

Ethno-Botanical Study of Medicinal Plants of Ramnagar Jammu and Kashmir, India

Satish Kumar¹, Kewal Kumar², Javeed Iqbal Mir³, Omar Sultan Teeli⁴, Ajaz Nazir⁵

^{1, 2, 3, 4, 5}Government Degree College Ramnagar J&K

Corresponding Author: javeed Iqbal Mir. E-mail: javeedbotany123@gmail.com

Abstract: Ramnagar tehsil of J&K state has a very rich biological diversity due to varied altitude and latitude. The area possesses a diverse flora ranging from sub tropical to alpine meadows on the higher peaks. Present study was carried out to document the ethno medicinal uses of locally found plants. During the survey, a total of 45 plants species belonging to 31 families and 44 genera were documented. Family Lamiaceae was found dominant with 4 taxa followed by family Fabaceae with 3 taxa. Plants were tabulated in the order of botanical name, family, local name, part used and ethno medicinal uses. The plants were distributed into the growth forms, trees, shrubs and herbs. Herbs were found ethno medicinally more dominant followed by trees and shrubs respectively.

Keywords: Ramnagar, Ethno-medicinal, Taxa, Lamiaceae, Fabaceae

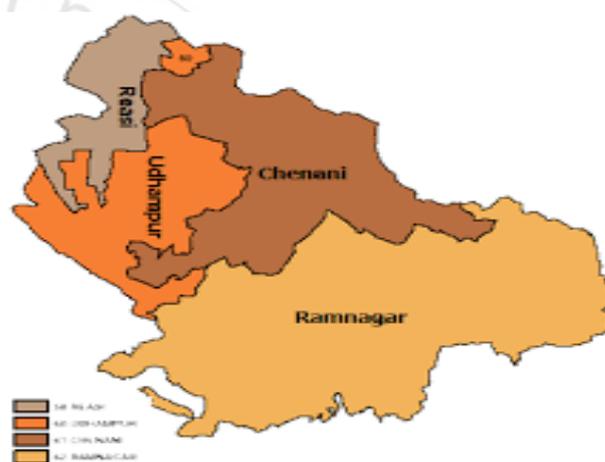
1. Introduction

Ethnobotany is the study of the relationship between plants and people: From "ethno" – study of people and "botany" - study of plants. Ethnobotany is considered a branch of ethnobiology. Ethnobotany studies the complex relationships between plants and cultures. Ethnobotany is an multidisciplinary science defined as the interaction between plants and people. The relationship between plants and human cultures is not limited to the use of plants for food, clothing and shelter but also includes their use for religious ceremonies ornamentation and health care. (Devi *et al.*, 2016). Medicinal plants have been used as medicine for the treatment of various diseases since time immemorial. With the advent of sulpha drugs and modern medicine their use and practice registered a decline but the harmful side effects and toxicity brought medicinal plants again to the fore front of healthcare system. (Hassan *et al.*, 2013). India is commonly called as the 'Botanical Garden' of the world, owing to her wealth of herbal medicines. Being one of mega-diversity country with significantly high number of medicinal plant resources, india occupies a premier position in the use of herbal drugs utilizing 2,500 plant species in different formulations. It has 7800 medicinal drug-manufacturing units which consume about 2000 tonnes of herbs annually (Ramakrishnappa, 2002) and over 500 million people of the country receive the benefits of Traditional Health Care System with nearly 460,000 practitioners of the system (Schippmann *et al.*, 2002).

2. Materials and Methods

Ramnagar is a tehsil in district Udhampur of Jammu and Kashmir. It is located at 32.82° N latitude and 75.32° E longitude. It has an average elevation of 828 meter (2716 feet). Ramnagar is hilly and roughly 90% area of the tehsil is covered by forests. Due to varied topography the flora ranges from sub tropical to alpine meadows on the higher peaks. Field surveys and interviews were carried out to elicit the traditional knowledge from locals inhabiting inaccessible areas of the region. During the field survey, interviews, dialogues and discussions with rural, tribal, herbalists, eldersmen, women and shepherds of Sukhtalab, Thaplal, Nimbala, Jindhrari, Chowki, Satiyan, Dehari, Kaghote,

Marta and Tagan villages were held to document the ethnomedicinal information.



Ramnagar tehsil Map

3. Results and Discussion

The present ethnobotanical survey resulted in the documentation of 45 plant species distributed across 31 families and 44 genera. All the plants documented are angiosperms and were divided into three growth forms viz, trees, shrubs and herbs. Of the plants listed, 4 species (8%) belonged to family lamiaceae and 3 species (6%) belonged to family fabaceae. Families Plantaginaceae, Euphorbiaceae, Myrtaceae, Rutaceae, Malvaceae and Rosaceae represented only two species each, while as rest of the families represented only single species each. In the present study 18 trees, 8 shrubs and 19 herbs were found medicinally important. Table 1 represents the ethnomedicinally important plants.

Ethno-medicinally Ramnagar tehsil is one of the least surveyed parts of jammu and Kashmir state. No thorough survey has so far been carried out with regards to the documentation of ethno-medicinal plants of this tehsil. The present study has documented the traditional medicinal knowledge of 45 medicinal plants first time from the tehsil. During the present investigation it was also observed that some plant species are used to treat more than one disease;

like wise more than one plant species is used to treat a particular disease. *Ganaie et al., 2013.*

Ethno-botanical knowledge is very important as it reflects the practices and problems solved by the indigenous communities by their long experience. It also provides valuable baseline information for the commercial exploitation of bio resources. *Ganaie et al., 2013.* This secret treasure of knowledge could prove beneficial in phyto pharmacological research for the discovery of new threaptic drugs. (Cordell 2000 and Dhar *et al., 2000*). However there is continous erosion in the traditional

knowledge of many valuable plants being used for the ethno-medicines. *Shah et al., 2009, Singh and Tayagi, 2006 and Gupta et al., 2005,* emphasized earlier on the urgent need for the exploration and documentation of the herbal wealth so that the coming generations may come to know about indigenous plant species of the area. Ethnobotanical surveys have also been conducted in different agro ecological regions by *Gupta et al., 2013, Azad and Bhat 2013, Azad and Shah 2012, Jeelani et al., 2013 and shah et al., 2015.*



Figure 1

Figure 2

Figure 1 & 2: Authors during the discussion with the local herbalist Mr. Bhagwan Singh.



Datura stramonium



Mallotus philippensis

Table 1: Ethnomedicinal use of locally found medicinal plants

S.No	Botanical name	Family	Local Name	Part used	Uses
1	<i>Sapindus mukorossi</i> Gaertn	Sapindaceae	Reetha	Fruit	Cleaning of hair, clothes and skin pimples.
2	<i>Albizia chinensis</i>	Fabaceae	Ola	Bark	Infusion of bark is used for treatment of Cuts and Wounds
3	<i>Albizia lebbek</i> L. (Benth)	Fabaceae	Sareen	Root	Root powder acts as stimulant of sexual desire
4	<i>Bombax ceiba</i> L.	Malvaceae	Simbal	Root and Fruit	It is used to cure diarrhoea, dysentery, stomach complaints, diabetes , kidney troubles, and menstrual disorders. It also

					acts as stimulant and tonic.
5	<i>Melia azedrach</i> L.	Meliaceae	Drenk	Bark and leaves	Decoction of bark and leaves is used for the skin troubles like eczema
6	<i>Eucalyptus globules</i> Labill.	Myrtaceae	Safeda	Bark and leaf	Extract of leaves is used as anti diabetic and diuretic. Eucalyptus oil is also used as ointment
7	<i>Eriobotrya japonica</i> Thunb.	Rosaceae	Lokat	Fruit and leaf	Used to treat increased sugar level in blood
8	<i>Ficus palmata</i> Forssk.	Moraceae	Fakoda	Fruits	Fruits are laxative and demulcent. They are used in disease of lungs, baldder and in constipation.
9	<i>Embllica officinale</i> L.	Phyllanthaceae	Amla	Whole plant mostly fruits	Anti diabetic, dysentery and jaundice
10	<i>Citrus medica</i> L.	Rutaceae	Gargal	Fruits, roots and flower	Treatment of abdominal, digestive disorders. It is also used to cure tonsillitis.
11	<i>Alistonia scholaris</i> L.	Apocynaceae	Satpara	Bark	Malaria, typhoid fever, asthma, bronchitis, chest pain, cholera, fever , malaria, pneumonia, and headache
12	<i>Grevia optiva</i>	Tiliaceae	Taman	Fruit	Used against stomach troubles and skin allergies
13	<i>Mallotus philippensis</i> Lam.	Euphorbiaceae	Kembal	Fruit	Used against worms and bacterial infections
14	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Ber	Bark , leaves and fruit	Leaves are used to cure gout, rheumatic inflammation, arithritis. Decoction of bark is used to treat bloating. Sweet fruit is used to cure gastritis.
15	<i>Cassia fistula</i> L.	Fabaceae	Karngal/ amaltass	Leaves roots and seeds	It is used in digestive purposes and as laxative. Fruit is used to cure constipation. Root extract reduces fever, bronchitis and rheumatism
16	<i>Vitex negundo</i> L.	Lamiaceae	Banha	Root, leaf and flower	Used as diuretic. It is also used in rheumatism, dyspepsia, diharrea, fever and liver complaints. It is also used in swelling and in pregnant women complications.
17	<i>Syzigium cumini</i> L.	Myrtaceae	Jamun	Seed fruit	Anti diabetic and is also used for digestive disorders and dysentery
18	<i>Cordia dichotoma</i> G. Forst	Boraginaceae	lasoora	Whole plant	It is used in the treatment headache, fever, ringworm and digestive disorder like dyspepsia. It is also used to cure diabetes, ulceration. It also cures urinary passage infection.

Shrubs

19	<i>Calotropis procera</i>	Asclpediaceae	Aak	Latex and leaves	Used as antidote. powder of leaves is used cure appendicitis
20	<i>Cannabis sativa</i> L.	Cannabinaceae	Bhang	Whole plant	Used as condiment in dishes and pain reliever.
21	<i>Datura stramonium</i> L.	Solanaceae	Datura	Seeds and leaves	seeds and leaves are used as anti asthamic and anti spasmodic. The paste of leaves is used as pain relievers.
22	<i>Adhatoda vasica</i>	Acanthaceae	Barakand	Whole plant	Decoction of leaves is used in the treatment of cough, asthma, bronchitis and other respiratory disorders. Roots are used to cure acidity and gas problems. Stem is used to cure teeth
23	<i>Lantana canara</i> L.	Verbenaceae	Panjphuli	Leaf	Leaf extract is used against skin itches, respiratory infections and headache
24	<i>Xanthoxylum alatum</i>	Rutaceae	Timbru	Whole plant	Tooth ache, stomach ache and is used in antihelminthic. Oil is extracted from seeds, bark extract is used as carminative tonic
25	<i>Rosa brunonii</i>	Rosaceae	Karrer	Whole plant	It is used to cure constipation, body inflammation, heart and eye diseases and is used as anti septic
26	<i>Punica granatum</i> L.	Punicaceae	Darooni	Fruit and seeds	The juice of its fruits is used to cure heart strokes. It used to cure anemia and weakness in pregnant ladies. It is also used to cure skin inflammation.

Herbs

27	<i>Valeriana jatamansi</i>	Valerianaceae		Root	It is used in treatment of eye, blood and liver diseases, Sedative and antiseptic
28	<i>Malva neglecta</i> Wallr.	Malvaceae	Suchal	Whole plant	Used for treatment of constipation and also acts as inflammatory
29	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulsi		Used in treatment of mouth and respiratory tract infections. Also used against indigestion, heart diseases and stress
30	<i>Taraxacum officinale</i> L.	Asteraceae	Bathur	Whole plant	Roots are diuretic and leaves are used for dislocation of joints, stomach ulcers and diarrreoha. Flowers are used to made sugar free tea that helps to control diabetes.
31	<i>Oxalis corniculata</i> L.	Oxalidaceae		Whole plant	It is used to cure malaria, hepatitis B and abdominal pain. Anti helminthic
32	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Dudhi	Whole plant	Decoction of whole plant is used for cough, dysentery, jaundice, asthma and digestive problems
33	<i>Ajuga bracteosa</i> Benth.	Lamiaceae	Joraon	Leaves and	The juice of root is used in the treatment of diarrhea and dysentery.

				roots	The leaves are used in the treatment of fever
34	<i>Argemone Mexicana</i> L.	Papaveraceae	kandiyar	Seeds	Powder of seeds is used for skin problems. Along with pudina it is used to cure fever and typhoid
35	<i>Chenopodium album</i> L.	Chenopodiaceae		Leaf	It acts as Antihelminthic, antireumatic and laxative
36	<i>Mentha longifolia</i> L. Huds	Lamiaceae	Jungli pudina	Whole plant	Antiseptic, carminative and used in digestion problems
37	<i>Plantago lanceolata</i> L.	Plantaginaceae	Bumgha	Whole plant	Juice is prepared to cure respiratory tract infections
38	<i>Saussurea heteromalla</i>	Asteraceae	Batola	Whole plant	Its oil is used for relieving pain. It is also used for toothache and arthrititis. Extract of root is also used for anti inflammatory purposes
39	<i>Trachyspermum ammi</i> Sprague	Apiaceae	Ajwain	Whole plant	Extract is used to cure cough, asthma, bronchitis, cold, fever and body pains
40	<i>Gentian kurroo</i> L.	Gentianaceae	Neelkanth	Root	Root used for digestive disorders, lack of appetite, liver complaints and indigestion.
41	<i>Laportea interrupta</i> L.	Urticaceae	Chew	Leaf	It acts as anti inflammatory, tonic, stimulant and blood purifier. Having anti microbial properties. It is used to enhance sexual desire.
42	<i>Tinospora cardifolia</i> (Thunb.) miers	Menispermaceae	Glow	Whole plant	Extract of plant juice is used to cure liver and heart diseases. It also controls blood pressure. Also relieves gout, rheumatism, fever and acts as anti diabetic.
43	<i>Acorus calamus</i> L.	Acoraceae	Bacch	Whole plant	It acts as sedative, laxative, diuretic and carminative. Roots while chewing give hallucination.
44	<i>Viola odorata</i> Thunb.	Violaceae	Banafsha	Whole plant	Whole herb is boiled in water and is used to cure cough, cold, hoarseness of voice, and sore throat .
45	<i>Centella asiatica</i> L.	Plantaginaceae	Brahmi	Stem and leaves	Stem powder is used to treat asthma, bronchitis, chronic ulcers, anemia and gastroenteritis. Leaf extract is used to cure jaundice.

4. Conclusion

The main purpose of the study was to document the ethno medicinal diversity of Ramnagar tehsil. During study it was found that local community is completely dependent on the traditional use of these medicinal plants due to far flungness of this tehsil which leads to over exploitation of these plant species without conservation. The over exploitation of these medicinal plants should be checked. Most importantly the native communities need to sensitize the sustainable use and conservation of these species.

5. Acknowledgement

The authors are highly thankful to prof. Tara Nath, principal GDC Ramnagar for his cordial support and necessary information. The authors are highly thankful to the people of the study area especially Mr Bagwhan singh, local herbalist who share their valuable information regarding the plants which are used by them in day to day life. Last but not least Mr Rajesh Kumar is acknowledged for his support throughout this study.

References

- [1] Azad, S.A. and Shah, A. (2012). Some ethnomedicinal plants of district Rajouri (Jammu province). *Indian J.L.Sci.* 1(2): 47-49.
- [2] Azad, S.A. and Bhat, A.R. (2013). Ethnomedicinal plants recorded from Rajouri-Poonch districts of J&K state. *Indian J.L.Sci.* 2(2): 77-79.
- [3] Cordell, G.A. (2000). Biodiversity and drug discovery; A symbiotic relationship. *Phytochemistry.* 463.
- [4] Devi, S., Kumar, O. and Kumar, M. (2016). Ethnobotanical values of antidiabetic plants of M.P region India. *Journal of Medicinal Plant Studies.* 4(3): 26-28.
- [5] Dhar, U., Rawal, R.S. and Upreti, J. (2000). Setting priorities for conservation of medicinal plants: A case study in the Indian Himalaya. *Biol. Conserv.* 57.
- [6] Ganie, A.H., Tali, B.A. and Rather, A.M. (2013). An ethnobotanical study in Budgam district of Kashmir valley: An attempt to explore and document traditional knowledge of the area. *International Research Journal of pharmacy.* 4(1): 201-204.
- [7] Gupta, A., Sahoo, T.R. and Tiwari, E. (2005). Ethnobotanical importance of some common aquatic and marshy plants of sagar district. *J.Bot. soc. Uni. Sagar.* 65-73.
- [8] Jeelani, S.M., Wani, M.P., Kumari, S., Gupta, R.C. and Siddique, M.A.A. (2013). Ethnobotany of some polypetalous plants from Kashmir Himalaya. *Journal of Medicinal Plants research.* 7(36): 2714-2721.
- [9] Ramakrishnappa, K. (2002). Impact of cultivation and gathering of medicinal plants on Biodiversity: case studies from India. *Forestry and Fisheries, FAO. Rome*
- [10] Shah, N.H., Mahmud, S. and Shamim, A.A. (2009). Plants used against rheumatism by the Gujjar, Bakerwal & pahari tribes of District Poonch (J&K). *Plant Sciences.* (11): 587-588.
- [11] Shah, A., Karim, A., Ahmad, J. and Sharma, M.P. (2015). Medicinal shrubs used by Gujjar and Bakerwal tribes against various non communicable diseases in Rajouri district J&K India. *Indian Journal of Traditional Knowledge.* 14(3): 466-474.
- [12] Singh, L. and Tyagi, E. (2006). Plants used as tooth brushes by ethnic people of East-Sikkim. *Plant sciences.* (2): 561-562 .
- [13] Schippmann, U., Leaman, D.J. and Cunningham, A.B. (2002). Impact of cultivation and gathering of medicinal plants on Biodiversity: Global trends and issues. In: (FAO). Biodiversity and Ecosystem Approach in Agriculture, Forestry and Fisheries. Satellite Event on the Occasion of the Ninth Regular Session of the Commission on Genetic Resources for food and Agriculture. Rome.