



# JOURNAL OF BIODIVERSITY AND CONSERVATION

## Ethnobotanical Aspects of Plant Diversity Along Wetlands of Ghumarwin, District Bilaspur, (Himachal Pradesh)

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### ARTICLE INFO

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#### Article History

Received: 27 July 2022

Keywords: *Ailments, Local communities, Plant diversity*

Received in revised form: 30 October 2022

Accepted: 27 November 2022

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### ABSTRACT

*The present study deals with the documentation of the traditional use of medicinal and aromatic plants used for different purposes by the inhabitants residing near the wetlands of Ghumarwin Tehsil of District Bilaspur (Himachal Pradesh). The ethnic people living near these wetlands used plants to cure many illnesses. A large number of plants and plant parts are used to cure various ailments of human and livestock by the local people. There are some angiosperm herbs that are found in common along the banks of wetlands of Ghumarwin such as *Achyranthes aspera* L., *Acorus calamus* L., *Ajuga bracteosa* Wall. ex Benth., *Artemisia indica* Waldst. & Kit., *Barleria cristata* L., *Bacopa monnieri* (L.) Pennell, *Bryophyllum calycinum* Salisb., *Cannabis sativa* L., *Centella asiatica* L., *Cissampelos pareira* L., *Costus speciosus* Sm., *Chenopodium ambrosioides* L., *Eriophorum comosum* Wall., *Hedera helix* Clarke, *Ipomoea carnea* Facq., *Plumbago zylanica* L., *Spilanthes paniculata* Wallich ex DC., *Urtica dioica* L., and *Xanthium strumarium* L. The highest number of ethnomedicinal plants was recorded from the family Fabaceae (5 species) followed by Asteraceae (4 species), Amaranthaceae, Cyperaceae, and Malvaceae each (3 species), Acanthaceae (2 species), Apocynaceae (2 species), Commelinaceae (2 species), Convolvulaceae (2 species), Euphorbiaceae (2 species), Lamiaceae (2 species), Poaceae (2 species) and Verbenaceae (2 species). This study documents valuable information for traditional remedies and contributes to the usage of medicinal plants in the study areas.*

## INTRODUCTION

Wetlands are the most productive life-supporting system in the world. These are of immense socio-economic and ecological importance to mankind. This paper emphasizes on the conservation and wise use of plant diversity along wetlands. The wetland flora of the world is known through the works of Aston (1973), Ahmad and Younus (1979), and Chadde (1198). Himachal Pradesh, Devbhoomi, and land with rich biodiversity, a treasure house of traditional knowledge. It has many rare medicinal plants. The people of Shivalik region are also well known for the use of traditional knowledge for the cure of different ailments. The wetlands of Ghumarwin have a rich source of plant diversity. The paper is an attempt to highlight the worth of plant diversity used to cure the different ailments by the local people from time immemorial along the wetlands of Ghumarwin, District Bilaspur, Himachal Pradesh. It is an established fact that ethnobotany (the ancient science) of human health had its origin in the state of Himachal Pradesh, the land of 'Rishies' and 'Munies'. The state has a rich diversity of plants that are being used in various ethno-botanical practices by the indigenous people since time immemorial. However, information pertaining to the documentation of indigenous knowledge and practices relating to the utilization of the plant species of the state is very meagre (Cook, 1996, Srivastava, 2003a and b; Seth, 2006).

## MATERIALS AND METHODS

**Study Area:** The wetlands of Ghumarwin Tehsil of District Bilaspur (Himachal Pradesh) are situated in the Shivalik range of the lower Himalayas. The main wetland is Seer Khad which merges with the Sutlej River. The other wetlands are tanks, bavdi, toba and small streams of the area. Most of the part of its journey covers Tehsil Ghumarwin of District Bilaspur. Many villages of Tehsil Ghumarwin are situated near the bank of Seer Khad such as Sunhani, Bhadrog, Dabla, Patta, Talwara, Bumm, Kotlu, Hatwad, Nalti and Tungri.

**Methodology:** This paper is based on the methodology outlined by Jain (1987) and herbarium sheets of the plants were made as per the known herbarium practices outlined by Jain & Rao (1977). Botanical identification of the collected species was done with the help of regional floras (Chauhan, 1999; Chowdhery & Wadhwa, 1984; Collett, 1902; Dhiman, 1976, Polunin & Stainton, 1984; Stainton, 1988) and later carefully matched with the authenticated specimens at the herbarium of Botanical Survey of India, Dehradun.

**Collection of Data:** Extensive field surveys were conducted in various villages situated near the wetlands of Ghumarwin, District Bilaspur (Himachal Pradesh) during the study period. The information pertaining to the data has been collected from the elders and knowledgeable persons who are permanent residents of different villages and making use of the plant diversity along the wetlands. Prior to the visit to research sites, a questionnaire was designed. The traditional usage of plant resources was accumulated with the questionnaire and through participatory techniques. Participants was fascinated by how people utilize plant material. The ethnomedicinal importance of the collected plants containing the information about the vernacular name of the

plants, parts used and medicinal use was recorded through detailed discussion with local people and traditional healers.

## RESULTS AND DISCUSSION

The results of the study are presented in Table 1. The genera of plant species from the study area are arranged in alphabetical order. For each species, scientific name, family, vernacular name, part used, the traditional mode of its use as edible, fodder, religious, and medicinal as well as diseases treated are provided. A total of 62 plant species in 41 families were documented for the treatment of various chronic ailments in the studied area. The local people and traditional healers were using these plants to treat various diseases of human. The highest number of ethnomedicinal plants was recorded from the families Fabaceae and Asteraceae having 5 and 4 plant species respectively. Six families namely Apiaceae, Amaranthaceae, Cyperaceae, Lamiaceae, Malvaceae, and Solanaceae contributed three plant species each. Acanthaceae, Apocynaceae, Commelinaceae, Convolvulaceae, Euphorbiaceae, Lamiaceae, Poaceae, and Verbenaceae contributed two species each. Table 2 shows that total 62 plant species under 60 genera belonging to 41 families have been found to be common in use in the study area for different purposes. Figure 1 Histogram showing that there are 62 species (47 dicots, 11 monocots, 3 pteridophytes, 1 bryophyte) employed for medicinal and other purposes. All the delineated species hold great potential for overall exploration for the welfare of mankind.

**Table 1: Plant diversity along Seer Khad area (Ghumarwin)**

Name of plant	Family	Local name	Parts Used	Folk Use/s
<i>Abelmoschus crinitus</i> Wall.	Malvaceae	Beuli	Root	Root paste used in empty stomach in stomach ache
<i>Abrus precatorius</i> L.	Fabaceae	Raten	Seed	Seed paste used in joint pains
<i>Abutilon indicum</i> L. Sweet	Malvaceae	Jangli bhindi	Leaves	Paste of leaves used in burns
<i>Acacia catechu</i> (L.f.) Willd	Fabaceae	Khair	Bark	Bark chewed in mouth sores
<i>Achyranthes aspera</i> L.	Amaranthaceae	Puthkanda	Stem	Stem twigs used to clean teeth
<i>Acorus calamus</i> L.	Araceae	Barae	Roots	Poultice of dried roots used in joint pains
<i>Adhatoda vesica</i> Nees	Acanthaceae	Bassuty	Leaves	Leaves used in joint pains

<i>Adiantum capillus-veneris</i> L. f.	Adiantaceae	Vikrantaa	Stem	Stem used as ornament in ear and nose
<i>Aerva sanguinolenta</i> (L.) Blume	Amaranthaceae	Sufed-phulia	Roots	Poultice of roots used in joint pains
<i>Ageratum conyzoides</i> L.	Asteraceae	Ukal Booty	Leaves	Poultice of leaves used in swelling of foot
<i>Ajuga bracteosa</i> Wall. ex Benth.	Lamiaceae	Neelkanthi	Leaves	Decoction of leaves used in empty stomach to expel worm
<i>Amaranthus viridis</i> L.	Amaranthaceae	Cholai	Leaves	Leaves used in chutney
<i>Argemone mexicana</i> L.	Papaveraceae	Chooly	Leaves	Paste of leaves used in headache
<i>Artemisia indica</i> Waldst. & Kit.	Asteraceae	Charmaar	Leaves	Paste of leaves used for headache
<i>Asparagus officinalis</i> L.	Liliaceae	Sansapai	Roots	Paste of roots used in joint pains
<i>Bacopa monnieri</i> (L.) Pennell	Scrophulariaceae	Jalnema	Whole Plant	Paste of whole plant used in headache
<i>Barleria cristata</i> L.	Acanthaceae	Morni	Leaves	Leaf paste applied on boils and burns
<i>Bauhinia variegata</i> L.	Fabaceae	Karyala	Flower	Fresh flowers used as vegetable
<i>Bombax ceiba</i> L.	Malvaceae	Simbal	Wood	Wood used in making house roofs
<i>Bryophyllum calycinum</i> Salisb.	Crassulaceae	Patharchatta	Leaves	Raw leaves help to remove kidney stones
<i>Cannabis sativa</i> L.	Cannabinaceae	Bhang	Leaves	Leaves used in offerings to lord Shiva
<i>Cardiospermum halicacobum</i> L.	Sapindaceae	Fuka	Whole Plant	Paste of plant used for curing body swelling
<i>Cassia occidentalis</i> L.	Fabaceae	Badi-aeluan	Leaves, Seeds	Fresh leaves and raw seeds used in chutney
<i>Centella asiatica</i> L.	Apiaceae	Brahmi	Leaves	Raw leaves chewed to cure mouth sores

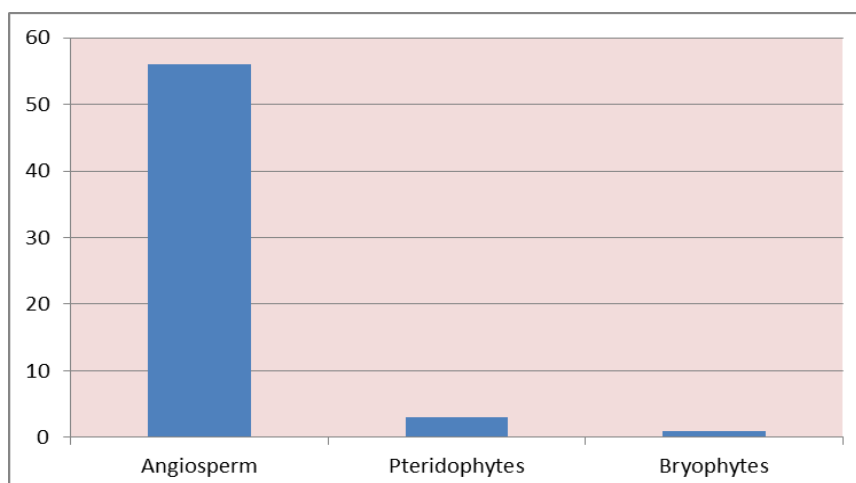
<i>Chenopodium ambrosioides</i> L.	Chenopodiaceae	Bathu	Leaves	Leaves used as a vegetable
<i>Cissampelos pareira</i> L.	Menispermaceae	Bhatindu	Root	Root paste applied externally in insect bite
<i>Coix lachryma - jobi</i> L.	Poaceae	Bajayanti mala	Seed	Seeds used as ornaments
<i>Commelina diffusa</i> Burm. f.	Commelinaceae	Kapala	Leave	Leaves used as fodder
<i>Commelina paludosa</i> Burm.	Commelinaceae	Chura	Leave	Leaves used as fodder
<i>Convolvulus arvensis</i> L.	Convolvulaceae	Dudhua-bel	Leave	Leaves used in reliving body ache
<i>Costus speciosus</i> Sm.	Zingiberaceae	Kedae – ki – challi	Root	Root paste used to heal burns
<i>Cymbopogon citratus</i> Stapf	Poaceae	Makoda Ghas	Stem	Stem used to make brooms
<i>Cyperus iria</i> L.	Cyperaceae	Doob	Root	Roots used in dysentery
<i>Cyperus rotundus</i> L.	Cyperaceae	Motha	Whole Plant	Whole plant used in bowel complaints
<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	Fruit	Fruit	Fruit powder with milk orally taken for one month in an empty stomach in constipation
<i>Equisetum arvense</i> L.	Equisetaceae	Brahmgund	Whole Plant	Decoction of plant used for nasal polypus
<i>Eriophorum comosum</i> Wall.	Cyperaceae	Bagad	Stem	Stem used in making ropes
<i>Fagopyrum esculentum</i> (Linn.) Moench.	Polygonaceae	Kangani	Roots	Decoction of roots used for pain
<i>Ficus religiosa</i> Linn.	Moraceae	Peepal	Bark	Bark oil used in pain
<i>Hedera helix</i> Auct	Araliaceae	Dakari	Leaves	Powdered leave of climber used for gastric

(non L.) Clarke				disorders
<i>Hydrilla verticillata</i> (L.f.) Royle	Hydrocharitaceae	Jala	Whole plant	Plant used as food for fish
<i>Ichnocarpus frutescence</i> (Linn.) R.Br.	Apocynaceae	Bagad	Whole Plant	Whole plant used against joint pain
<i>Ipomoea carnea</i> Facq.	Convolvulaceae	Jablota	Whole Plant	Plant milk used as gum
<i>Lantana camara</i> L.	Verbenaceae	Ujadu	Stem	Stems used in toothache
<i>Mangifera indica</i> Linn.	Anacardiaceae	Aamb	Seed	Cotyledon powder taken orally in empty stomach for diabetes
<i>Marchantia palmata</i> Nees	Marchantiaceae	Matakain	Leave	Paste of leaves used in burns
<i>Marsilea minuta</i> L.	Marsileaceae	Tripatre	Leaves	Leaves cooked as a vegetable
<i>Medicago denticulata</i> Willd.	Fabaceae	Khokani	Leaves	Plant leaves used as fodder
<i>Murraya koenigii</i> (Linn.) Spreng.	Rutaceae	Gandhelu	Leaf, Stem	Decoction of leaves and stems used to cure joint pain
<i>Nasturtium officinale</i> R. Br.	Brassicaceae	Chuch	Leaves	Leaves used as vegetable
<i>Nerium indicum</i> Mill.	Apocynaceae	Kaner	Flowers	Flowers used in the worship of lord Shiva
<i>Oxalis corniculata</i> L.	Oxalidaceae	Malora	Leaves	Leaves used as vegetables
<i>Plumbago zylanica</i> L.	Plumbaginaceae	Cheeta	Stem	Stem used to clean teeth
<i>Ricinus communis</i> L.	Euphorbiaceae	Arand	Seed	Paste of seeds used for hair growth
<i>Roylea cinerea</i> Baill.	Lamiaceae	Kadvya	Leaves	Paste of leaves used to cure insect bites

<i>Rubus ellipticus</i> Sm.	Rosaceae	Akhae	Fruits	Fruits are edible
<i>Salix oxycarpa</i> Anders.	Salicaceae	Beeiuns	Bark	Bark used in mouth sores
<i>Solanum nigrum</i> L.	Solanaceae	Kale kyanun	Leaves	Leaves used as a vegetable
<i>Spilanthes paniculata</i> Wallich ex DC.	Asteraceae	Akarkara	Flowers	Flowers used in toothache
<i>Urtica dioica</i> L.	Urticaceae	Kogsi	Leaves	Fresh young leaves used in chutney
<i>Vitex negundo</i> Linn.	Vervaceae	Banna	Leaf	Warmed leave tied on joints to cure pain
<i>Xanthium strumarium</i> L.	Asteraceae	Chinjadoo	Roots	Decoction of roots used in stomach ache

**Table 2: Total Number of Ethnobotanically Collected Species, Genera and Families under various Divisions**

Sl. No.	Divisions	Genera	Species	Families
1	Dicots	47	47	41
2	Monocots	9	11	6
3	Bryophytes	1	1	1
4	Pteridophytes	3	3	3



**Figure 1: Histogram showing various divisions of ethnobotanically used plants.**

## CONCLUSION

The modern system of medical treatment has become a costly affair beyond the reach of low economy-class people living in tribal areas. In contrast, the traditional system of medicine has played a pivotal role in providing healthcare to the people living in remote areas where modern facilities have failed to flourish. Hence, it is necessity of time to explore the alterations to provide healthcare for all and that lies with the wild species of medicinal and aromatic plants. The role of ethnomedicinal plants for the welfare of humanity will be of immense value in the years to come.

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