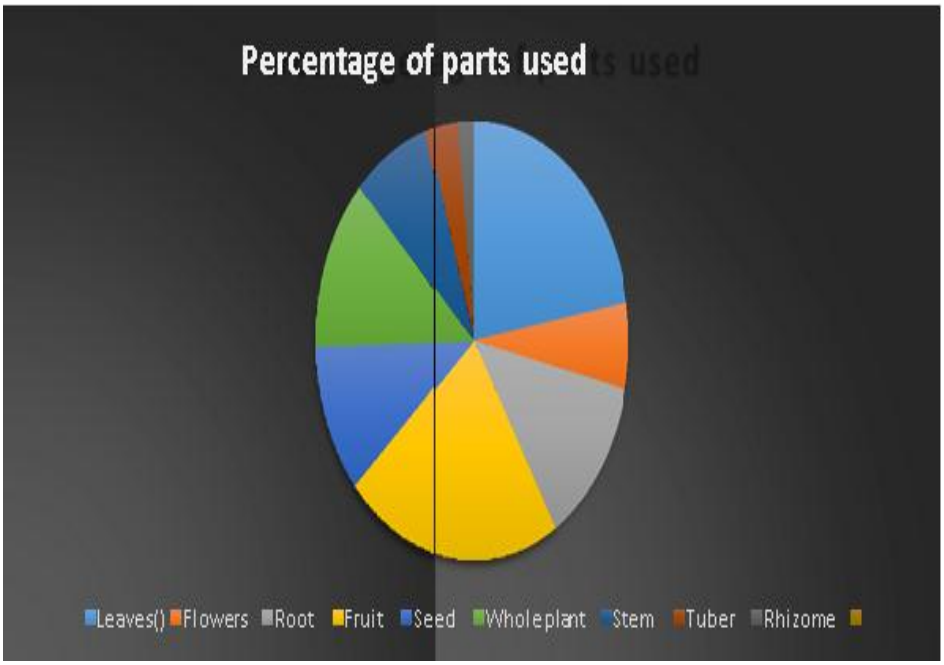
Name of Family	Number of Plant species
Cucurbitaceae	10
Fabeaceae	4
Convalvulaceae	3
Menispermaceae	3
Dioscoreaceae	2
Ranunculaceae	2

Table 3: Shows the name of the different parts of the plant species of study area with their percentage which are used for ethnobotanical purposes.

Name of parts used	Percentage of parts used
Fruit	14%
Flowers	4%
Root	8%
Leave	13%
Seed	7%
Whole plant	8%
Stem	6%
Tuber	2%
Rhizome	1%



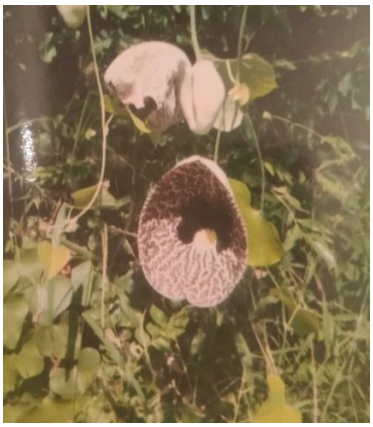
Bar Diagram: Shows the dominant families with the number of plant species in the study area for ethnobotanical exploration.



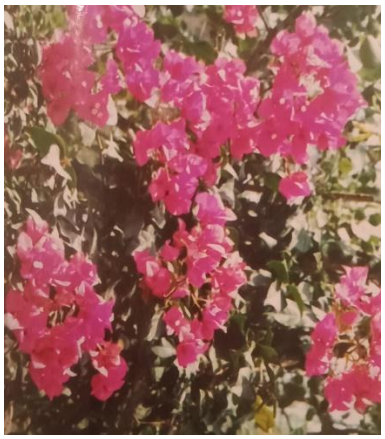
Pie Chart: Shows the percentage of different plant parts used for ethnobotanical purposes in study area.

Photographs of some climbers and lianas

Abrus precatorius **(Fabaceae)**

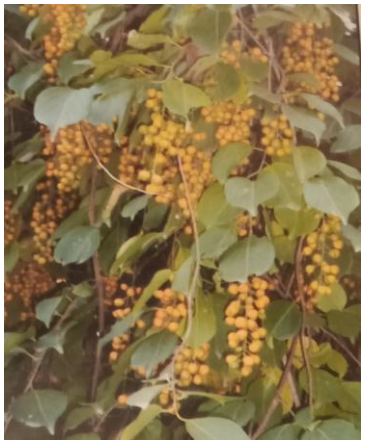


Aristolochia indica **(Aristolochiaceae)**



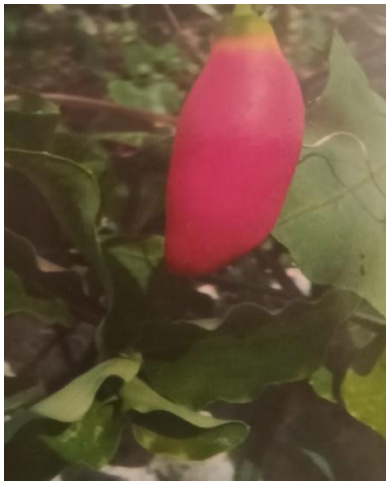
Baugainvillea spectabilis **(Nyctaginaceae)**

Bauhinia vahlii **(Fabaceae)**



Celetaratus paniculatus **(Celastraceae)**

Clematis grata **(Ranunculaceae)**



Coccinia grandis **(Cucurbitaceae)**

Glorisa superba **(Liliaceae)**

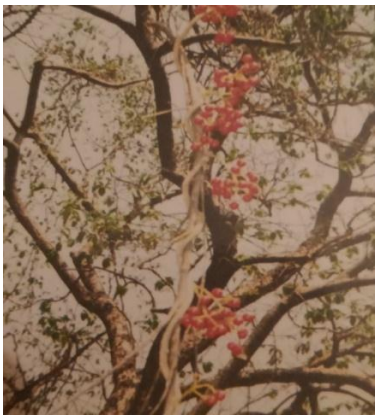
Ipomoea cairica **(Convolvulaceae)**

Ipomoea nil **(Convolvulaceae)**

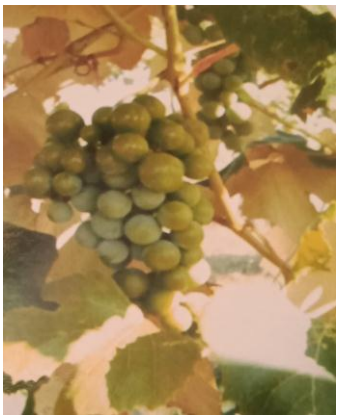
Lagenaria siceraria **(Cucurbitaceae)**

Momordica charantia **(Cucurbitaceae)**

Passiflora incarnata L. (Passifloraceae)



Tinospora cordifolia (Menispermaceae)



Vitis vinífera (Vitaceae)

DISCUSSION

The present study revealed the ethnbotanical uses of 32 Climbers and Lianas belonging to 14 families of study area which are used by rural communities for fulfulling their daily life needs. The dominant families among 14 familes of study area are -Cucurbitaceae with 10 plant species, Fabaceae with 4 plant species, Convolvulaceae and Menispermaceae with 3 plant species in each and Dioscoreaceae and Ranunculaceae with two species each.

The name of the plant parts in different plant species are used out of 32 plant species. Fruits of 14 plant species, leaves of 13 plant species, whole plant materials of 8 plant species, roots of 8 plant species, seeds of 7 plant species, stem of 6 plant species, flowers of 3 plant species and tubers of 2 plants and rhizome of 1 plant species each which are used for ethnobotanical exploration.

CONCLUSION

The traditional knowledge about the utilization of local plants including Climbers and Lianas for various ethnobotanical purposes are degraded day by day.So.it is necessary to conserve and document this traditional knowledge for future benefits. Due to various developmental activities and construction work, there is destruction of habitats of some wild plants including Climbers and Lianas. Therefore it the primary duty of rural communities of study area to conserve and domesticate those plants which are on verge of extinction.

ACKNOWLEDGEMENT

Authors are thankful to the people of study area for their valuable guidance and help during research work.

REFERENCES

1. *Arora, R.K.* Ethno botany and its role in domestication and conservation of native plant genetic resources. In: Jain S.K. (ed.): A Manual of Ethno botany Scientific Publishers, Jodhpur, *1987;* 94-102.
2. *Brij Lal & K.N. Singh* Indigenous herbal remedies used to cure skin disorders by the natives of Lahaul-Spiti in Himachal Pradesh, Indian Journal of Traditional Knowledge, *2008;* 7(2): 237-241.

3. *Chauhan, N.S.* Medicinal and aromatic plants of Himachal Pradesh, (Indus Publishing Company, New Delhi), *1999.*
4. *Chauhan, P. K., Singh, Sunayna. Kour, Janameet. & Singh, Manjeet* Need of Conservation & management of Endangered plant species of North Western Himalyas- A Review, World Journal of Pharmaceutical Research, *2014;* 3(9): 222-226.
5. *Harshberger, J.W.* The purpose of ethno botany. Bot. Gaz., *1896;* 21: 146-158.
6. *Jain, S.K.* The role of a botanist in folklore research. Folklore April, *1964;* 1964.
7. *Jain, S.K.* Ethnobotany its scope and study. Indian Mus. Bull, *1976;* 2: 39-43.
8. *Jain, S.K. Ethnobotany*. Interdisciplinary Science Reviews, *1986;* 11(3): 285-292.
9. *Jain, S.K.* Ethnobotany-its scope and various sub disciplines. In S:K. Jain (ed.) A manual of Ethnobotany. Scientific Publishers, Jodhpur, *1987c.*
10. *Kala, C.P.* Ethnomedicional botany of the Aptani in the Eastern Himalaya Region of India Journal of Ethnobiology and Ethnomedicine, *2005;* 10(11): 1-8.
11. *Kapur, S.K.* Traditionally important medicinal plants of Bhaderwah Hills Jammu, Province - II, 62-69. In Maheshwari, UC. (ed.); Ethnobotany in South Asia. J. Econ, Taxon Bot. Additional series, 12. Scientific Publishers, Jodhpur (India), *1996.*
12. *Kaur, Ismeet, Sharma Shalini & Lal Sukhbir Ethnobotanical* survey of Medicinal plants used for Different diseases in Mandi district, Himachal Pradesh, IJRPC, *2011;* 1(4): 1167-1171.
13. *Kharwal, Anjna D. & Rawat Dhiraj S.* Ethnobotanical notes on indigenous herbal shampoos of Shivalik hills, Himachal Pradesh, (India). Plant Science Feed, *2012;* 2(6): 88-90.
14. *Kharwal, Anjana D. & Rawat, Dhiraj S.* Ethnobotanical important Climbers and Lianas of Shivalik hills, Himachal Pradesh, India. International Journal of Herbal medicine, *2017;* 5(1): 46-49.
15. *Patel, D.K* Diversity of Climbers and Creepers medicinal and aromatic plants with special reference to their regeneration in herbal garden for ex-situ conservation. Int.J.Curr.Res. BioSci, Plant Biolo, *2014;* 1(4): 67-73.
16. *Rawat, Dhiraj S., Kharwal, Anjna D. & Rawat, Suman* Ethnobotanical studies on Dental hygiene in district Hamirpur, Himachal Pradesh (H.P), India, *2010;* 14: 584-92.
17. *Schnitzer, S.A & Bonger, F.* The Ecology of Lianas and their role in Forest. Trends. Ecol. Evol, *2002;* 17: 223-230.