

Plant-Based Traditional Healthcare Practices Among Local Communities of Jammu, J&K, India

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ABSTRACT

Traditional plant-based healthcare remains an important component of local knowledge systems, yet ethnomedicinal practices in Jammu district are comparatively less documented. The present study aimed to document the medicinal plants used by local communities. Systematic field surveys were conducted from June 2022 to July 2024 across selected urban, peri-urban and rural localities of Jammu district, and ethnomedicinal information was collected from 40 informants. A total of 59 medicinal plant species belonging to 54 genera and 33 families were documented. Moraceae was the most represented family with six species, followed by Fabaceae with five species, while *Ficus* was the most species-rich genus. Trees constituted the dominant life form (40.68%), followed by shrubs (23.73%), herbs (22.03%), climbers (8.47%) and grasses (5.08%). Leaves were the most frequently utilized plant part (27.7%), followed by fruits (14.9%), whereas latex was least used (1.0%). The documented species were employed for a wide range of health conditions, particularly gastrointestinal, respiratory, dermatological, metabolic, reproductive and inflammatory disorders. The findings provide baseline information on the ethnomedicinal flora of Jammu district and underscore the importance of documenting locally held plant-use knowledge. Further phytochemical and pharmacological investigation of promising species, coupled with sustainable utilization and conservation measures, may help assess their therapeutic potential and support the preservation of associated traditional knowledge.

Keywords: Ethnobotany, ethnomedicine, traditional knowledge, phytotherapy, Jammu.

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INTRODUCTION

Traditional medicinal plant use is deeply rooted in the knowledge, practices, experiences and beliefs that have developed within communities over generations. Despite substantial advances in modern medicine and improved

access to healthcare services, traditional remedies continue to play an important role in meeting the healthcare needs of many populations, particularly in developing countries, where plant-based preparations are frequently used for the prevention and management of a wide range of physical and psychological ailments [1]. Medicinal plants are also important in many rural communities, where access to conventional healthcare facilities may be limited, thereby maintaining the relevance of locally available plant-based remedies [2]. Traditional knowledge of medicinal plants is generally built through long-term interactions between communities and their surrounding environment and encompasses the recognition of useful species, selection of plant parts, preparation of remedies and their application in local healthcare [3]. Such knowledge constitutes an important component of the cultural and biological heritage of traditional communities and provides valuable information on human-plant relationships [4]. Ethnobotanical documentation can therefore help preserve traditional knowledge and identify medicinal species of potential interest for further pharmacological investigation [5]. At the same time, changing lifestyles, urbanization and increasing exposure to globalized healthcare systems can disrupt the intergenerational transmission of plant-use knowledge, making systematic documentation increasingly important [2].

India possesses a long and diverse history of plant-based healthcare, ranging from codified systems of medicine to localized folk traditions maintained by rural and indigenous communities [6]. Its remarkable biological and cultural diversity has generated an extensive body of ethnobotanical knowledge, with thousands of plant species associated with medicinal practices across different parts of the country [7]. Traditional medicinal plants continue to play an important role in the Indian subcontinent, where different medical traditions and community-based practices use botanical resources for a variety of healthcare purposes [8].

The Indian Himalayan region is particularly important from an ethnobotanical perspective because of its rich floristic diversity and the presence of culturally diverse

communities with ancient traditions of utilizing local plant resources [9]. Within the northwestern Himalaya, Jammu and Kashmir supports a rich medicinal flora distributed across diverse ecological and elevational gradients [10]. Several ethnobotanical studies conducted across the Jammu division have documented a rich diversity of medicinal plants and associated traditional healthcare practices among local communities [10,11,12,13]. However, ethnomedicinal documentation from Jammu district itself remains comparatively limited. Broader regional studies provide valuable information on medicinal plant diversity but may not fully capture locally specific knowledge concerning the species used, plant parts utilized and their therapeutic applications. The present study documents plant-based traditional healthcare practices reported by local residents in selected areas of Jammu district and analyses the taxonomic, habit and plant-part composition of the recorded flora.

MATERIALS AND METHODS

2.1 Study area

Jammu district lies in the southern part of the Union Territory of Jammu and Kashmir in north-western India and includes subtropical plains and Shivalik foothills. It covers an area of approximately 2,342 km² and supports a population of about 1.53 million. The district experiences marked seasonality, with cold winters and very hot summers. The present survey covered Nagrota, Gandhi Nagar, Canal Road, Ranbir Singh Pura (R.S. Pura), Shakti Nagar, Akhnoor and Khour. These sites encompass urban, peri-urban and rural settings and include roadsides, river-associated habitats, cultivated areas and other accessible vegetation types.

2.2 Field survey and Ethnomedicinal data collection

Systematic field surveys were undertaken between June 2022 and July 2024 at different sites across Jammu district, including Nagrota, Gandhi Nagar, Canal Road, R.S. Pura, Shakti Nagar, Akhnoor and Khour. Ethnomedicinal information was gathered from 40 informants, comprising 28 men and 12 women. Plant species reported by the informants for the traditional management of various ailments were collected from the study localities and processed following standard

herbarium procedures. The collected specimens were dried, mounted on herbarium sheets and identified by consulting the Herbarium, Department of Botany, University of Jammu (HBJU) and the Janaki Ammal Herbarium, CSIR-Indian Institute of Integrative Medicine, Jammu (RRLH), supplemented by relevant regional floras [14,15,16,17,18]. The currently accepted botanical names and taxonomic status of the documented species were verified using Plants of the World Online [19]. Plants were collected, and data regarding the vernacular name, habit, phenology, plant part used, and reported ailment were documented along with the additional information such as habitat, locality, altitude, geographic coordinates, collection date and voucher number. Plants were pressed, dried, mounted on herbarium sheets, and identified.

RESULTS AND DISCUSSION

3.1 Diversity of Ethnomedicinal plants

The present study documented 59 plant species belonging to 54 genera and 33 families which are being used by the local populace of Jammu district to cure several ailments. Among the plant families, Moraceae was the dominant with six species, followed by Fabaceae with five species, Apocynaceae and Myrtaceae were represented by four species each, while Cucurbitaceae, Poaceae and Rutaceae contributed three species each. Asteraceae, Euphorbiaceae, Lamiaceae, Malvaceae and Solanaceae each contributed two species; the remaining 21 families were represented by a single species. Moraceae and Fabaceae were the most species-rich families in the present dataset. This differs from the broader Jammu, Kashmir & Ladakh, where Asteraceae, Lamiaceae and Fabaceae were among the most prominent families [10,12]. Such differences are expected when inventories vary in elevation, habitat coverage, sampling intensity, cultural groups and inclusion criteria. *Ficus* was the most species-rich genus (four species), while *Ipomoea* and *Morus* were represented by two species each, whereas all other genera were represented by a single species.

3.2 Growth forms

Trees were the dominant life form in the present study, comprising 24 species (40.68%), followed by shrubs (14; 23.73%), herbs (13; 22.03%), climbers (5; 8.47%) and grasses (3; 5.08%) (Fig. 1). This pattern contrasts with several ethnomedicinal studies from the adjoining districts of Jammu division, where herbs were reported

as the predominant life form [13,20]. The greater representation of trees in the present study may be attributed to the subtropical character of Jammu district and the abundance and easy accessibility of cultivated, ornamental and naturally occurring trees around the surveyed urban and peri-urban localities.

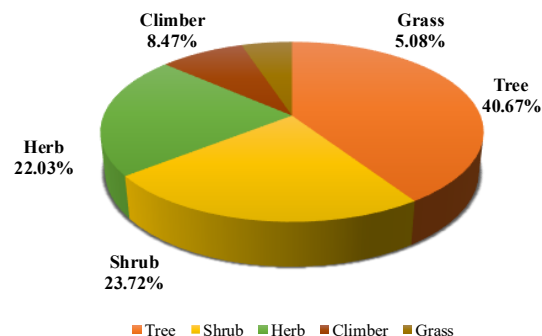


Fig. 1. Percent contribution of different ethno-medicinal plant habit

3.3 Plant parts used

Leaves were the most frequently used plant part (27.7%), followed by fruits (14.9%), bark, flowers and stems (11.9% each), roots (10.9%), seeds (6.9%), whole plants (3.0%) and latex (1.0%) (Fig. 2). The predominance of leaves is consistent with earlier ethnomedicinal studies from Jammu and Kashmir where leaves were the most frequently utilized plant part [11,20]. Their frequent use may be associated with easy accessibility and collection, as well as the presence of diverse bioactive metabolites; moreover, harvesting leaves is generally less destructive to plants than the removal of roots or whole plants [20].

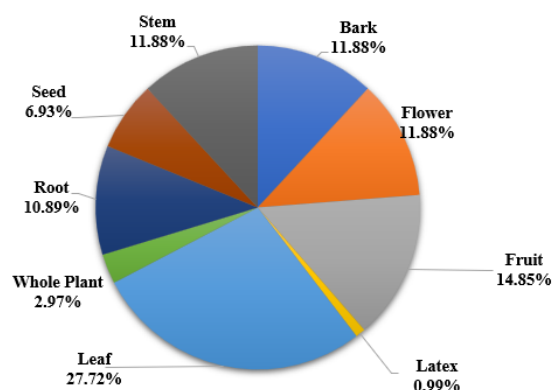


Fig. 2. Percentage of plant parts used in herbal remedies

3.4 Ethnomedicinal uses of medicinal plants

The documented species from selected localities of Jammu district exhibits a broad range of reported therapeutic uses, including gastrointestinal, respiratory, dermatological, metabolic, reproductive and inflammatory conditions (Table 1). Gastrointestinal complaints were among the most frequently cited, with species such as *Aegle marmelos* (fruit pulp), *Albizia lebbeck* (bark, seeds, leaves, flowers), *Alstonia scholaris* (bark), *Ficus racemosa* (bark, root, leaf) and *Psidium guajava* (bark, leaves, immature fruits) used for diarrhoea, dysentery, abdominal pain, ulcers and dyspepsia. Respiratory ailments including asthma, bronchitis, cough and chest colds were reported for *Alstonia scholaris*, *Camphora officinarum* (bark),

Mallotus philippensis (leaves, bark), *Syzygium cumini* (fruits) and *Zanthoxylum armatum* (fruits/seeds, bark). Dermatological uses were widespread, with *Aloe vera* (leaf gel), *Ficus benjamina* (fruits), *Lawsonia inermis* (stem bark, roots, flowers), *Ricinus communis* (leaf, root, seed oil) and *Taraxacum officinale* (flowers, roots) employed for burns, wounds, skin infections, acne, psoriasis and other cutaneous disorders.

Table 1. Plants used by the local people of district Jammu

Botanical name	Family	Local name	Habit	Part used	Ailments treated
<i>Aegle marmelos</i> (L.) Corrêa	Rutaceae	Bil	Tree	Dried fruit pulp	Treatment of fever, to stop abdominal pain, intermittent fever, allay urinary troubles, palpitation of the heart, dysentery, dyspepsia, stomachalgia, seminal weakness, vomiting, fever and swellings
<i>Albizia lebbeck</i> (L.) Benth.	Fabaceae	Sirrin	Tree	Bark seeds, leaves and flowers	Diarrhoea, dysentery, leprosy, paralysis, helminth infection, skin allergy, astringent, to treat the eye flu, lung problems, cough, gingivitis, abdominal tumors
<i>Aloe vera</i> (L.) Burm.f.	Asphodelaceae	Kuard gandal	Herb	Leaf gel	Used in skin care medicine, dyspepsia, amenorrhea, burns, colic, hepatopathy, splenopathy, constipation, sciatica and flatulence
<i>Alstonia scholaris</i> (L.) R.Br.	Apocynaceae	Satpatra	Tree	Bark	Cures asthma, malaria, fever, dysentery, diarrhea, epilepsy, skin diseases, snake bites.
<i>Bambusa vulgaris</i> Schrad. ex J.C.Wendl.	Poaceae	Baans	Grass	Young shoot, stem leaf	Used in cases of stomach heat, providing a cooling effect.
<i>Butea monosperma</i> (Lam.) Kuntze	Fabaceae	Pla	Tree	Flowers	Diabetes, cancer, ulcer stress
<i>Calotropis procera</i> (Aiton)	Apocynaceae	Akk	Shrub	Flower	Used in treatment of rheumatoid arthritis, wounds, eye ailments.
<i>Camphora officinarum</i> Boerh. ex Fabr.	Lauraceae	Karpur	Tree	Bark	Rheumatism, sprains, bronchitis, asthma, ingestion and muscle pain
<i>Canna indica</i> L.	Cannaceae	Keli	Herb	Seeds	Menstrual problems, cancer, diabetes, diarrhoea and hepatoprotective effects
<i>Cannabis sativa</i> L.	Cannabaceae	Bhang	Herb	Flower	Circulatory system and blood disorders, musculoskeletal system

					disorders, nervous system and mental disorders
<i>Capsicum annuum</i> L.	Solanaceae	Ari March	Herb	Fruit	Cancer, rheumatism, stiff joints, bronchitis and chest colds with cough and headache.
<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Kaanphuti	Climber	Fruit	Hemorrhoids, urogenital infections, diarrhoea, fever
<i>Catharanthus roseus</i> (L.) G.Don	Apocynaceae	Motiya	Shrub	Plant	Diabetes, ulcers, intestinal worms
<i>Chrysalidocarpus lutescens</i> H.Wendl.	Arecaceae	Lambi pankh	Tree	Leaves, stem	Wounds, gastro intestinal (GI) disorders, intestinal worms, skin diseases
<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	Kantoori	Climber	Fruits	Diabetes, obesity, ulcers, analgesic and antipyretic
<i>Cucurbita pepo</i> L.	Cucurbitaceae	Bada kaddu	Herb	Seed	Cancer, diabetes, cold, pain, urinary disorders
<i>Cycas revoluta</i> Thunb.	Cycadaceae	Morpankhi	Tree	Leaves and male cone	Cancer
<i>Cymbopogon citratus</i> (DC.) Stapf.	Poaceae	Nimbu kaa	Grass	Leaves	Anorexia, Cancer
<i>Elaeocarpus sphaericus</i> (Gaertn.) Heer	Elaeocarpaceae	Rudraksh	Tree	Fruit seeds	Diabetes, memory enhancer
<i>Eucalyptus globulus</i> Labill.	Myrtaceae	Safeda	Tree	Leaves	Wounds, burns, ulcers, acne, bleeding gums, bladder diseases, diabetes, fever, flu, liver and gallbladder problems
<i>Ficus benamina</i> L.	Moraceae	Rone aali anjeer	Tree	Fruits	Cancer, skin fungal infections
<i>Ficus elastica</i> Roxb. ex Hornem	Moraceae	Sangria	Tree	Stem	Fever, aging, diarrhoea, gastrointestinal
<i>Ficus racemosa</i> L.	Moraceae	Gullar	Tree	Bark, root, leaf	Mouth ulcers, diabetes and bone fracture
<i>Ficus religiosa</i> L.	Moraceae	Pippal	Tree	Leaves	Diabetes, liver problems, pain, stomach ailments
<i>Hibiscus × rosa-sinensis</i> L.	Malvaceae	Gurhal	Shrub	Flowers, leaves and roots	Reproductive disorders, diabetes, fever and pain
<i>Ipomoea cairica</i> (L.) Sweet	Convolvulaceae	Neeli Bel	Climber	Leaves	Wound healing, arthritis, gastric problems, fever
<i>Ipomoea carnea</i> G.Frost	Convolvulaceae	Balaiti Akk	Herb	Stem	Diabetes and liver ailments
<i>Kalanchoe pinnata</i> (Lam.) Pers.	Crassulaceae	Goethe	Herb	Plant, leaf	Cancer, diabetes, fungal infections, ulcers, Diuretic
<i>Lantana camara</i> L.	Verbenaceae	Panjphulli jadi	Shrub	Fruit	Malaria, rheumatism and skin rashes
<i>Lawsonia inermis</i> L.	Lythraceae	Meandi	Shrub	Stem bark, roots, flowers	Rheumatoid arthritis, headache, ulcers, diarrhea, leprosy, fever, leucorrhoea, diabetes, cardiac disease, hepatoprotective and coloring agent
<i>Leucaena leucocephala</i> (Lam.) de Wit	Fabaceae	Ipil	Shrub	Young shoots, leaves	Constipation, dysentery and ascariasis.
<i>Mallotus philippensis</i> (Lam.)	Euphorbiaceae	Kemla	Tree	Leaves and bark	Bronchitis, abdominal diseases, spleen enlargement, anti-microbial and antiparasitic

<i>Mangifera indica</i> L.	Anacardiaceae	Amb	Tree	Roots, bark, leaves, fruits	Diabetes, diarrhoea, scabies, cutaneous infection, anemia
<i>Melaleuca citrina</i> (Curtis) Dum.Cours.	Myrtaceae	Cheel	Shrub	Flowers	Diarrhoea, dysentery and rheumatism, cough
<i>Mentha arvensis</i> L.	Lamiaceae	Pootna	Herb	Fruit	Allergy, cardiovascular diseases
<i>Momordica charantia</i> L.	Cucurbitaceae	Karela	Climber	Fruit	Anorexia, blood Impurities, diabetes, diarrhea, piles, Respiratory Problems, Skin Infections and lactation
<i>Monoon longifolium</i> (Sonn.) B.Xue & R.M.K.Saunders	Fabaceae	Sita shok	Tree	Bark	Menorrhagia, gynecological disorders, internal bleeding, hemorrhoids, ulcers, uterine infections, menorrhagia
<i>Morus alba</i> L.	Moraceae	Toot	Tree	Stem bark	Diabetes, skin toning, anti-cancer
<i>Morus nigra</i> L.	Moraceae	Shehtoot	Tree	Fruits	Diabetes, obesity
<i>Murraya koenigii</i> (L.) Spreng.	Rutaceae	Kadipatta	Shrub	Green leaves, roots	Anti-fungal, Hepatoprotective, diarrhoea, anti-cancer activity
<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Tulsi	Herb	Stem, leaves and flowers	Cancer, pain, diabetes, stress
<i>Oxalis corniculata</i> L.	Oxalidaceae	Changeri kaa	Herb	Plant	Wound, diarrhea, cancer, diabetes, ulcer
<i>Phyllanthus emblica</i> L.	Phyllanthaceae	Amla	Tree	Fruit	Cancer, diabetes, liver ailments, heart problems, ulcer, anemia
<i>Piliostigma malabaricum</i> (Roxb.) Benth.	Fabaceae	Kanair	Shrub	Bark	Diabetes, diarrhoea, cancer, obesity
<i>Pseuderanthemum latifolium</i> (Vahl) B.Hansen	Acanthaceae	Guldaudi	Shrub	Leaves	Hypertension, diarrhea, knee pain, constipation, dysentery, cold
<i>Psidium guajava</i> L.	Myrtaceae	Marood	Tree	Bark, leaves and immature fruits	Cough, Diabetes
<i>Pterospermum acerifolium</i> (L.) Willd.	Malvaceae	Malungarh	Tree	Leaves	Abdominal pain, ulcers, cancer, urinary discharges
<i>Putranjiva roxburghii</i> Wall.	Putranjivaceae	Jiyopota	Tree	Leaves	Mouth and stomach ulcers, smallpox, burning sensation
<i>Ricinus communis</i> L.	Euphorbiaceae	Arandi	Herb	Leaf, root and seed oil	Rheumatism, gastrointestinal problems, menstrual disorders, age spots, skin Abrasions and inflammation
<i>Rosa gallica</i> L.	Rosaceae	Galaab	Shrub	Stem and young shoots	Indigestion, kidney tonic and menstrual regulator
<i>Saccharum officinarum</i> L.	Poaceae	Ganna	Grass	Stem, leaves and root	Obesity and malaria
<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Talle	Tree	Fruit	Sore throat, bronchitis, asthma, thirst, biliousness, dysentery and ulcers

<i>Tabernaemontana divaricata</i> (L.)R.Br. ex Roem & Schult	Apocynaceae	Chameli	Shrub	Roots, leaves, flowers	Itching sensation, fever, vomiting, diseases of eye, ear, mouth, skin, leprosy and ulcers.
<i>Tagetes erecta</i> L.	Asteraceae	Gutta	Herb	Petals, leaves	Piles, kidney troubles, muscular pain, ulcers, and wounds.
<i>Taraxacum officinale</i> F.H.Wigg.	Asteraceae	Buddi k baal	Herb	Flowers and roots	Arthritis, acne, psoriasis, hepatitis, and pre-menstrual syndrome
<i>Thuja occidentalis</i> L.	Cupressaceae	Morpankhi	Tree	Leaves	Psoriasis, amenorrhea and rheumatism
<i>Tinospora cordifolia</i> (Willd.) Hook.f. & Thomson	Menispermaceae	Gloye	Climber	Root, stem and leaves	Fever, jaundice, chronic diarrhea, cancer, dysentery, bone fracture, pain, asthma, skin disease, poisonous insect, snake bite, eye disorders
<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Asgandh	Shrub	Root, leaf, seeds	Anxiety, cancer, microbial infection
<i>Zanthoxylum armatum</i> DC.	Rutaceae	Timru	Shrub	Fruit seeds, bark	Toothache, asthma, used for gum bleeding, fever, dyspepsia, and tonics

Metabolic and systemic conditions, particularly diabetes, were associated with numerous taxa, including *Butea monosperma* (flowers), *Coccinia grandis* (fruits), *Cucurbita pepo* (seeds), *Elaeocarpus sphaericus* (fruit seeds), *Ficus racemosa*, *F. religiosa* (leaves), *Mangifera indica* (roots, bark, leaves, fruits), *Momordica charantia* (fruits), *Morus alba* (stem bark), *M. nigra* (fruits), *Ocimum tenuiflorum* (stem, leaves, flowers), *Phyllanthus emblica* (fruits), *Piliostigma malabaricum* (bark) and *Psidium guajava*. Reproductive and gynecological disorders were treated with *Canna indica* (seeds), *Hibiscus × rosa-sinensis* (flowers, leaves, roots), *Monoon longifolium* (bark) and *Rosa gallica* (stem, young shoots), while musculoskeletal and inflammatory complaints were addressed using *Calotropis procera* (flowers), *Camphora officinarum*, *Capsicum annuum* (fruits), *Lantana camara* (fruits), *Lawsonia inermis*, *Ricinus communis* and *Withania somnifera* (root, leaf, seeds). Several species, notably *Tinospora cordifolia* and *Phyllanthus emblica*, were reported for use across multiple therapeutic categories, reflecting their prominence in local materia medica.

The pattern of use documented here aligns with broader ethnobotanical trends in the Western Himalaya, where leaves, fruits and bark are commonly employed for gastrointestinal, respiratory and metabolic disorders, and where multi-purpose species feature prominently in household remedies [10,11,12,13]. The present study provides a valuable basis for identifying potentially important medicinal plants, but traditional claims require appropriate phytochemical, pharmacological and clinical validation before therapeutic efficacy can be established [21,22]. The study provides a record of local medicinal knowledge while also identifying species and therapeutic claims that may warrant further scientific investigation.

CONCLUSION

The present study highlights the rich ethnomedicinal knowledge associated with plant resources among local communities of Jammu district. The documentation of such knowledge is particularly important in the face of changing lifestyles, urbanization and the gradual decline in intergenerational transmission of traditional practices. The findings provide useful baseline information on the ethnomedicinal flora of Jammu district and contribute to the broader understanding of traditional plant use in the Western Himalaya. At the same time, the reported therapeutic applications should be regarded as traditional

knowledge rather than evidence of clinical efficacy. Further phytochemical and pharmacological investigations of promising species, together with sustainable harvesting and conservation measures, may help validate their therapeutic potential while ensuring the long-term preservation of both medicinal plant resources and the traditional knowledge associated with them.

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