

Distribution, Diversity, Indigenous Use and its Utilization of the Ethno medicinal Flora of Rajouri District, J &K, India

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ABSTRACT- The diversity, floristic composition of medicinal plants in the two blocks of Rajouri was studied. A total of 25 plant species belongs to 23 families were recorded Rutaceae, Euphorbiaceae, Rosaceae, Amerenthaceae, Polygoneaceae, Fabaceae, Apocynaceae the all were diverse families. The present studied, documented to ethanobotanical information on 25 plant species belong to 23 families were collected and identified by their vernacular and scientific name. In which, 10 species were herb, 9 sharb, and 9 tree out of 25 species flower of 5 plant species, roots of 4 plant species, Leaf of 9 plant species, Fruits of 5 plant species, seed of 3 plant species, stem and bark of 3 plant species, tuber and an aerial portion of 2 plant species respectively. The gujjar and bukkerwal tribes used all 25 species of plants to treat various diseases.

Key-words- Ethnomedicinal plants, Rajouri, Traditional knowledge Gujjar-Bakerwaltribes

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INTRODUCTION

Ethno-botany is a biological, economic and cultural inter-relationship study between people and plants of an area in which they exist. Ethnobotanical studies focused on contributing to plant biodiversity knowledge (taking into account that the biological diversity as well as human awareness about the uses, applications, and natural resource conservation) on one hand and take this knowledge for further social and scientific interventions on the other hand ethno-botanical research also helps in establishment of priorities of local community to ensure that the local values are translated into rational use of resources and effective conservation of biological diversity and cultural knowledge. Indigenous knowledge of plants is as old as human civilization but the term ethno-botany was used for the first time by an American botanist John. W. Harsh

Bergerin 1896, to study plants used by primitive and indigenous communities. To discover the secret uses of plants, ethno-botany has become an important part of our world. Ethno-botany includes all kind of relationships between people and plants. The definition of ethno-botany can be sum up in four words i.e. People, Plants, Interactions, and Uses ^[1].

Today according to the world Health organization (WHO), as many as 80% of the world's people depend on traditional medicine for their primary healthcare needs. There are considerable economic benefits in the development of indigenous medicines and in the use of medicinal plants for the treatment of various diseases. Due to less communication means, poverty, ignorance and unavailability of modern health facilities, most people especially rural people are still forced to practice traditional medicines for their common day ailments. Most of these people form the poorest link in the trade of medicinal plants. A vast knowledge of how to use the plants against different illnesses may be expected to have accumulated in areas where the use of plants is still of great importance ^[2].

Our country is commonly called as the 'Botanical Garden' of the world, owing to her wealth of herbal medicines. Medicinal plants constitute a precious resource for mankind. Since times immemorial, plants have been put to medicinal use by the traditional herbalists/Hakims,

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Vaidyas, Ayurvedic practitioners and the common man. The health care obtained by utilizing the plants, plant parts or plant compounds has always been held in high esteem by the Indian folk. But over the past few decades with the onslaught of industrialization, urbanization and due to dwindling medicinal resources, herbal health care has suffered a setback [3].

The state of Jammu and Kashmir, cradled in the lap of Himalayas, has been recognized as heaven on earth and is also called "Biomass" state of India. It is located in the far north of the Indian Republic and has a diverse variety of plant species especially those having medicinal properties due to wide variations in its topography and microclimatic conditions. Many studies have been carried out from time to time to document the traditional knowledge information of the medicinal plants from different areas of the state. Therefore, an attempt has been made in the present study with a view to document the medicinal plants that are used traditionally for the treatment of various diseases by the people living in the far flung and remote areas of this floristically rich district of Jammu & Kashmir state [4].

The Gujjar and bakkarwal tribes are concerned; they rely on their own indigenous (herbal system) practices for the cattle and their own health care using the ambient vegetational resources. It has been observed that the men of Gujjar community have richer knowledge about herbs used in ethno-medicinal practices as compared to women folk. The rich plant diversity of the area is managed and utilized by Gujjar tribes in a variety of ways, like rearing of livestock, ethno-medicinal purposes of the plants parts i.e. roots, tubers, young shoots, twigs, leaves, flowers, fruits, seeds etc., are primary food or secondary condiments to dishes prepared by these tribes. Perusal of literature indicated that the ethno-medicinal system of Gujjar tribes particularly from district Rajouri has not been properly investigated by earlier plant explorers [5].

MATERIALS AND METHODS

During the investigation, frequent field trips and plant collections were made from various far flung and remote regions of the study area from first week of March 2016 to mid of July 2016 with the help of tribal peoples of Rajouri, India.

Rajouri district is bounded by Poonch district in the north side, Jammu district in the south side, Udhampur district on the east side and Pak occupied Kashmir (Mirpur area) in the west side Rajouri district with an area of 2,630 Sq. Kms. It is located on the Southerly foothills of Pir Panjal Himalaya in the State (J&K) with an altitudinal range from 450–4500 m above mean sea level (msl). Being situated in the border areas in the Jammu region and having a topography of difficult and hilly terrain, the district is economically poor and industrially backward.

Most of the people from this region are farmer and are inhabitants near the Peer Panjal range, which lies in the north and north-west. In the present work, ethno medicinal information on many plant species belonging to many

families was documented and collected from the areas of Rajouri, Nowshera Block as they comprised of numerous hills and valleys and rich in Medicinal wealth [6].

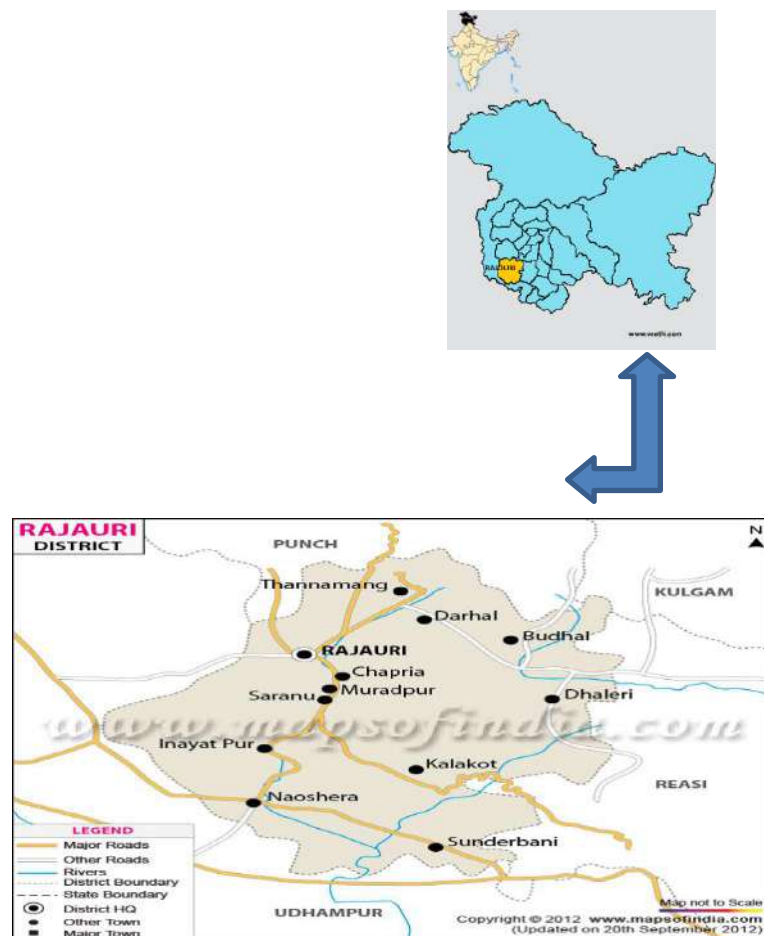


Fig. 1: Study site of Rajouri District J & K

The study was carried out in the 2 Block (Nowshera, Rajouri) covering almost all the areas of District Rajouri, Jammu province (J&K) India. The present report was based on the continuous field surveys made during different seasons from various localities. Several plant species collected from various study plots by number of scholars interested on various aspects of plant systematic unusual methods of collection, preservation and maintenance of specimens in the herbarium were followed. Field notes on local names, habit, habitat, color of flower general availability, local medicinal uses, etc were regularly recorded in the plant collection.

The area was exhaustively surveyed for the study. Usual methods of collection, preservation and maintenance of specimen in herbarium were followed [7]. Attempts were made to collect all the possible medicinal trees of the region, along with some cultivated and weed plants also included with in the work. The specimen were identified with the help of recent and relevant flora and confirmed after matching with the authentic specimens present from the herbarium Botanical survey of India, Northern circle (BSI) and Forest research institute (FRI) both in Dehradun.

RESULTS

Each medicinal plant was provided with its scientific name name, family, morphology, distribution status and plant part and author citation; followed by local name, common used.

Table 1: Sequences of some selected plant species, collected and identified in the present investigation is given below

Botanical names	Local name	Family	Part used	Ailment/Disease	Method of use
<i>Achyranthes aspera</i>	Puthkanda	Amaranthaceae	Leaf, Root and Seed	Cough, Diarrhoea, Snake bite, Excessive Menstrual Bleeding, Stomach Disorders, Asthma, Specific for Spleen enlargement and Cholera	*The roasted seed powder mixed with honey is given during cough. *Root powder is used for snake bite.
<i>Adhatoda vasica</i>	Baranker	Acanthaceae	Whole plant	Asthma, Cough, Bronchitis, Nervous Disability, Diarrhoea and Dysentery	*Flower ash with honey is given to cure of asthma and cough. *The smoke from burning leaves inhaled for the cure of asthma and cough.
<i>Asparagus racemuscus</i>	Sanspai	Asparagaceae	Roots	Liver Ailments, Weakness, Gastric Problems, Ulcer, Nervous Disorders and Improve Breast Milk	*Juice of chopped roots is given to get relieve from liver problem , weakness and improve breast milk
<i>Bauhinia variegata</i>	Kachnar	Caesalpinia-ceae	Stem bark, Rootbark, Flower and Buds	Cough and Blood purify	*Flower buds are taken with honey to cure cough. *Bark is tonic and blood purifier.
<i>Bergenia ciliate</i>	Zakhme-e-hayat	Saxifragaceae	Root and Leaves	Skin Problems, Wounds and Menstrual cycle	*Paste from leaves or whole plant provide relief from wound and Wrinkles. *Powder of the root with water is given to women to control menstrual cycle.
<i>Butea monosperma</i>	Palas (Flame of the Forests)	Fabaceae	Flower, Gum, Seeds and Root	Intestinal Worms, Diarrhoea , Blood Pressure, Melting kidney stone, Anaemia in kids	*Seeds are useful against worms. *The root has been found to have some action on blood pressure. *Flower soup used in melting kidney stone.
<i>Calotropis procera</i>	Daryaiaak	Asclepiadaceae	Leaves, Flowers and Roots	Cough, Asthma, Appetite, Wounds and Cholera	*The smoke from burning leaves is inhaled for the cure of cough and asthma
<i>Carissa spiranum</i>	Garando	Apocynaceae	Fruits	Constipation	*Eaten to get relief from severe constipation.

<i>Centella asiatica</i>	Brahmibooti	Apiaceae	Leaves	Rheumatism and Mental Weakness	*The leaves powder is given with milk in small doses in mental weakness and to improve memory.
<i>Dioscorea belophylla</i>	Tarad	Dioscoraceae	Tuber and Aerial Portion	Dysentery and Heart Troubles	*Tubers are edible and are taken to cure dysentery.
<i>Fragaria vesca</i>	Aakhre	Rosaceae	Leaves	To protect Abortion	*Two palm full leaves given daily to protect abortion.
<i>Galium aparine</i>	Kanchari	Rubiaceae	Whole Plant	Skin Diseases	*Paste of whole plant is applied on the skin for removing of redness and allergies.
<i>Malva sylvestris</i>	Sochal	Malvaceae	Aerial portion	Weak Eyesight	*The plant is cooked like other vegetables and is good for the patients having weak eye sight.
<i>Nasturtium officinale</i>	Chho	Brassicaceae	Leaves	Cold, Cough and Blood purifier	*Leaves are edible and used as vegetables to cure cold and cough and also purify blood.
<i>Oxalis corniculata</i>	Khatiemli	Oxalidaceae	Whole Plant	Eye vision and Headache	*Extract of the plant in the form of drops is given for the improvement of eye vision, its paste applied on headache, migraine and giddiness.
<i>Plantago lanceolata</i>	Isabgol	Plantaginaceae	Seed	Stomach Disorders, Chronic Dysentery and Urinary disorders	*Seeds dip in water for 15 minutes and then taken along with water to cure stomach disorders and chronic dysentery.
<i>Rhododendron anthopogan</i>	Nichni	Ericaceae	Flower, Leaves, young shoot	Headache and Blood purify	*Powder of dried ground leaves is inhaled through nasal chamber once in day for 2 days or till it cures.
<i>Rubus ellipticus</i>	Ghurcho	Rosaceae	Fruits and Roots	Antioxidant and Constipation	*5-10 raw fruits are eaten as they have cooling effect.
<i>Rumex hastatus</i>	Khattimal	Polygoniaceae	Whole plant	Skin Disease and Fever	*One palmfull whole plant decoction in ¾ litres water given one cup thrice a day.

<i>Salix disperma</i>	Kankori	Salicaceae	Bark and Fruit	Eyes and Heart problem	*Bark juice is used for eye sight in drop form. *Fruits are used on heart problem.
<i>Skimmia laureola</i>	Patlo	Rutaceae	Leaf	Colic pain and small pox	*Dried ground leaf powder is given orally with water for 1-2 days.
<i>Verbascum thapsus</i>	GiddarTambaku	Scrophulariaceae	Leaves	Bronchitis, Asthma and Sore throat	*One palmfull leaves decoction in 3/4litre given its one cup thrice a day.
<i>Vitex negundo</i>	Banna	Verbenaceae	Flowers and Leaves	Worm, Diarrhoea, Cold and Cough	*The extract of leaves is used to expel out worms in children. *Fresh flower extract cure diarrhoea. *Leaves are chewed in cough and associated cold.
<i>Withania somnifera</i>	Ashwagandha	Solanaceae	Whole Plant	Sexual Disorders (impotence), Ulcer, Tumor and Burns	*Roots powder taken with water to cure sexual weakness and form an important ingredient of 31 energy capsules.
<i>Zanthoxylum armatum</i>	Timru	Rutaceae	Fruits	Cold, Fever, Body pain Skin Diseases and Tooth ache	*Tea is made from the fruits and given twice a day for 2-3 days.

The medicinal plants are used by Gujjar tribe of the study area were arranged in alphabetically family wise, with their botanical names, available vernacular names, part used and its implications is shown in Table 1 and some plates of medicinal plants and living style of Gujjar tribes shown in Table 1 list of plants. It is evident from the Table 1 that ethno-medicinal plants to be one of the remedial measures for the Gujjar, Bakarwals and Paharies of this area. Ethno-medicinal plants, which have been used by local inhabitants for various ailments.

During this period 25 ethno-medicinal plants belonging to 36 families have been reported from the study sites. Out of 25 plants 10 were herbs, 9 were shrubs and 9 were trees. Out of 25 species, angiosperms comprised the highest number being represented by 25 species followed by species. Dicotyledons were represented by 23 and monocotyledons were represented by only 2 species among all, herbs are more used as ethnomedicines as compared to shrubs and trees. Twenty five plant species belongs to twenty five genera and twenty three families were reported from the study area. Rosaceae with 2 plant species and Rutaceae with 2 plant species were the most common used families followed Fabaceae. All there 23 families, Amaran-

thaceae, Acanthaceae, Asparagaceae, Caesalpinaceae, Asclepiadaceae, Apiaceae, Dioscoreaceae, Malvaceae, Lamiaceae, Brassicaceae, Oxalidaceae, Plantaginaceae, Ericaceae, Polygoniaceae, Salicaceae, Violaceae, Solonaceae, Scrophulriaceae and Verbenaceae represents a single species each.

Flowers of five plant species, roots of four plant species, leaves of nine plant species, Fruits of five plant species, seeds of three plant species, stem and bark of three plant and tuber and areal portion of two species rest were used whole plant and a plant twig respectively.

DISCUSSION

The present study conducted in the Rajouri district and adjacent rural area. It was observed through interviews that people in and around this adjacent region use native plants for acquiring their basic household requirements such as medicine. Many medicinal plant species which have been cultivated under “*ex-situ* conservation drive” growing well under natural habitats at higher altitude and in the low land as well; these medicinally important species are *Fragaria vesca*, *Plantago lanceolata*, *Bergenia ciliata*, *Carissa spiranum*, *Centella asiatica*, *Rhododendron anthopogon*,

Rumex hastatus, *Salix disperma*, *Skimmia laureola*, *Verbascum thapsus*, *Viola betonicifolia*, *Vitex negundo*, *Galium aparine*. Ethnobotanical use categories revealed that a major proportion of plant species (25/50) were used for medicines such as *Asparagus racemuscus*, *Nasturtium officinale* etc.

The findings agree with [6,8-13]. Our findings were similar to [5,9,14,15]. In the present results of plant surveys and collections made from Rajouri districts during the last two to three month 2016 were consolidated, with a view to facilitate documentation of their overall medicinal floristic diversity. The inventory provided here records a total of 25 species of Angiospermic plants, which belong to 25 genera in 23 families. Ethno-botanical notes were also appended with some taxas to document their traditional uses.

Also, this paper contributes to the database of traditional indigenous knowledge of plants of the country, which have not been documented earlier from the study area. The findings suggest further investigation into chemical profiles, processing methods, cultivation techniques, conservation studies and pharmacological properties of the reported plant species.



Fig. 3: *Carissa spinarum*



Fig. 4: *Plantago lanceolata*



Fig. 2: *Calotropis procera*



Fig. 5: *Centella asiatica*



Fig. 6: *Bergenia ciliata*



Fig. 7: *Verbascum Thapsus*



Fig. 8: *Fragaria vesca*



Fig. 9: *Galium aparine*

Fig. 2–9: Some selected Medicinal plants of Rajouri, Jammu and Kashmir, India

CONCLUSIONS

This project survey reported that the indigenous medicines are still common practice among the local communities and precise knowledge of the medicinal plants and their medicinal possessions were held by only a few persons in the local communities. Hence a need for thorough exploration of ethno-medicinal knowledge held by each local community is needed before such valued knowledge disappears. Thus, our work would be valuable in averting the loss of ethno medicinal traditions of Rajouri district, Jammu province, J&K, India. In the district Rajouri (J&K) the Gujjar, Bukkerwal and Pahari tribe is totally depends on forests and forest products for their own indigenous herbal practices and cattle health care. It has been observed that male community of the Gujjar tribes has richer knowledge about herbal medicine as compared to women folk so that ethno medicinal plants have to be given prime importance for future investigations.

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