

ETHNOBOTANICAL DOCUMENTATION OF WILD EDIBLE VEGETABLES OF THE PIR PANJAL REGION, JAMMU AND KASHMIR (UT)-INDIA: TRADITIONAL USES AND ETHNOMEDICINAL SIGNIFICANCE

MAHROOF KHAN^{1*}, AZIZ AHMED CHIWAN², JAVID AHMAD MIR³ AND MUZAFAR AHMAD ZERGER⁴

^{1,1,3,4} Department of Botany, Shri Chhote Shah Government Degree College, Mendhar Poonch, JK(UT) –India, 185211,

²Department of Botany, Govt. Degree College Surankote

Corresponding author: Mahroof Khan; Email: dr.mahroofkhan76@gmail.com

Author emails: azizchowhan@gmail.com

javid.db25@gmail.com; zargarmuzafar.4u6@gmail.com

DOI: <https://doi.org/10.63001/tbs.2026.v21.i04.pp166-184>

KEYWORDS

*Wild edible plants;
Ethnobotany;
Ethnomedicine;
Traditional knowledge;
Pir Panjal*

Article Info

Received: 19.09.2026

Accepted: 06.10.2026

Published: 16.10.2026

Abstract

The Pir Panjal region of Jammu and Kashmir supports diverse wild plant resources that are traditionally collected and consumed as vegetables by rural and mountainous communities. This study documented wild plants used as vegetables and recorded their associated traditional ethnomedicinal uses through field surveys, repeated visits, interviews with local inhabitants and traditional knowledge holders, direct observations, and plant identification using floristic and taxonomic literature. The supplied manuscript currently enumerates 72 plant entries. Information recorded for each entry included botanical identity, local or common name, habitat or occurrence, edible plant part, mode of preparation, and reported traditional medicinal use. Several plants were reported to have dual importance as food and traditional medicine. The findings highlight the contribution of wild vegetables to local food practices and the cultural value of associated ethnobotanical knowledge. Because the medicinal uses reported by informants represent traditional practices rather than experimentally validated therapeutic effects, further nutritional, phytochemical, pharmacological, toxicological and safety investigations are required. Documentation and sustainable management of these plant resources and the associated traditional knowledge are important for their long-term conservation and responsible utilization.

INTRODUCTION

The Pir Panjal region of the western Himalaya is characterized by considerable topographic, climatic and ecological heterogeneity, which supports a rich diversity of plant resources. Plants have been used by human societies since antiquity for food, medicine, fodder, fuel, timber, clothing and other purposes. In remote mountainous communities, where opportunities for vegetable cultivation and access to organized markets may be limited, locally available wild plants continue to contribute to household food security and dietary

diversity. Wild edible plants constitute an important component of traditional food systems in many rural and mountainous regions. In particular, wild leafy vegetables and other edible plant parts can supplement the diet with vitamins, minerals and other nutrients. Their use is not restricted to food alone; several species traditionally consumed as vegetables are also recognized by local communities for their medicinal properties. Thus, wild edible plants represent an important interface between food, traditional healthcare and ethnobotanical practices. The

ability to identify, collect, prepare and utilize these plants constitutes an important component of traditional ecological heritage. Such practices are commonly transmitted across generations through family members, particularly elders, and are reinforced through direct participation in plant collection and preparation. Despite the widespread adoption of a relatively small number of cultivated vegetable crops, the use of non-cultivated edible plants continues in many parts of the world, particularly in remote rural communities (Prescott and Prescott, 1990; Bussmann and Sharon, 2006; Kunwar et al., 2006; Cavender, 2006; Pieroni et al., 2007).

The traditional use of wild vegetables has been documented extensively in the Himalayan region. In Nepal, for example, indigenous vegetables have traditionally been collected from natural habitats for household consumption and in some areas, for local trade, particularly during periods of food scarcity (Manandhar, 1982). Early ethnobotanical investigations documented the food and medicinal uses of plants among different ethnic communities, followed by a growing body of research on indigenous plant resources during the subsequent decades (Banerji, 1955; Pandey, 1964; Dobremez, 1976; Coburn, 1984; Bhattarai, 1989, 1990, 1991, 1992, 1993; Joshi and Edington, 1990; Mueller-Boeker, 1993; Pohle, 1990; Shrestha, 1985; Shrestha and Pradhan, 1986; Panthi and Chaudhary, 2003; Bhattarai et al., 2009; Singh et al., 2011, Bussmann et al., 2016, Bhatia et al., 2016 a & b, Cheng et al., 2022).

Although ethnobotanical studies have documented medicinal and food plants from different parts of the Himalaya, comparatively less attention has been given

to the systematic documentation of wild plants used specifically as vegetables and their associated traditional medicinal uses in the Pir Panjal region of Jammu and Kashmir. Documentation of such resources is important because traditional knowledge is vulnerable to erosion as lifestyles, food preferences and access to commercial markets change.

The present study was therefore undertaken to document the diversity of wild plant species traditionally used as vegetables in the mountainous region of Pir Panjal and adjoining areas of Jammu and Kashmir, together with their traditional ethnomedicinal uses. Particular attention was given to botanical identity, local names, distribution, altitudinal range, diagnostic characteristics edible plant parts and traditional modes of utilization. The study also seeks to contribute to the documentation and conservation of indigenous ethnobotanical knowledge and provide a basis for future nutritional, phytochemical and pharmacological investigations of the documented species.

MATERIALS AND METHODS

Study Area

The study was conducted in the **Pir Panjal region of the Union Territory of Jammu and Kashmir, India**, with particular emphasis on **District Poonch and adjoining areas**. Poonch District is situated on the southern slopes of the Pir Panjal Range and covers an area of approximately **1,674 km²**. It extends between approximately **33°25'38" and 34°01'00" N latitude and 73°58'46" and 74°35'38" E longitude**. The district exhibits considerable variation in altitude, topography and climate, with landscapes ranging from lower valleys and foothills to high mountainous areas. The climate varies

from **subtropical in the lower elevations to temperate in the higher areas**. Annual rainfall is approximately **1,200–1,400 mm**, while temperatures generally range from **30–39°C during summer and 0–25°C during winter**. The higher elevations receive substantial snowfall during winter. These variations in altitude, temperature and precipitation give rise to diverse ecological conditions and vegetation types across the study area. The study region is inhabited by diverse communities, including **Gujjar, Bakarwal, Pahari and Kashmiri populations**, among others, who have traditionally utilized locally available plant resources for food, fodder, medicine and other household purposes. Ethnobotanical studies from Jammu and Kashmir have documented the use of wild plant resources by these communities and highlighted the continued importance of traditional plant-use practices, particularly in rural and mountainous areas. The study area encompasses a range of **natural and semi-natural habitats**, including forests, grasslands, agricultural fields and margins, riverbanks, roadsides, fallow lands and other disturbed habitats. This ecological heterogeneity provides suitable conditions for a diverse flora, including numerous **wild edible and ethnobotanically important plant species**, which formed the principal focus of the present investigation.

Field survey and ethnobotanical data collection

The present ethnobotanical survey was conducted in the **mountainous Pir Panjal region and adjoining areas from June 2023 to April 2025**. Field surveys were carried out through repeated visits to selected villages representing different **altitudinal zones, habitats and local communities**. Villages were selected based on the continued practice

of collecting and utilizing wild plants for **food and traditional healthcare**.

Ethnobotanical information was obtained through repeated field visits and interactions with **local inhabitants, traditional healers, knowledgeable persons, and individuals experienced in the collection and preparation of wild vegetables**. Data were collected using **informal and semi-structured interviews, field observations and guided field walks**. Where feasible, informants accompanied the researchers during field visits, facilitating accurate identification of plant species and documentation of their **local names, edible parts, modes of preparation and traditional ethnomedicinal uses**.

Information on medicinal applications was recorded as **reported by the informants**. Particular attention was given to uses independently reported or corroborated by more than one knowledgeable informant. The medicinal uses documented in the present study are presented as **traditional ethnomedicinal practices and are not intended to represent experimentally validated therapeutic effects**.

Plant collection and identification

Plant specimens were **observed and photographed in their natural habitats during field surveys** conducted across different parts of the Pir Panjal region. Field photographs and observations were used for subsequent identification and documentation. Preliminary identification was carried out using regional and national floras and relevant taxonomic literature, including Polunin and Stainton (1984), Stainton (1988), and other floristic works pertaining to the **Pir Panjal region and Jammu and Kashmir**. Species identification was further verified through consultation with taxonomic experts

and comparison with published floristic descriptions and taxonomic literature.

For each documented species, field-based information was recorded on **botanical family, scientific name, local/common name, habitat, altitudinal occurrence, edible plant part, mode of preparation, and traditional ethnomedicinal uses**. Ethnobotanical information was collected through **field observations, discussions and interactions with local inhabitants and knowledgeable informants**, with particular attention to the traditional use of wild plants as vegetables and their associated medicinal applications. All species and associated ethnobotanical information were documented directly from their **natural habitats and local use practices** during the field surveys.

Data verification

The ethnobotanical information obtained during the initial interviews was subsequently cross-checked with other knowledgeable informants and through repeated field observations. Plant identification was also independently verified to minimize taxonomic errors.

RESULTS AND DISCUSSION

Diversity of wild edible vegetable plants

The present study documented 68 wild plant species traditionally used as vegetables and/or associated with ethnobotanical and ethnomedicinal practices in the mountainous region of Pir Panjal and adjoining areas. The documented species represent a considerable diversity of wild food resources used by local communities. The plants were recorded from different habitats and altitudinal zones, reflecting the ecological heterogeneity of the study region.

The documented species are presented in alphabetical order according to their scientific names. For each species, information is provided on botanical family, local/common name, voucher number, relevant botanical characters, edible plant part and traditional mode of utilization, together with the reported ethnomedicinal uses.

Repeated field visits and cross-verification with knowledgeable local informants helped to confirm the identity and traditional uses of the documented plants. Several species were reported to have dual importance as both food and traditional medicine. This dual utilization highlights the close relationship between dietary practices and traditional healthcare systems among rural communities of the region.

The present study documented a total of 68 wild edible species belonging to 58 genera and 38 families. Among the families, *Amaranthaceae* was the most dominant, represented by seven species, followed by *Fabaceae* with six species. At the generic level, *Dioscorea* was the most species-rich genus, comprising three species (Table-1). The occurrence of numerous wild vegetables in the study area demonstrates the importance of non-cultivated plant resources in maintaining dietary diversity. Local communities possess considerable knowledge regarding the seasonality, collection, preparation and utilization of these plants. Such knowledge represents an important component of traditional ecological knowledge and may have considerable cultural significance.

Ethnomedicinal significance

In addition to their role as food resources, several of the documented wild vegetables

were reported by local informants to be traditionally used for the management of various common ailments. These reports indicate that food and traditional medicine are not necessarily viewed as separate domains within the local ethnobotanical system. However, the medicinal uses documented in the present study represent community-reported traditional practices and should not be considered evidence of clinical efficacy.

The continued documentation of these uses is important because traditional knowledge concerning wild plants may decline as younger generations increasingly shift toward commercially available foods and modern healthcare systems. At the same

time, the documented species may provide opportunities for future research on nutritional composition, phytochemistry, pharmacology and safety.

The present findings are broadly consistent with earlier ethnobotanical investigations demonstrating the importance of plant diversity in traditional food and healthcare systems in Himalayan communities (Samant and Dhar, 1997; Samant et al., 1998). However, further investigations are required to establish the nutritional, phytochemical, pharmacological and toxicological properties of individual species before any therapeutic claims can be made.

Table -1: Wild and traditionally utilized edible plants of the Pir Panjal region: taxonomy, vernacular names, altitudinal range, distribution, diagnostic characters and modes of vegetable use.

S. No.	Botanical name	Local/vernacular name	Family	Altitudinal range*	Distribution	Diagnostic characteristics (ISSN: 0973-7049(P))	Use as vegetable
				21(4), 166-184, 2026		www.thebioscan.com	
1	<i>Achyranthes aspera</i> L.	Puthkanda	Amaranthaceae	0–2,000 m	Tropical and subtropical Asia, Africa and Australia; widespread in India	Erect herb, opposite ovate leaves, hairy stems, terminal spikes	Young leaves cooked as saag
2	<i>Aesculus indica</i> (Wall. ex Cambess.) Hook.	Khanor, Bunkhori	Sapindaceae	1,200–3,000 m	Western Himalaya: Pakistan, Kashmir, Himachal Pradesh and Uttarakhand	Large tree; palmately compound leaves; large white flowers; spiny capsule	Seeds processed into flour; not primarily a vegetable
3	<i>Allium roylei</i> Stearn	Jungli piyaz	Amaryllidaceae	2,000–4,000 m	Western Himalaya, particularly Kashmir and adjoining Himalayan regions	Small ovoid bulb; narrow leaves; hemispherical umbel with reddish flowers	Bulbs and leaves used as vegetable/spice
4	<i>Amorphophallus campanulatus</i> (Decne.) Blume	—	Araceae	0–1,500 m	Tropical South and Southeast Asia; cultivated widely in India	Large underground tuber; enormous divided leaf; solitary spathe	Corm boiled and cooked as vegetable
5	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Kanchuri	Amaranthaceae	0–1,500 m	Tropical and subtropical Asia, Africa and Australia	Prostrate/ascending herb; opposite elliptic leaves; sessile flower heads	Young shoots and leaves cooked as pot herb
6	<i>Amaranthus spinosus</i> L.	Kande lundo	Amaranthaceae	0–1,500 m	Tropical and subtropical regions worldwide	Erect annual; paired axillary spines; ovate leaves; dense green inflorescences	Tender shoots fried/cooked as vegetable
7	<i>Amaranthus viridis</i> L.	Chauli	Amaranthaceae	0–2,000 m	Tropical and subtropical regions worldwide	Erect/prostrate annual; simple ovate leaves; terminal green spikes	Tender shoots and leaves eaten as vegetable
8	<i>Asplenium trichomanes</i> L.	Kandai	Aspleniaceae	500–3,000 m	Temperate and mountainous regions of Eurasia, Africa and the Americas	Small tufted fern; dark rachis; numerous rounded pinnae	Tender shoots/leaves cooked as vegetable
9	<i>Phanera vahlii</i> (Wight & Arn.) Benth.	Taur	Fabaceae	300–1,800 m	Indian subcontinent, especially Himalayan foothills	Large woody climber; bilobed hairy leaves; coiled tendrils	Seeds roasted and eaten; vegetable use not clearly stated in source
10	<i>Bauhinia variegata</i> L.	Kerale, Kachnar/Koiralo	Fabaceae	300–1,800 m	Indian subcontinent to southern China	Deciduous tree; characteristic bilobed leaves; showy pink/white flowers	Flower buds, young shoots and immature fruits cooked/pickled

S. No.	Botanical name	Local/vernacular name	Family	Altitudinal range*	Distribution	Diagnostic characteristics	Use as vegetable
11	<i>Asparagus racemosus</i> Willd.	Kurilo	Asparagaceae	300–1,400 m	Indian subcontinent and Southeast Asia	Perennial climber; tuberous roots; slender shoots with cladodes	Succulent young shoots eaten cooked/raw and in soup
12	<i>Basella alba</i> L.	Poi sag	Basellaceae	0–1,500 m	Tropical Asia and widely cultivated elsewhere	Succulent twining herb; fleshy ovate leaves; axillary spikes	Tender parts cooked as leafy vegetable
13	<i>Madhuca longifolia</i> (J.Koenig ex L.) J.F.Macbr. [syn. <i>Bassia longifolia</i>]	Mahuwaa	Sapotaceae	0–1,200 m	Indian subcontinent	Large evergreen/semi-evergreen tree; leathery leaves; fleshy fragrant flowers	Flowers eaten raw or fried
14	<i>Boerhavia diffusa</i> L.	Punarnavaa	Nyctaginaceae	0–2,000 m	Tropical/subtropical Asia, Africa and Americas	Profusely branched herb; thick ovate leaves; small purple flowers	Tender shoots cooked as vegetable
15	<i>Bombax ceiba</i> L.	Simbal	Malvaceae	0–1,500 m	South and Southeast Asia	Large deciduous tree; palmate leaves; large red flowers; cottony seeds	Young flower buds cooked as vegetable
16	<i>Capsella bursa-pastoris</i> (L.) Medik.	Chamsure	Brassicaceae	0–3,000 m	Cosmopolitan, especially temperate regions	Small annual herb; basal pinnately divided leaves; white racemes; triangular pods	Tender shoots used as vegetable
17	<i>Chenopodium album</i> L.	Bethe	Amaranthaceae	0–4,000 m	Nearly worldwide; widespread in temperate Asia	Erect annual; alternate ovate leaves; mealy surface; clustered flowers	Boiled tender shoots used as vegetable
18	<i>Chenopodium murale</i> L.	Kalo bethe/Chirua bethe	Amaranthaceae	0–2,000 m	Europe, Africa, Asia and introduced elsewhere	Erect annual; angular/serrated leaves; green clustered flowers	Vegetable use not explicitly stated in supplied entry
19	<i>Codonopsis ovata</i> Benth. ex Royle	Ludut	Campanulaceae	1,500–3,500 m	Western Himalaya	Small perennial herb; opposite ovate leaves; nodding pale-blue bell-shaped flowers	Roots used for making vegetable

S. No.	Botanical name	Local/vernacular name	Family	Altitudinal range*	Distribution	Diagnostic characteristics	Use as vegetable
20	<i>Coccinia grandis</i> (L.) Voigt	Golkakari	Cucurbitaceae	Up to 1,000 m	Indian subcontinent and tropical Asia; in India especially plains and lower hills; also Africa, China, Myanmar, Pakistan and Sri Lanka.	Prostrate/climbing herb with palmately lobed leaves, slender tendrils and solitary white flowers	Fruits cooked and eaten as vegetable
21	<i>Cordia dichotoma</i> G.Forst.	Lasoora	Boraginaceae	Up to 1,500 m	Tropical and subtropical India; common in sub-Himalayan tract and outer ranges; also South and Southeast Asia.	Small-medium deciduous tree; grey-brown bark, white bisexual flowers and yellowish viscid drupes	Immature fruits used as vegetable and pickle
22	<i>Lepidium didymum</i> L. [syn. <i>Coronopus didymus</i>]	Gangly Hallian	Brassicaceae	Up to 2,000 m	Widespread weed in temperate/subtropical regions; recorded from many Indian states and Himalayan areas	Prostrate mat-forming annual with pinnately divided pungent leaves and very small flowers	Young shoots boiled and cooked like spinach
23	<i>Commelina benghalensis</i> L.	Chhura	Commelinaceae	300–2,000 m	Himalaya, India, Myanmar, Sri Lanka, southern China, Taiwan and Malesia.	Prostrate, branched herb with ovate leaves; blue aerial flowers and underground cleistogamous flowers	Leaves and tender shoots cooked as vegetable
24	<i>Deparia acrostichoides</i> (Sw.) M.Kato [source: <i>Diplazium acrostichoides</i>]	Silvery spleenwort	Athyriaceae	500–2,500 m	Mainly temperate forests; the precise Himalayan identity of the manuscript record should be taxonomically rechecked	Deciduous perennial fern, 60–90 cm tall, bright-green pinnate fronds and linear/silvery sori	Young fronds cooked as vegetable
25	<i>Diplazium frondosum</i> (C.B.Clarke) Christ	Khandhor, Kasror	Athyriaceae	1,000–2,400 m	Himalayan region, including northwestern Himalayan forests	Large terrestrial fern with stout scaly rhizome; large bipinnate–tripinnatifid fronds and linear sori	Young circinate fronds cleaned and cooked; also pickled
26	<i>Dipsacus inermis</i> Wall.	Wupal hak	Caprifoliaceae	1,400–4,100 m	Afghanistan through West and East	Tall herb; opposite elliptic/lobed leaves;	Young shoots/leaves

S. No.	Botanical name	Local/vernacular name	Family	Altitudinal range*	Distribution	Diagnostic characteristics	Use as vegetable
					Himalaya to Tibet, China and Southeast Asia. Himalayan floras record it in forests, grassy slopes and stream margins.	globose whitish flower heads on long peduncles	cooked as spinach
27	<i>Colocasia esculenta</i> (L.) Schott	Karkalo	Araceae	Up to 2,000 m	Tropical and subtropical Asia; widely cultivated and naturalised in wet places throughout India	Robust herb with underground corm and large long-petioled sagittate/peltate leaves	Corms roasted, boiled or baked; young leaves and petioles cooked; leaves also used for pakora
28	<i>Crateva unilocularis</i> Buch.-Ham.	Sipligan	Capparaceae	Up to 1,500 m	Along streams and mixed forests; India, Nepal, Bhutan, Bangladesh and Myanmar eastward to China/Vietnam.	Small branched tree with petiolate leaves and conspicuous flowers	Young leaves boiled as vegetable and used for pickle
29	<i>Cucurbita maxima</i> Duchesne	Pharsi	Cucurbitaceae	0–2,000 m	Cultivated worldwide, including Himalayan valleys and lower/middle mountain settlements	Annual trailing/climbing herb; large orbicular leaves and large yellow flowers	Tender shoots and fruits cooked as vegetable
30	<i>Dendrocalamus hamiltonii</i> Nees & Arn. ex Munro	Tama bans	Poaceae	300–1,500 m	Subtropical Himalaya to Yunnan and Indo-China.	Large thick-walled bamboo, often 12–20 m; swollen nodes and lanceolate leaves	Young bamboo shoots eaten as tama
31	<i>Dioscorea alata</i> L.	Tar gi be	Dioscoreaceae	Up to 1,350 m	Native to Tropical Asia , including India, Nepal, Bangladesh, Myanmar, Thailand, Vietnam and parts of Malesia and Papuasias	Perennial tuberous climber with winged stems; leaves ovate to cordate, entire; tubers large and starchy; bulbils sometimes present; flowers unisexual and plants dioecious.	Tubers are generally boiled, baked, roasted or cooked as a vegetable.
32	<i>Dioscorea deltoidea</i> Wall. ex Griseb.	Bhyakur/Yam	Dioscoreaceae	450–3,100 m	Northwestern Himalaya from	Perennial twining climber with	Underground parts

S. No.	Botanical name	Local/vernacular name	Family	Altitudinal range*	Distribution	Diagnostic characteristics	Use as vegetable
33	<i>Dioscorea pentaphylla</i> L.	Ban tarul	Dioscoreaceae	300–2,000 m	Pakistan and Kashmir eastward through Nepal to China and Indo-China.	cordate/deltoid leaves and underground rhizome	traditionally boiled, fried, roasted or steamed
34	<i>Deparia boryana</i> (Willd.) M.Kato [source: <i>Dryoathyrium boryanum</i>]	Kalo niuro	Athyriaceae	1,000–3,000 m	Tropical and subtropical South and Southeast Asia; widespread in India	Perennial climber; palmately 3–5-foliolate leaves and underground tubers	Tubers eaten after boiling, frying, steaming or roasting
35	<i>Deparia boryana</i> (Willd.) M.Kato [source: <i>Dryoathyrium boryanum</i>]				Himalayan and Asian montane forests; nomenclature should be verified against the voucher specimen	Rhizomatous fern with pinnately compound fronds and circinate young leaves	Young fronds used as vegetable and pickle after roasting, boiling or steaming
35	<i>Fagopyrum esculentum</i> Moench	Phapaer	Polygonaceae	500–3,500 m	Cultivated throughout temperate Asia and Himalayan regions	Annual herb with triangular-cordate leaves and pinkish-white flowers	Tender shoots used as vegetable; seeds mainly milled into flour
36	<i>Ficus auriculata</i> Lour.	Triambal	Moraceae	500–2,100 m	Himalayan foothills and subtropical Asia from northeastern Pakistan/India to southern China and Southeast Asia	Small–medium tree with very large elephant-ear-like leaves and cauliflorous figs	Young figs and tender leaves cooked as vegetable; ripe figs eaten raw
37	<i>Ficus palmata</i> Forssk.	Phagra	Moraceae	500–2,400 m	Afghanistan, Pakistan and northwestern Himalaya through northern India and Nepal	Deciduous shrub/small tree; rough variable lobed leaves and pear-shaped edible figs	Young figs and tender leaves cooked as vegetable; ripe fruits eaten
38	<i>Gagea elegans</i> Wall. ex Royle	Jardu	Liliaceae	2,000–4,000 m	Western Himalaya and adjoining high-altitude regions	Small bulbous perennial; solitary narrow basal leaf and short flowering stem	Young fleshy leaves cooked as leafy vegetable/pot herb
39	<i>Galinsoga parviflora</i> Cav.	Peeplo	Asteraceae	500–3,000 m	Native to the Americas but now widely naturalised as a weed in India and	Annual 20–60 cm; opposite serrate leaves;	Young aerial parts reported as leafy vegetable

S. No.	Botanical name	Local/vernacular name	Family	Altitudinal range*	Distribution	Diagnostic characteristics	Use as vegetable
					Himalayan agricultural landscapes	tiny heads with white rays and yellow discs	
40	<i>Galium aparine</i> L.	Khorti	Rubiaceae	1,000–3,500 m	Temperate Eurasia, North Africa and widely naturalised; common in Himalayan temperate habitats	Weak climbing annual with quadrangular hooked stem, leaves in whorls and bristly fruits	Young shoots and leaves cooked as pot herb
41	<i>Gnaphalium luteoalbum</i> L. [modern treatments place it in <i>Laphangium</i>]	Sukhree	Asteraceae	500–3,000 m	Widespread in temperate/subtropical regions; disturbed and moist habitats in India and Himalaya	Woolly annual/short-lived herb; narrow whitish leaves and clustered small capitula	Young shoots and leaves cooked as vegetable
42	<i>Ipomoea aquatica</i> Forssk.	Karmaiya sag	Convolvulaceae	Up to 1500 m	Tropical and subtropical Asia; widespread in freshwater/wet habitats	Trailing aquatic/semi-aquatic herb with hollow stems and sagittate/lanceolate leaves	Young tender shoots and leaves cooked as leafy vegetable
43	<i>Lamium album</i> L.	Nealuhak	Lamiaceae	1,500–3,700 m	Temperate Eurasia; in India mainly damp Himalayan habitats.	Perennial with hollow quadrangular stem, opposite serrate leaves and white bilabiate flowers	Young leaves cooked as pot herb
44	<i>Lamium amplexicaule</i> L.	Henbit	Lamiaceae	500–3,000 m	Native to Eurasia and North Africa; widespread weed in temperate regions including Himalayan cultivation	Small annual; quadrangular stem, opposite leaves; upper leaves sessile and stem-clasping; pink-purple flowers	Leaves boiled and cooked like spinach
45	<i>Lathyrus aphaca</i> L.	Gangli mattor	Fabaceae	Up to 2,100 m	Widespread in India including J&K, Punjab, Himachal Pradesh and Uttarakhand; also Eurasia and North Africa.	Slender climbing annual; true leaves reduced to tendrils, large leaf-like stipules and yellow flowers	Young shoots and tender parts boiled/cooked as leafy vegetable
46	<i>Lathyrus sativus</i> L.	Khesri	Fabaceae	0–2,000 m	South Asia, Mediterranean region	Annual weak climber with winged stem,	Young shoots and leaves

S. No.	Botanical name	Local/vernacular name	Family	Altitudinal range*	Distribution	Diagnostic characteristics	Use as vegetable
					and other temperate/subtropical areas as a cultivated pulse	pinnate leaves ending in tendrils and blue/purple/white flowers	cooked as leafy vegetable; processed seeds used as pulse
47	<i>Malva parviflora</i> L.	Sonchal	Malvaceae	300–2,400 m in	Northwestern Himalaya, Kashmir, Punjab and other parts of India; native Mediterranean–West Asian range and widely naturalised.	Annual/biennial herb; rounded shallowly lobed leaves, small pale-pink/white flowers and disc-like schizocarps	Young leaves and shoots boiled and cooked as leafy vegetable
48	<i>Medicago lupulina</i> L.	Ardkhkhdboti	Fabaceae	500–3,000 m	Temperate Eurasia and North Africa; naturalised widely and common in Himalayan grasslands/disturbed habitats	Small annual/perennial; trifoliate leaves, small yellow flower heads and kidney-shaped dark pods	Young shoots and leaves boiled/cooked as leafy vegetable
49	<i>Lepidium sativum</i> L.	Chamsur	Brassicaceae	Up to 2,500 m	Probably SW/central Asian in origin; cultivated and naturalised throughout India and many temperate regions	Erect annual; dissected lower leaves and small white flowers in elongate racemes	Tender shoots eaten as vegetable
50	<i>Leucas cephalotes</i> (Roth) Spreng.	Gumma	Lamiaceae	Up to 1,700 m	India and Himalaya; also Nepal, Bhutan and Sri Lanka.	Erect annual; pubescent lanceolate leaves and white bilabiate flowers in dense heads	Tender shoots steamed with salt and eaten as vegetable
51	<i>Manihot esculenta</i> Crantz	Simal tarul	Euphorbiaceae	0–1,500 m	Native to tropical South America; extensively cultivated throughout tropical Asia including India	Perennial shrub with palmately divided leaves and starchy tuberous roots	Roots eaten only after proper processing/cooking
52	<i>Mentha spicata</i> L.	Pudina/Patina/Bawari	Lamiaceae	500–3,000 m	Eurasian origin; widely cultivated and naturalised in India and Himalayan valleys	Aromatic perennial with creeping rhizome, opposite serrate leaves and terminal flower spikes	Leaves/young stems used as chutney, condiment and pickle

S. No.	Botanical name	Local/vernacular name	Family	Altitudinal range*	Distribution	Diagnostic characteristics	Use as vegetable
53	<i>Momordica dioica</i> Roxb. ex Willd.	Kakora	Cucurbitaceae	Up to 600 m	Indian subcontinent to Myanmar; recorded in both East and West Himalaya.	Dioecious perennial climber with yellow flowers and small green ovoid fruits	Immature fruits fried or cooked with spices
54	<i>Morchella esculenta</i> (L.) Pers. sensu lato	Gugchi	Morchellaceae	1,500–3,500 m	Temperate Northern Hemisphere; Himalayan morels occur in J&K, Himachal Pradesh and Uttarakhand	Hollow fruiting body with deeply pitted, honeycomb-like cap attached to pale stipe	Fruiting bodies cooked and eaten as highly valued food
55	<i>Rumex hastatus</i> D. Don	Khatti Buti	Polygonaceae	600–3200 m	Western Himalaya, including Jammu & Kashmir; commonly found on dry slopes, rocky places, banks and walls.	Bushy herb with ascending stems and narrow, arrow-shaped leaves with spreading basal lobes; flowers small, greenish-white in slender terminal clusters.	Young leaves are cooked as a vegetable ; they may also be used for chutney.
56	<i>Murraya koenigii</i> (L.) Spreng.	Karipatta	Rutaceae	0–1,500 m	Indian subcontinent and Sri Lanka; widely cultivated in tropical Asia	Strongly aromatic shrub/small tree; imparipinnate leaves and small white flowers	Leaves added to vegetables as flavouring/condiment
57	<i>Ophioglossum petiolatum</i> Hook.	Jibre sag	Ophioglossaceae	500–2,500 m	Tropical/subtropical Asia and other warm regions; scattered moist grassy habitats	Small terrestrial fern with a simple sterile lamina and separate fertile spike	Tender aerial portions cooked as vegetable
58	<i>Oxyria digyna</i> (L.) Hill	Kalashi	Polygonaceae	2,300–5,500 m	Circumpolar and high-mountain Northern Hemisphere; Himalaya from Pakistan eastward to China.	Fleshy alpine perennial; basal reniform leaves and branched racemes; winged fruits	Sour leaves boiled and then cooked as vegetable
59	<i>Portulaca oleracea</i> L.	Nailiyara	Portulacaceae	2,500 m	Cosmopolitan warm-temperate and tropical weed, widespread throughout India	Prostrate succulent annual with reddish stems, fleshy obovate leaves and yellow flowers	Young shoots and tender leaves cooked as vegetable

S. No.	Botanical name	Local/vernacular name	Family	Altitudinal range*	Distribution	Diagnostic characteristics	Use as vegetable
60	<i>Plantago major</i> L.	Isabgol	Plantaginaceae	500–3,500 m	Widespread across Eurasia and naturalised worldwide; common in disturbed Himalayan habitats	Low perennial forming basal rosette of broad prominently veined leaves; long greenish spikes	Young soft leaves cooked as vegetable
61	<i>Nasturtium officinale</i> W.T.Aiton [syn. <i>Rorippa nasturtium-aquaticum</i>]	Simrayo	Brassicaceae	500–3,500 m	Native to Europe and western/central Asia, now widespread; occurs in cool streams and springs in Himalayan regions	Aquatic/semi-aquatic perennial with pinnate leaves and small white flowers	Tender shoots eaten as leafy vegetable
62	<i>Rumex nepalensis</i> Spreng.	Halhale sag	Polygonaceae	900–4,000 m	Widespread throughout Himalaya from Kashmir to Bhutan and beyond into Asia and Africa.	Robust perennial herb; large basal petiolate leaves and branched clusters of small flowers	Tender shoots cooked as vegetable
63	<i>Smilax macrophylla</i> Roxb.	Kukur dino	Smilacaceae	600–2,500 m	Himalayan and subtropical South/Southeast Asian forests	Woody climber with sparsely prickled stems, alternate broad leaves, tendrils and umbels	Tender shoots roasted or boiled and eaten as vegetable
64	<i>Solanum nigrum</i> L.	Kaligedi/Kamai	Solanaceae	2,400–3,000 m	Eurasian species complex, now widespread globally; common in dry subtropical–temperate Himalayan habitats.	Annual herb; ovate leaves, white star-shaped flowers and black ripe berries	Tender shoots/leaves boiled or fried; only properly identified edible material should be used
65	<i>Spinacia oleracea</i> L.	Gobre palungo	Amaranthaceae	500–3,000 m	Cultivated worldwide; common vegetable crop in temperate Himalayan valleys	Fast-growing leafy annual/biennial with dark-green petiolate leaves	Leaves eaten cooked, fried, in soup or salad
66	<i>Urtica dioica</i> L.	Sisnu	Urticaceae	1,200–3,500 m;	Europe to temperate Asia and North Africa; in India distributed through the Himalaya from Kashmir eastwards.	Perennial herb covered with stinging hairs; opposite serrate ovate–lanceolate leaves	Tender shoots boiled and eaten as green vegetable

S. No.	Botanical name	Local/vernacular name	Family	Altitudinal range*	Distribution	Diagnostic characteristics	Use as vegetable
67	<i>Vicia angustifolia</i> L.	Kutali kosha	Fabaceae	500–3,000 m	Eurasia and Mediterranean region; occurs as a weed/grassland herb in parts of the Himalaya	Slender annual legume with pinnate leaves, tendrils and axillary papilionaceous flowers	Flowers reported in your source as cooked vegetable
68	<i>Zingiber officinale</i> Roscoe	Soanth	Zingiberaceae	300–1,500 m	Probably originating in tropical Asia; extensively cultivated throughout India and worldwide	Aromatic perennial herb with thick branched rhizome, lanceolate leaves and spike inflorescence	Rhizome used as spice and pickle rather than a leafy vegetable

Conclusion

The present study documents the rich ethnobotanical knowledge of wild plants used as vegetables by the communities inhabiting the mountainous Pir Panjal region and adjoining areas. A total of 68 plant species were identified as having dietary and/or medicinal significance, demonstrating the important role of wild plant resources in local food traditions and traditional healthcare practices. Several species are traditionally collected and consumed as vegetables, including *Lamium amplexicaule*, *Lathyrus aphaca*, *Lathyrus sativus*, *Malva parviflora*, *Medicago lupulina*, *Phytolacca acinosa*, *Plantago major*, and *Pteridium aquilinum*. The study also highlights that some recorded species are primarily cultivated plants, reflecting the close relationship between wild and cultivated plant resources in local dietary practices.

The documented knowledge represents an important component of the cultural heritage of the Pir Panjal communities; however, it may be vulnerable to erosion due to changing

lifestyles, reduced dependence on traditional foods, and unsustainable collection. Therefore, further research is needed to evaluate the nutritional composition, phytochemical properties, pharmacological potential, and safety of these traditionally consumed plants. At the same time, sustainable harvesting practices, conservation measures, and community-based management should be promoted to ensure the long-term availability of these valuable plant resources. The findings provide a useful baseline for future ethnobotanical, nutritional, pharmacological, and conservation studies of wild edible plants in the Pir Panjal region

ACKNOWLEDGEMENTS

Thanks are due to Head, Department of Botany, University of Jammu, and Principal Govt. Degree College, Mendhar, Surankote for providing laboratory facilities during the course of this study and to Department of

Higher Education, Jammu and Kashmir for financial support.

REFERENCES

- Acharya, R., & Acharya, K. P. (2009). Ethnobotanical study of medicinal plants used by Tharu community of Parroha VDC, Rupandehi district, Nepal. *Scientific World*, 9, 81–85.
- Bajracharya, M. B. (1979). Ayurvedic medicinal plants and general treatment. Piyusavarsi Ausadhalaya Mahaboudha, Kathmandu, Nepal.
- Banerji, M. L. (1955). Some edible and medicinal plants from east Nepal. *Journal of Bombay Natural History Society*, 35, 153–155.
- Baral, S. R., & Kurmi, P. P. (2006). A compendium of medicinal plants in Nepal. Kathmandu, Nepal.
- Bhattarai, N. K. (1989). Traditional phytotherapy among the Sherpas of Helambu, central Nepal. *Journal of Ethnopharmacology*, 27, 45–54.
- Bhattarai, N. K. (1990). Herbal folk medicines of Kabhrepalanchok district, central Nepal. *International Journal of Crude Drug Research*, 28(3), 225–231.
- Bhattarai, N. K. (1991). Folk herbal medicines of Makawanpur district, Nepal. *International Journal of Pharmacognosy*, 29(4), 284–295.
- Bhattarai, N. K. (1992). Medical ethnobotany in the Karnali zone, Nepal. *Economic Botany*, 46(3), 257–261.
- Bhattarai, N. K. (1993). Folk herbal medicines of Dolkha district, Nepal. *Fitoterapia*, 64(5), 387–395.
- Bhattarai, S., Chaudhary, R. P., & Taylor, R. S. L. (2009). Ethnomedicinal plants used by the people of Nawalparasi district, central Nepal. *Our Nature*, 7, 82–99.
- Bussmann, R. W., & Sharon, D. (2006). Traditional medicinal plant use in northern Peru: Tracking two thousand years of healing culture. *Journal of Ethnobiology and Ethnomedicine*, 2, 47.
- Bussmann, R. W., Gilbr[e]ath, G. G., Solio, J., Lutura, M., Latuluo, R., Kunguru, K., Wood, N., & Mathenge, S. G. (2006). Plant use of the Maasai of Sekenani Valley, Maasai Mara, Kenya. *Journal of Ethnobiology and Ethnomedicine*, 2, 22.
- Cavender, A. (2006). Folk medicinal uses of plant foods in southern Appalachia, United States. *Journal of Ethnopharmacology*, 108, 74–84.
- CBS. (2002). Population of Nepal: Village Development Committees/Municipalities' population census 2001. Ramshah Path, Thapathali, Kathmandu, Nepal.
- Coburn, B. (1984). Some native medicinal plants of the western Gurung. *Kailash*, XI(1–2), 55–88.
- Devaraj, T. L. (1998). Ayurvedic remedies for common diseases. Sterling Publishers (P) Ltd., New Delhi, India.
- Dhami, N. (2008). Ethnomedicinal uses of plants in western terai of Nepal: A case study of Dekhatbhuli VDC of Kanchanpur district. In P. K. Jha, S. B. Karmacharya, M. K. Chettry, C. B. Thapa, & B. B. Shrestha (Eds.), *Medicinal plants in Nepal: An anthology of contemporary research* (pp. 165–177).

- Ecological Society of Nepal (ECOS), Kathmandu.
- District Profile. (2007). District Development Committee, Rupandehi, Lumbini Zone, Nepal.
- Dobremez, J. F. (1976). Exploitation and prospects of medicinal plants in eastern Nepal. In Mountain environment and development. Swiss Association for Technical Assistance in Nepal, Kathmandu.
- Gurung, L. J., Rajbhandary, S., & Ranjitkar, S. (2008). Indigenous knowledge on medicinal plants in mid hills of Nepal: A case study of Sikles area of Kaski district. Ecological Society of Nepal (ECOS), Kathmandu, 153–164.
- Hara, H., & Williams, L. H. J. (1979). An enumeration of the flowering plants of Nepal. Vol. 2. British Museum (Natural History), London, UK.
- Hara, H., Chater, A. O., & Williams, L. H. J. (1982). An enumeration of the flowering plants of Nepal. Vol. 3. British Museum (Natural History), London, UK.
- Hara, H., Stearn, W. T., & Williams, L. H. J. (1978). An enumeration of the flowering plants of Nepal. Vol. 1. British Museum (Natural History), London, UK.
- IUCN. (2004). National register of medicinal and aromatic plants (revised and updated).
- Joshi, A. R., & Joshi, K. (2000). Indigenous knowledge and uses of medicinal plants by local communities of the Kali Gandaki watershed area, Nepal. Journal of Ethnopharmacology, 73, 175–183.
- Joshi, A. R., & Edington, J. M. (1990). The use of medicinal plants by two village communities in the Central Development Region of Nepal. Economic Botany, 44(1), 71–83.
- Joshi, K. R. (2008). Ethnomedicinal uses of plants: A case study of Sharmol VDC, Darchula District, Nepal. In Medicinal plants in Nepal: An anthology of contemporary research (pp. 177–186).
- Joshi, K., Joshi, R., & Joshi, A. R. (2011). Indigenous knowledge and uses of medicinal plants in Machhegaun, Nepal. Indian Journal of Traditional Knowledge, 10, 281–286.
- Kunwar, R. M., Nepal, B. K., Kshhetri, H. B., Rai, S. K., & Bussmann, R. W. (2006). Ethnomedicine in Himalaya: A case study from Dolpa, Humla, Jumla, and Mustang districts of Nepal. Journal of Ethnobiology and Ethnomedicine, 2, 27.
- Malla, B., & Chhetri, R. B. (2009). Indigenous knowledge on ethnobotanical plants of Kavrepalanchowk district. Kathmandu University Journal of Science, Engineering, and Technology, 5, 96–109.
- Manandhar, N. P. (1982). Wild edible plants of Nepal. Bulletin of the Department of Medicinal Plants, No. 11. Thapathali, Kathmandu, Nepal.
- Manandhar, N. P. (1989). Useful wild plants of Nepal. Nepal Research Centre Publications No. 14. Steiner, Stuttgart, Germany.
- Manandhar, N. P. (1993). Herbal remedies of Surkhet district, Nepal. Fitoterapia, 64(3), 265–272.

- Manandhar, N. P. (2002). Plants and people of Nepal. Timber Press, Portland, Oregon, USA.
- Mueller-Boeker, U. (1993). Ethnobotanical studies among the Chitwan Tharus. *Journal of Nepal Research Centre*, 9, 17–56.
- Pandey, B. D. (1964). The wealth of medicinal plants of Nepal. Peking Symposium, China, pp. 183–140.
- Pandey, H. P. (2008). *Economic Botany*. Silver Line Publications, Faridabad, India.
- Panthi, M. P., & Chaudhary, R. P. (2003). Ethnomedicinal plant resources of Arghakhanchi District, West Nepal. *Journal of Ethnobotany*, 15, 71–86.
- Pieroni, A., Houlihan, L., Ansari, N., Husain, B., & Astam, S. (2007). Medicinal perception of vegetables traditionally consumed by South-Asian migrants living in Bradford, northern England. *Journal of Ethnopharmacology*, 113, 100–110.
- Pohle, P. (1990). *Useful plants of Manang district*. Franz Steiner Verlag Wiesbaden GmbH, Stuttgart, Germany.
- Polunin, O., & Stainton, A. (1984). *Flowers of the Himalayas*. Oxford University Press, New Delhi, India.
- Poudyal, K. N. (2001). *Jadibuti Bigyan*. Smt. Mina Poudel, Shankar Nagar-3, Rupandehi, Nepal.
- Prescott-Allen, O. C., & Prescott-Allen, R. (1990). How many plants feed the world? *Conservation Biology*, 4, 365–374.
- Scherrer, A. M., Motti, R., & Weckerle, C. S. (2005). Traditional plant use in the areas of Monte Vesole and Ascea, Cilento National Park (Campania, southern Italy). *Journal of Ethnopharmacology*, 97, 129–143.
- Sharma, O. P. (1999). *Plant Taxonomy*. Tata McGraw-Hill Publishing Company Limited, New Delhi, India.
- Shrestha, I., & Pradhan, N. (1986). Medicinal plants of Chobhar village of Kathmandu district, Nepal. *Journal of Natural History Museum*, 10(1–4), 65–72.
- Shrestha, P. (1985). Contribution to the ethnobotany of the Palpa areas. *Contributions to Nepalese Studies*, 12(23), 63–74.
- Singh, A. G., Poudel, K. N., & Tewari, D. D. (2011). Diversity of cultivated and wild medicinal plants used by the people of Devdaha VDC of Rupandehi district, west Nepal. *Current Botany*, 2(2), 34–42.
- Stainton, A. (1988). *Flowers of the Himalaya: A supplement*. Oxford University Press, New Delhi, India.
- Uprety, Y., Boon, E. K., Poudel, R. C., Shrestha, K. K., Rajbhandary, S., Ahenkan, A., & Tiwari, N. N. (2010). Non-timber forest products in Bardiya district of Nepal: Indigenous use, trade, and conservation. *Journal of Human Ecology*, 30(3), 143–158.
- Bussmann RW, Zambrana NYP, Sikharulidze S, Kikvidze Z, Kikodze D, Tchelidze D, Khutsishvili M, Batsatsashvili K, Hart RE (2016) A comparative ethnobotany of Khevsureti, Samtskhe-Javakheti, Tusheti, Svaneti, and Racha-Lechkhumi, Republic of Georgia (Sakartvelo), Caucasus. *J Ethnobiol Ethnomed* 12(1):43

Bhatia H, Sharma YP, Manhas RK, Kumar K (2016a) Traditionally used wild edible plants of district

Udhampur, J&K India. J Ethnobiol Ethnomed 12(1):16

Bhatia H, Sharma YP, Manhas R, Kumar K (2016b) Traditionally used wild edible plants of district

Udhampur, J&K, India. J Ethnobiol Ethnomed 14(1):1. <https://doi.org/10.1186/s13002-018-0272-1>

Cheng Z, Xiaoping L, Fengke L, Abid N, Chunlin L (2022) Ethnobotanical study on wild edible plants used by Dulong people in northwestern Yunnan, China. J Ethnobiol Ethnomed 18:3