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Ethnoveterinary studies in tribals of Kupwara, J & K, India

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Abstract

An ethno veterinary study was carried out in the tribal's of Kupwara (Budnamel, Keran, Karnah, and Jungand) during 2013-2014. The study was aimed to document the traditional folk knowledge of local people about the use of the medicinal plants as ethno veterinary. Field survey was conducted during the different seasons of the year to collect data about the knowledge and practice of using wild plant species by local people as ethno veterinary. The data collected reveals that about 22 plant species belonging to 18 families and 23 genera are used as ethno veterinary. Plant parts are used to increase milk content and cure different diseases like liver infection, gaseous bloat, general weakness, diarrhea, cough, cold, and fever.

Keywords: Ethno veterinary, folk knowledge, Kupwara, medicines, tribal's.

1. Introduction

Since the beginning of civilization man remained constantly dependent on the native plants for certain primary needs and specific ailments cure and care. His interactions with the wild plants increased which has made him a super power on the earth planet. Documentation of his relationship and interactions with the plants in a scientific way has become a prime need of time these days which is called as ethno botany^[1].

Ethno veterinary medicines is as system that is based on folk beliefs, traditional knowledge, skills, methods, and practices used for curing diseases and maintaining health of animals^[2]. Ethno veterinary medicine provides the major source for the treatment of diseases in livestock throughout the world even today. Humans have used herbal remedies for curing different diseases in their domesticated animals since the advent of civilization. It is estimated that medicinal plants, for several centuries, have been widely used as a primary source of prevention and control of livestock diseases.^[3] Traditional veterinary medicine knowledge like all other traditional knowledge systems is handed down orally from generation to generation and it may disappear because of rapid socioeconomic, environmental and technological changes and as a result of the loss of cultural heritage under the guise of civilization. Only solution is that it must be documented and conserved through systematic studies before it is lost forever. In fact, interest of such use in the veterinary sector has resulted primarily from the increasing cost of livestock maintenance and the introduction of new technology in the production of veterinary medicines and vaccines.

Although much has been documented on the ethnobotanical and ethno-floristic aspects of plants in the district^[4-12]. There is not even a single concrete report about ethno-veterinary uses of endemic plants in tribal's of Kupwara. Keeping this in view, the present work was conducted as the first attempt to explore the plants of ethno-veterinary interests and to record the traditional ethno-veterinary knowledge hidden in this pocket.

2. Material and Methods

Study Area

The Kashmir division has 10 districts, among 10 districts Kupwara is one of the backward and border district .it lies in the north of the Kashmir and located between 34°45 and 75°20 east longitude (**fig.1**). The district has a total geographical area of 2,379sq Km comprising of 368 villages. As per 2011 censes, 870,354 persons with population density of 366 persons per sq Km .the schedule caste and schedule tribe population of the area comprises of 7.97%. The present study was carried in Budnamel, Keran, Karnah, and Jungand. The languages spoken here are Kashmiri, Pahari, and Gojree.

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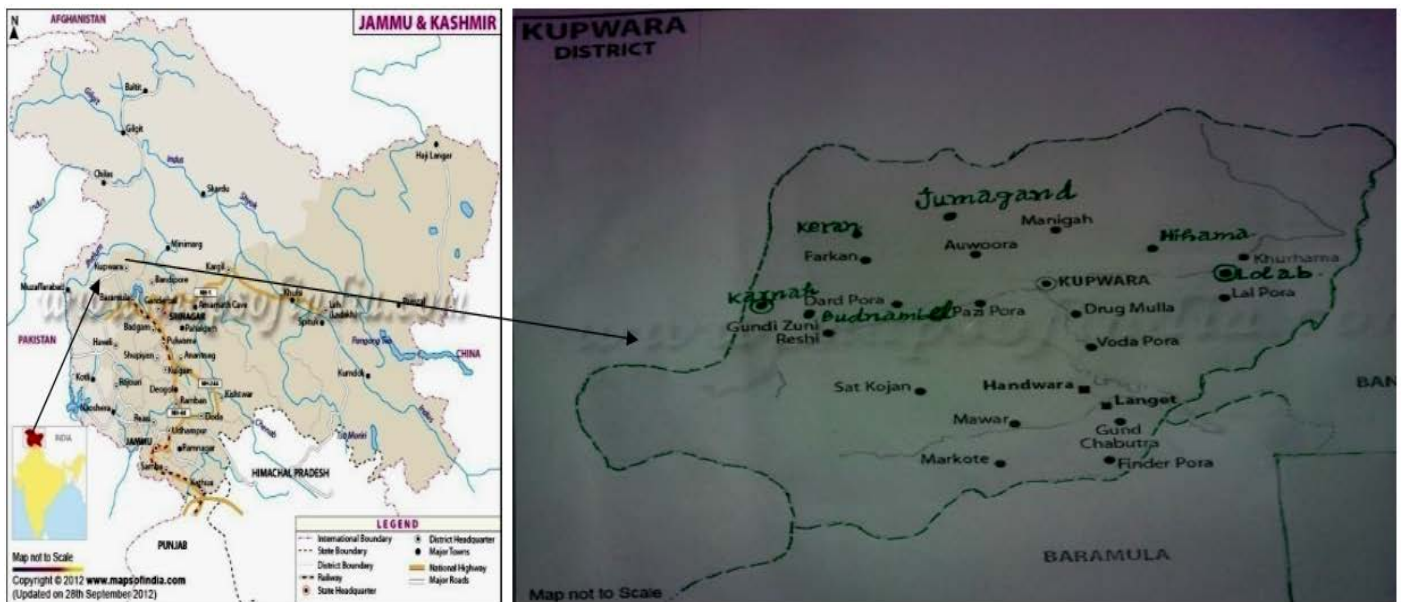


Fig 1: Map of the Kupwara showing study area (Chowkibal, Karnah, Keran, and Jungand).

3. Methods

During investigation, frequent field trips and plant collections were made from various far flung and remote regions of the study area from March 2013 to September 2014. Methods used to document the traditional knowledge included interviews and discussions with local knowledgeable persons, herbal healers called **HAKKEEMS** and Tribal's (Gujjars and Bakerwals). During surveys a total of about 70 informant **HAKKEEMS** were consulted who were between the ages of 37-98 years. A semi-structured and close-ended questionnaire [13-14] was used to gather the information about ethno veterinary medicinal plants and their uses from local people especially those residing in hilly remote areas. Informants were asked questions in Kashmiri language that was understandable in most of the cases. However, Urdu language (official language of Jammu &

Kashmir) was also used in tribal areas. In order to provide independent information, informants were separately asked to share their traditional knowledge on the utilization of medicinal plants. Data was collected according to an appropriate methodology. [15-17] all the gathered information in particular, the parts used, method of preparation, method of dosage was recorded in detail. To bring the element of accuracy, the information, obtained from the locality was crosschecked with the literature available. [18-20]

4. Results & Discussion

The present study revealed that 22 plant species belonging to 18 families are used as medicine in the studied area to cure different livestock ailments each plant species is provided with the botanical name, vernacular name, family, part used, habitat and mode of administration (**table 1**).

Table 1: Details of plant species with their ethno-veterinary uses.

| S no | Botanical name (Vernacular name) | Family | Parts used | Habitat | Uses |
|------|--|---------------|----------------|-----------------|--|
| 01. | <i>Allium cepa</i> L. (Gande) | Liliaceae | Bulb | Cultivated Herb | A mixture of crushed bulbs and common salt is made into soft balls. These balls are widely used to stimulate the oestrus cycle in cows. |
| 02. | <i>Aquilegia vulgaris.</i> (Dadue jaid) | Ranunculaceae | Whole plant | Wild Herb | Extract of the whole herb is used against weakness in live stock and for increasing milk yield. |
| 03. | <i>Amaranthus caudatus</i> L. (Leesa) | Amaranthaceae | Whole plant | Cultivated Herb | Increase milk content in cows |
| 04. | <i>Artemisia absinthium</i> L. (Teethwen) | Asteraceae | Whole plant | Wild Herb | Extract of the whole herb is used to cure the liver infection in cattle's. |
| 05. | <i>Bergenia ligulata.</i> (Pulfort) | Saxifragaceae | Roots | Wild Herb | Dried roots are grinded to make powder which is given to cattle with warm water against diarrhea, weakness and to enhance milk production in cows. |
| 06. | <i>Brassica rapa</i> L. (Tilgogal) | Brassicaceae | Leaves | Cultivated Herb | Leaves given to cows after the removal of placenta. |
| 07. | <i>Codonopsis rotundifolia.</i> (Tunda-jaide) | Campanulaceae | Whole plant | Wild Herb | Extract of the herb is used for the treatment of asthma and general weakness in livestock. |
| 08. | <i>Conyza Canadensis</i> (Linn).Cronquist. (Shallut) | Asteraceae | Aerial portion | Wild Herb | Aerial portion of the plant is crushed and made into small soft balls which are given to cattle for immediate relief from indigestion and dysentery. |
| 09. | <i>Datura stramonium</i> L. (Datur) | Solanaceae | Seeds | Wild Herb | The seeds are crushed with the help of mortar and pestle and mixed with egg yolk and are given to cattle's to cure urinary bladder infections. |

| | | | | | |
|-----|--|----------------|----------------|-----------------|---|
| 10. | <i>Dipsacus inermis</i> Wall. (Wopal hakh) | Dipsacaceae | Leaves | Wild Herb | Dried leaves are boiled in water to prepare decoction which is given to cows, sheep's, and goats immediately after delivery to keep them healthy and enhance their milk production. |
| 11. | <i>Helianthus annuus</i> L. (Gul-e-aftab) | Asteraceae | Seeds | Cultivated Herb | Seeds are used as tonic for cattle and are highly energetic. |
| 12. | <i>Juglans regia</i> L. (Doon) | Juglandaceae | Fruits | Cultivated tree | The oil is obtained from the fruit kernels, which is given to cows to increase milk production. |
| 13. | <i>Malva sylvestris</i> . (Gurisochal) | Malvaceae | Leaves | Wild Herb | Crushed leaves are given to cows |
| 14. | <i>Malva neglecta</i> L. (Sochal) | Malvaceae | Leaves | Wild Herb | The green leaves are crushed by pestle and mortar and made into small ball which is feed to young calves as treatment against diarrhea. |
| 15. | <i>Morus alba</i> L. (Tul) | Moraceae | Leaves | Cultivated Tree | The trees are lopped and used as fodder for the cattle's. |
| 16. | <i>Plantago major</i> . (Bud gull) | Plantaginaeace | Whole plant | Wild Herb | Used as fodder. |
| 17. | <i>Plantago lanceolata</i> . (Gull) | Plantaginaeace | Whole plant | Wild Herb | Used to increase milk contents in cows |
| 18. | <i>Rosa sp.</i> (Gulab) | Rosaceae | Flower | Wild Shrub | Petals of the herb are given to cure cold in cattle. |
| 19. | <i>Rumex acetosa</i> . (Abjie) | Polygonaceae | Roots | Wild Herb | Fresh roots are crushed mixed with salt and made into semi sold balls which are given to cattle to cure cough, gaseous bloat and sprained body parts. |
| 20. | <i>Sisymbrium irio</i> L. (Cheri laschiji) | Brassicaceae | Seeds | Wild Herb | A mixture of the seed powder, common salt and water is made into semi sold balls which are given to cattle (especially horses) in winter against cough, cold, and to keep them healthy. |
| 21. | <i>Sonchus arvensis</i> L. (Dudij) | Asteraceae | Whole plant | Wild Herb | Fresh plants are feed to cows and goats to enhance their milk production. |
| 22. | <i>Taraxacum officinale</i> Weber ex wiggers. (Madan hand) | Asteraceae | Leaves | Wild Herb | Dried leaves are given to cows to remain healthy. |
| 23. | <i>Thymus linearis</i> Benth. (Jangli javind) | Lamiaceae | Aerial Portion | Wild shrub | Aerial portion is boiled and decoction is made which is given to domestic livestock to cure cough, cold, and fever. |
| 24. | <i>Trifolium pretense</i> L. (Batak launt) | Fabaceae | Whole plant | Wild herb | Increase milk production in cows. |
| 25. | <i>Viburnum grandiflorum</i> Wall. (Kalmach) | Caprifoliaceae | Leaves | Wild shrub | Leaves used to feed cattle. |

In all total 25 plant species belonging to 23 genera and 18 families having ethno veterinary significance have been reported, more surveys are needed in future to be carry out in order to know the plant resources which have an immense value in the routine life and welfare of the local tribal groups. Such studies prove helpful in preservation and passing of the traditional ethno veterinary knowledge from the tribal's to next generation. Efforts should be taken in conservation and maintenance of the plants which are at the verge of extinction due to deforestation, over grazing, illegal trade of medicinal plants and global warming. Few plants of the locality possess potential of better economic exploitation; some of them are *Aquilegia vulgaris*, *Artemisia absinthium* L, *Bergenia ligulata*, *Codonopsis rotundifolia*, *Conyza Canadensis* (Linn). Cronquist, *Datura stramonium* L, *Malva neglecta* L, *Sisymbrium irio* L, *Trifolium pretense* L, and *Viburnum grandiflorum* Wall. From the above study (Table 1) it is reported that 8 whole plants (32%), 7 leaves (28%), 3 seeds (12%), 2 Aerial portions (8%), 2 roots (8%), 1 fruit (4%), 1 bulb (4%) and 1 flower (4%) are used for formulation of ethno veterinary medicine. (Fig 5). Among the 18 families,

the most utilized species belong to Asteraceae (5), Malvaceae (2), Brassicaceae (2), Plantaginaeace (2), and the remaining families were represented by 1 species (Fig3). The present study have been, enumerated among them 18 are wild herbs, 4 are cultivated herbs, 3 are wild shrubs, and 2 are cultivated trees (Fig4).

5. Conclusion

Traditional knowledge of plants in many tribal communities is changing because of rapid socio economic and cultural changes. This is particularly true for the Gujjar and Bakerwal tribal's of Kupwara district. Documentation of this knowledge is valuable for the communities and their future generations and for scientific consideration of wider uses of traditional knowledge in treating domestic animals. The low cost and almost no side effects of these traditional preparation with medicinal plants points to a great potential for research and discovery of new drugs to cure the diseases of animals. So, further scientific assessment of these medicines for phyto chemical, biological, and preclinical and clinical studies is however greatly needed.



Fig 2: Author accompanied by Gujjar boys during plant collection at Rangward, Budnamel, Kupwara).

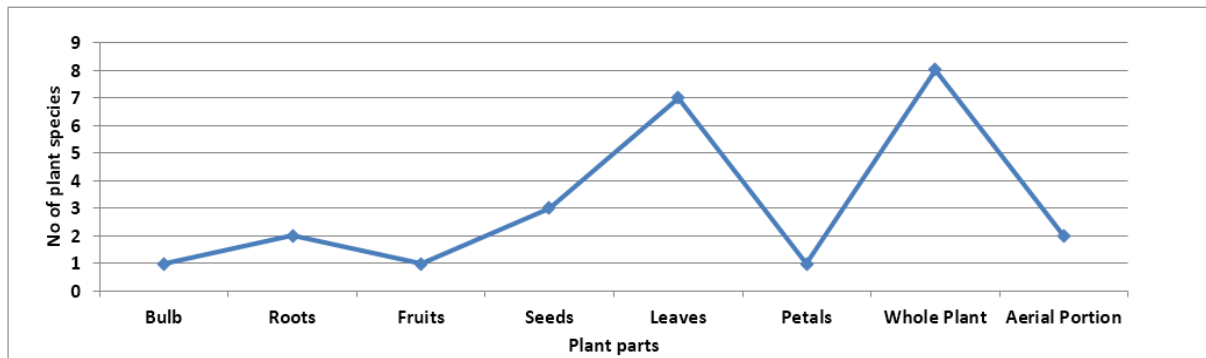
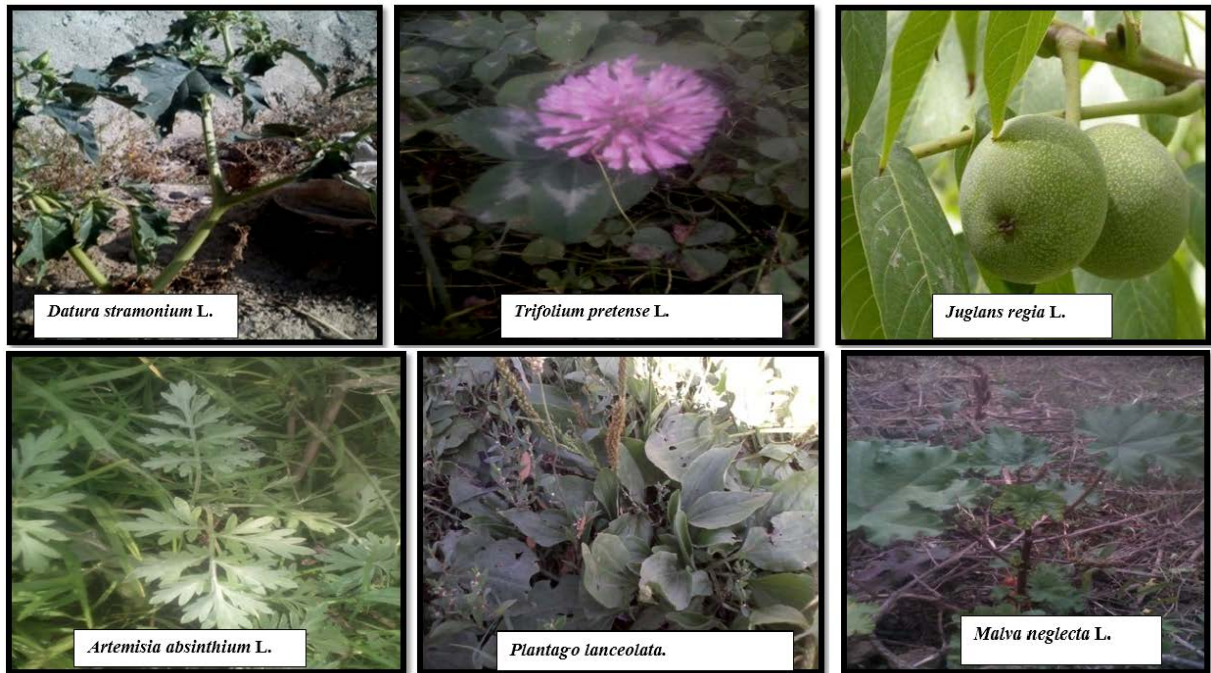


Fig 3: Ethno veterinary plant species in different categories

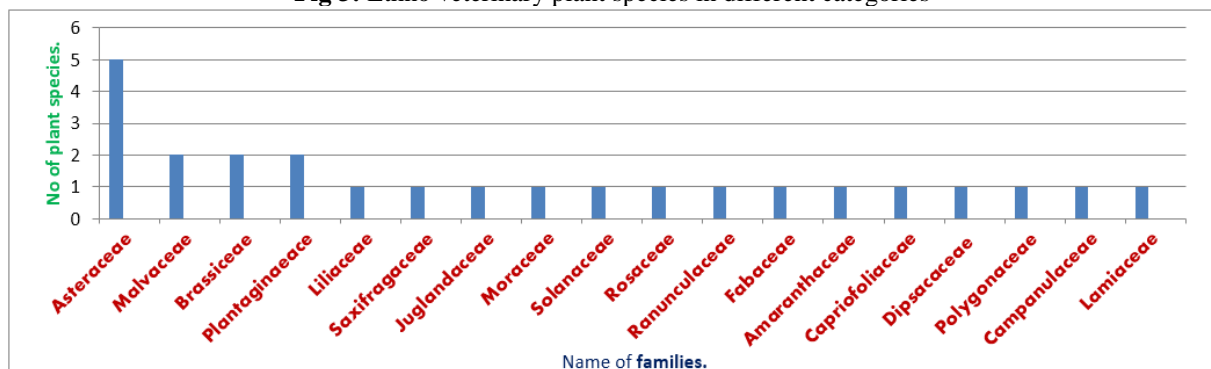


Fig 4: No of plant species of various families used by the tribal's of Kupwara (Budnamel, Keran, Karnah, and Jumgand

■ wild herbs ■ cultivated herbs ■ wild shrubs ■ cultivated trees

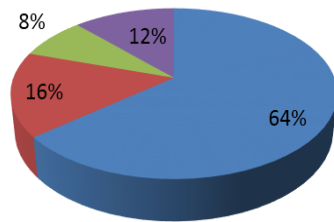


Fig 5: Life form of different plant species

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