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Ethnoveterinary uses of Medicinal Plants in District Kulgam, Jammu & Kashmir: Documentation and Cultural Insights.

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***Abstract*--Ethnoveterinary knowledge plays a crucial role in sustaining livestock health in rural Himalayan communities. This study documents the traditional use of medicinal plants in District Kulgam, Jammu & Kashmir, where farmers and herders rely on locally available species to treat common ailments in cattle, sheep, and goats. Field surveys and interviews revealed a diverse set of plants employed for digestive disorders, respiratory problems, parasitic infestations, wounds, and general weakness. Notable species include *Rumex nepalensis*, *Artemisia absinthium*, *Berberis lycium*, *Plantago major*, and *Chenopodium album*, each valued for specific therapeutic properties ranging from deworming to wound healing. These practices highlight the cultural significance and practical efficacy of indigenous remedies, while also emphasizing the importance of conserving wild plant resources in the region. The findings provide a baseline for integrating traditional knowledge with modern veterinary approaches, ensuring sustainable livestock healthcare and preservation of intangible cultural heritage in Himalayan agro-pastoral systems.**

***Keywords*-- Ethnoveterinary practices; Medicinal plants; Kulgam district; Kashmir Himalaya; Livestock health; Traditional knowledge; Indigenous remedies.**

I. INTRODUCTION

District Kulgam, with its headquarters at Kulgam town, is located approximately 68 km from Srinagar and 17 km from Anantnag. Geographically, the district lies between 33°15′ North latitude and 74°35′ East longitude. It is bounded in the east and north by Anantnag and Shopian districts, while to the south and southwest it is separated from Reasi, Ramban, and Rajouri districts by the mighty Pir Panjal range, which forms a prominent topographic barrier.

District Kulgam sustains a substantial livestock population exceeding one million animals. Among these, cattle number 112,782, sheep 155,540, and goats 22,910. Buffaloes are fewer, with a population of 1,285, while horses and ponies together account for 1,920. In addition to these ruminants, poultry farming is highly significant, with an estimated 726,000 birds. Altogether, the district maintains a grand total of 1,020,437 livestock, reflecting the central role of animal husbandry in the local economy.

Veterinary services are provided through a network of 66 units distributed across the district. These include two first aid centers, one tehsil unit, two veterinary dispensaries, three veterinary sub-units, and two frozen semen centers. The infrastructure also comprises 25 Integrated Cattle Development (ICD) centers, a single mobile dispensary, 24 trial centers, and six trial centers specifically serving Gujjar and Bakerwal pastoral communities. Although the number of veterinary surgeon centers is not available, the overall network demonstrates a structured system of animal healthcare. Complementing these facilities are 67 private poultry farms, which contribute significantly to the district's poultry sector.

This combination of a large livestock base and a moderately developed veterinary infrastructure underscores the importance of traditional ethnoveterinary practices. In remote and underserved areas, plant-based remedies continue to play a vital role in maintaining livestock health, making their documentation essential for both cultural preservation and scientific exploration.

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Table 1
Ethnoveterinary Uses of Medicinal Plants in District Kulgam

Scientific Name	Family	Vernacular Name	Growth Form	Parts Used	Utilization
Asparagus filicinus Buch. Ham	Liliaceae	Halyun	Perennial herb	Seeds	Decoction in sugary milk for easy delivery in ewes and cows
Aconitum laeve Royle	Ranunculaceae	Muneri	Perennial herb	Rhizome	Fodder mixed with rhizome extract to treat worm infections
Ajuga parviflora Benth	Lamiaceae	Ratibooty	Perennial herb	Aerial parts	Paste with oil for external inflammation and wounds
Alnus nitida Endl	Betulaceae	Saroli	Deciduous tree	Leaves	Leaves boiled in oil for foot and mouth disease
Actaea spicata L.	Ranunculaceae	Rech dad	Perennial herb	Rhizome	Used fresh or dried for worm infection and asthma
Angelica glauca Edgew	Apiaceae	Chora	Perennial herb	Rhizome	Paste with fodder to enhance milk production
Allium cepa L.	Liliaceae	Gande	Annual herb	Bulb	Onion bulb with paddy chaff to stimulate estrus cycle
Artemisia absinthium L.	Asteraceae	Tethwan	Perennial herb	Whole plant	Crushed plant with wheat flour and sugar for worm infection
Achillea millefolium L.	Asteraceae	Pahel-ghass	Perennial herb	Whole plant	Whole plant given to treat abdominal worms
Brassica campestris L.	Brassicaceae	Sarson	Annual herb	Seeds	Crushed seeds with mustard oil for skin infections
Cannabis sativa L.	Cannabaceae	Bhang	Annual herb	Leaves	Paste of fresh leaves to prevent lice infection
Cedrus deodara (Roxb.) G. Don f.	Pinaceae	Deodar/Diar	Tree	Needles	Deodar oil used to eliminate ticks and lice
Chenopodium album L.	Amaranthaceae	Wan-palak, Bathua	Herb	Leaves	Leaves boiled in mustard oil for faster wound healing
Curcuma longa L.	Zingiberaceae	Haldi, Lidar	Perennial herb	Rhizome	Rhizome powder mixed with oil applied on wounds and tied with cloth
Foeniculum vulgare Mill.	Apiaceae	Saunf, Baidean	Perennial herb	Aerial parts	Decoction of aerial parts given for indigestion
Geranium wallichianum D.	Geraniaceae	Rattan-jog	Perennial herb	Rhizome	Decoction with maize flour and ghee used for hoof inflammation and warts
Glycine max L.	Papilionaceae	Gabbe Muth	Annual herb	Seeds	Powdered seeds with wheat bran fed to lactating animals
Inula royleana DC.	Asteraceae	Gugi Phool	Perennial herb	Flower	Flower extract with oil used for hoof inflammation and wounds
Mentha sylvestris L.	Lamiaceae	Pudina, Pacdne	Perennial herb	Leaves	Leaves fed to animals to eliminate abdominal worms
Malva sylvestris L.	Malvaceae	Aarm Sotzhal	Biennial herb	Aerial parts	Shoot extract with wheat bran used for respiratory disorders in goats
Nepata laevigata Hand. Mazz	Lamiaceae	Longir	Perennial herb	Flowers	Decoction of dried flowers used for urinary tract infections
Pinus wallichiana A.B. Jacks	Pinaceae	Kayud	Tree	Needles	Needles mixed with grass fed for abdominal worms
Populus nigra L.	Salicaceae	Phras	Tree	Bark	Bark decoction used for parasitic worms
Malva neglecta Wallr.	Malvaceae	Sotchal	Annual herb	Leaves	Grinded leaves with salt fed to newborn calves for strength
Plectranthus rugosus Wall	Lamiaceae	Sloi	Deciduous shrub	Leaves	Dried leaves added to forage for sore throat in goats
Salix alba L.	Salicaceae	Veer	Tree	Leaves	Leaves and bark decoction used for intestinal worms

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II. Study Area

District Kulgam is geographically situated between 33°15′ North latitude and 74°35′ East longitude. It is bounded in the east and north by Anantnag and Shopian districts, while to the south and southwest it is separated from Reasi, Ramban, and Rajouri districts by the mighty Pir Panjal range, which acts as a massive topographic barrier and provides natural protection. The district headquarters is located at Kulgam town, and the area enjoys road connectivity with neighboring districts, ensuring accessibility to both urban and rural settlements.

According to the Census of 2011, the population of Kulgam district is 424,000, representing 3.38% of the total population of the Union Territory of Jammu and Kashmir. The district exhibits a notably high population density of 1,051 persons per square kilometer, in contrast to the state average of 124 persons per square kilometer. This demographic profile reflects the intensive settlement pattern and highlights the socio-economic importance of the district within the Kashmir Valley.

The unique geographical setting, coupled with its dense population and proximity to the Pir Panjal, underscores the district's ecological and cultural significance. These features make Kulgam an important site for documenting ethnoveterinary practices and the utilization of medicinal plants in livestock healthcare.

III. Survey And Data Collection

A field survey was conducted in District Kulgam during 2023 to document ethnoveterinary knowledge and practices. A total of **95 respondents** were interviewed using semi-structured questionnaires and personal discussions. The participants represented diverse community groups, including tribal pastoralists, local hakims (traditional practitioners), barbers, and traditional healers. These informants were selected based on their long-standing association with livestock rearing and indigenous healthcare practices.

The survey approach ensured coverage of both settled agricultural households and nomadic groups, thereby capturing a wide spectrum of ethnoveterinary knowledge. Information was cross-checked through repeated visits and triangulation among respondents to enhance reliability. The diversity of informants highlights the cultural embeddedness of ethnoveterinary practices across social strata in Kulgam.

IV. Results And Discussion

Ethnoveterinary Uses of Medicinal Plants in District Kulgam

The present survey documented **25 plant species** belonging to **20 families** that are traditionally employed for livestock healthcare in District Kulgam (Table 1). The majority of species are perennial herbs, reflecting the dominance of herbaceous flora in the ethnoveterinary repertoire. Trees such as *Alnus nitida*, *Cedrus deodara*, *Pinus wallichiana*, *Populus nigra*, and *Salix alba* also contribute significantly, particularly in treatments for parasitic and skin-related ailments.

Family representation: Lamiaceae and Asteraceae emerged as the most represented families, each contributing multiple species (*Ajuga parviflora*, *Mentha sylvestris*, *Plectranthus rugosus*, *Nepata laevigata*; *Artemisia absinthium*, *Achillea millefolium*, *Inula royleana*). This dominance highlights the pharmacological richness of these families in ethnoveterinary traditions.

Ailment categories:

- *Digestive and parasitic infections* were the most frequently reported, with species such as *Artemisia absinthium*, *Achillea millefolium*, *Mentha sylvestris*, *Pinus wallichiana*, *Populus nigra*, and *Salix alba* used to treat abdominal worms and intestinal parasites.
- *Reproductive health and lactation* were addressed with plants like *Asparagus filicinus* (easy delivery), *Allium cepa* (estrus stimulation), *Angelica glauca* (milk production), *Glycine max*, and *Silene vulgaris* (lactation enhancement).
- *Skin and wound care* was another major category, with *Ajuga parviflora*, *Alnus nitida*, *Brassica campestris*, *Cannabis sativa*, *Cedrus deodara*, *Chenopodium album*, and *Curcuma longa* widely used for inflammation, infections, ticks, lice, and wound healing.
- *Respiratory and urinary disorders* were treated with *Malva sylvestris*, *Plectranthus rugosus*, and *Nepata laevigata*.
- *General health and strength* was supported by *Malva neglecta*, fed to newborn calves for vitality.

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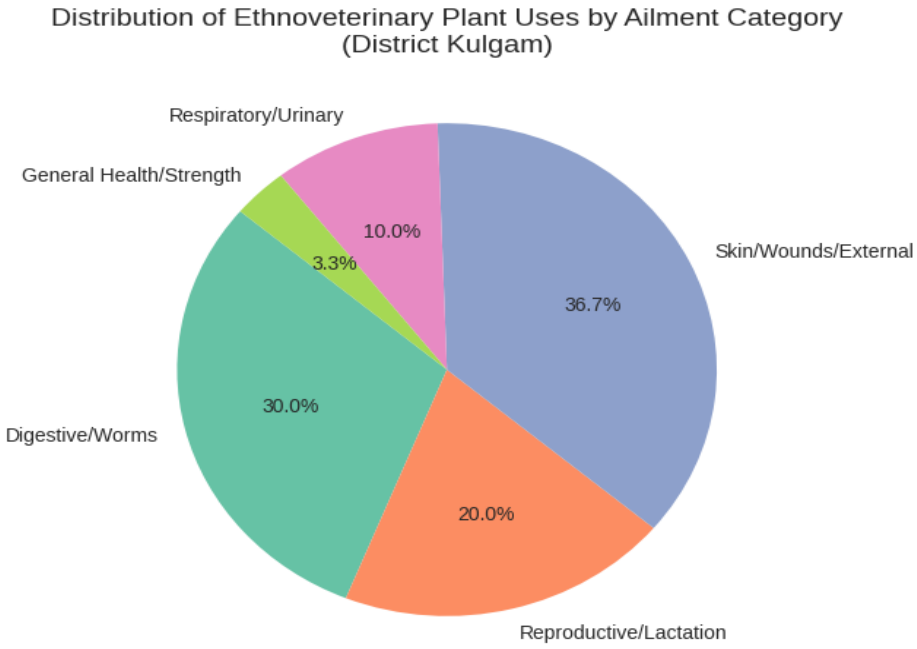
Growth forms and parts used: Herbs accounted for the majority of species, with rhizomes, leaves, aerial parts, and seeds being the most commonly utilized plant parts. Rhizomes of *Aconitum laeve*, *Actaea spicata*, and *Angelica glauca* were particularly valued, while leaves of *Cannabis sativa*, *Chenopodium album*, and *Salix alba* were frequently employed in decoctions and pastes.

Cultural significance: The reliance on locally available plants underscores the embeddedness of ethnoveterinary knowledge in rural Kulgam communities. Remedies are often prepared with simple techniques—decoctions, pastes, powders—combined with household ingredients such as oil, flour, or milk, reflecting both accessibility and cultural continuity.

Comparative insights: Similar ethnoveterinary practices have been reported across Himalayan regions, yet the specific vernacular knowledge in Kulgam highlights unique adaptations to local ecology and livestock needs. The prominence of worm-related treatments reflects the high prevalence of parasitic infections in pastoral systems, while reproductive and lactation remedies emphasize the economic importance of dairy production.



Interpretation of Results

- *Skin/Wounds/External infections (11 species, 37%)* dominate the ethnoveterinary repertoire, showing the importance of treating injuries, parasites, and infections in livestock.
- *Digestive/Worms (9 species, 30%)* are the second largest category, reflecting the high prevalence of parasitic infestations in pastoral systems.
- *Reproductive/Lactation (6 species, 20%)* highlights the economic importance of dairy production and reproductive health in cattle, sheep, and goats.
- *Respiratory/Urinary disorders (3 species, 10%)* are less frequent but still significant, especially for goats.
- *General Health/Strength (1 species, 3%)* shows targeted remedies for vitality in newborn calves.

V. Conclusion

The present study highlights the rich ethnoveterinary knowledge preserved among rural communities of District Kulgam, Jammu & Kashmir. A total of 25 plant species belonging to diverse families were documented, each used in specific remedies for livestock health.

The majority of plants were perennial herbs, with rhizomes, leaves, and aerial parts being the most frequently utilized. Treatments addressed a wide range of ailments, including digestive disorders, parasitic infections, reproductive health, lactation, skin diseases, wounds, respiratory problems, and general vitality.

The findings emphasize that ethnoveterinary practices remain deeply embedded in the cultural fabric of Kulgam, especially in areas where modern veterinary services are limited. Remedies are prepared using simple, accessible methods, often combined with household ingredients, reflecting both practicality and cultural continuity. The dominance of families such as Lamiaceae and Asteraceae underscores their pharmacological importance in traditional livestock care.

Documenting this knowledge not only preserves intangible cultural heritage but also provides a foundation for integrating indigenous practices with modern veterinary science. Such integration can enhance sustainable livestock healthcare, reduce dependence on synthetic drugs, and promote biodiversity conservation in the Kashmir Himalaya. Future research should focus on pharmacological validation of these remedies and strategies for conserving medicinal plant resources to ensure their continued availability for generations to come.

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