



## Research Article

# Ethnobotanical Study of Some Important Wild Plants in Tehsil Ekkaghund, District Mohmand, Merged Areas, Pakistan

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**Abstract** | The present study of ethnobotany conducted in July- August 2023, in Tehsil Ekkaghund, District Mohmand, Merged Areas, Pakistan, which aimed at exploring the traditional knowledge and utilization of medicinal plants by the local communities. Data was collected through questionnaire and interviews with local members of community who possessed knowledge about medicinal plants. Information was gathered in the local language (Pashto) and covered various aspects, including plant names, parts used, traditional applications, and availability. A total of 44 plant species were collected to find their ethnobotanical status which belongs to 29 families from study area, being used traditionally for various daily requirements. Among them the Asteraceae and Apocynaceae were dominant families having 6 species (13.6%) and 4 species (9%) respectively followed by Solanaceae and Lamiaceae containing 3 species (6.8%) and Zygophyllaceae, Euphorbiaceae, Fabaceae having 2 species each (4.5 %). Rest of families represented by one species each. Maximum plant species were used for Diabetes/sugar control (13 species 29.5%) followed by Fever/malaria (14 species 31.8%), forage (13 species 29.5%). Vermifuge (11 species 25%), Skin problems (9 species 20.4 %), Laxative/purgative (9 species 20.4%), Cough/dry cough (10 species 22.7%), Stomach problems (7 species 15.9%), Diuretic (8 species 18.1%), Anti inflammation (6 species 13.6%), Body pain and Abdominal pain (4 species 9.0 %). 11 species 25% were also used as a food. 18.1% species were used as a fuel and 22% species were used for other uses. Rest of specie identified were less used. The common plant parts used for the different ethnobotanical purposes were leaves (31 species 70.4%), followed by seed (21 species 47.7%), fruit and stem (7 species 16%), gum/latex (4 species 9.0%) and root (3 species 7%). Additionally, some plants were used for non-medicinal purposes such as forage, fuel, and food. The documentation of these practices can help in conserving plant biodiversity, promoting sustainable resource management, rehabilitation of degraded habitats of plants to give more yields for future generation.

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**Keywords** | Ethno-Botany, Laxative, Degraded, Biodiversity, Conservation, Medicinal



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## Introduction

The term ethno-botany is derived from the terms ethno and botany, which respectively imply the

study of people and the study of plants. It illustrates the positive interaction between tribal people and wild plants (trees, shrubs, and herbs). Ethno-biology has a branch called ethnobotany. Ethnobotany investigates

all available data on plants and their therapeutic use. Humans use wild plants in a variety of ways to suit their fundamental needs, including those for food, clothing, and shelter. For the treatment of both internal and exterior disorders, plants are employed as medicine. In rural places, wild plants provide a source of revenue and employment (Kokwaro, 1976, 2009; Olembo *et al.*, 1995; Pulu, 2003).

The word ethnobotany was first used by American taxonomist Harshberger (1895). He defined ethnobotany as “the study of the utilitarian interaction between humans and the plants in their environment,” which includes botanical applications. Locals in a given area research plants for their historical medicinal use. It investigates the organic connection between local communities and indigenous flora (Kumar *et al.* 2022).

#### *Description of location*

Ethnobotanical survey is carried out in village Halki Gandao, Tehsil Ykka Ghund, lower District Mohmand from July to August 2023. District Mohmand is a part of Merged Areas (Ex. FATA) of Pakistan and was established in 1951. The whole FATA has been merged in Khyber Pakhtunkhwa (KP) Province in 2018. District Mohmand is bordered by District Bajaur to the North East, Khyber to the South, Malakand and Charsadda districts to the East, Peshawar district to the Southeast and Afghanistan to the West. District Mohmand takes its name from the Mohmand tribe living in the area. It is divided into 7 tehsils namely Safi, Ambar, Baizai, Hawaizai, Halimzai, Pindiali and Tehsil Ykka Ghund. 2296 km<sup>2</sup> is the total area, and the Ghalanai area is where the headquarter is located. Geographically, the region is made up of rough mountains with desolate slopes that are dispersed along the banks of the Kabul River (Aziz *et al.*, 2018). It is located between latitudes 34, 10° and 34, 43° N and between longitudes 70, 58° and 71, 42° E (Zeb *et al.*, 2017).

#### *Objectives*

To Explore important wild plant species of Tehsil Ykka Ghund, district Mohmand (Ex. FATA).

- To enlist the traditional uses and applications of some important wild plant species.
- To collect the information about rare and important wild plant species of Ykka Ghund for further research

## Materials and Methods

#### *Study area*

Rich natural vegetation may be found in District Mohmand. The majority of it consists of plants and herbs with important therapeutic uses (Ali *et al.*, 2016). It has short winter and long dry summer therefore it cannot sustain prolonged growth of plants but contain a lot of medicinally important plant species.

#### *Data collection*

Ethno-medicinal data and information was taken from July to August 2023. The information was collected from local people which had specific knowledge of medicinal plants and information on the ethno-medicinal uses of plants through semi structured interviews (Aziz *et al.*, 2018) and close ended questionnaire (MH, 2017). The interviews of 25 respondents were conducted through group discussion as well as face-to-face with individual participants. Priority was given specially to elder people who were native/local and had more knowledge about the uses of local indigenous plants for different purposes. They were briefed on the objectives of the work and the consent of each participant was obtained. Ethics of the International Society of Ethnobiology was followed. All interviews were taken in local language (Pushto) of the communities. The data about local names of plants, parts used, availability, route of administration of plants and uses for different diseases were recorded. Beside this entire field work secondary data was also revived in order to authenticate the research study (Kichu *et al.*, 2015; Zeb *et al.*, 2017). The data and information was also obtained from various departments like Non Timber Forest Produce (NTFP), Forest and Agriculture departments.

## Results and Discussion

The survey was conducted in order to determine the different use of wild plants for different purposes which have direct influence on human health and their life. Various wild plants mostly medicinally important plants are investigated with data regarding their botanical name, local name, family and their indigenous use.

The ethnobotanical study conducted in Tehsil Yakka Ghund, District Mohmand, has provided significant insights into the indigenous knowledge and applications of wild plants. This study has highlighted

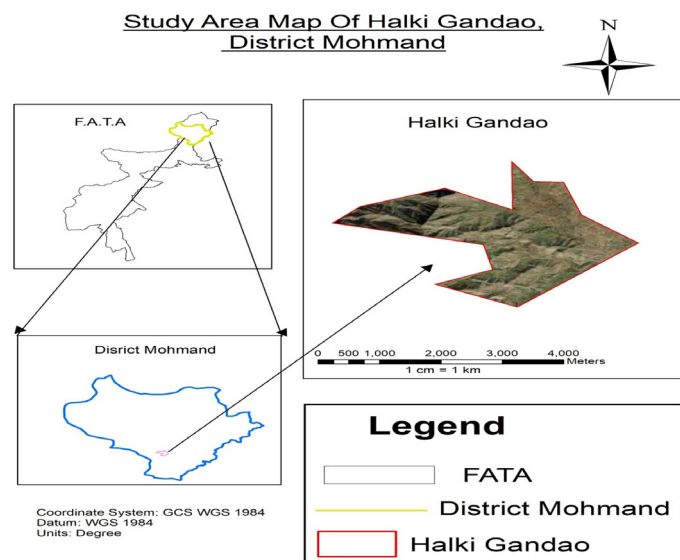
**Table 1:** Plants distribution according to their indigenous uses.

| S.No | Botanical name                             | Family name    | Local name            | Part use                               | Indigenous use                                                                                                                                                |
|------|--------------------------------------------|----------------|-----------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | <i>Citrullus colocynthis</i> (L.) Schrad   | Cucurbitaceae  | Kakora                | Seed Pod, Leaves                       | Abdominal pain, Dysentery, Indigestion. Treatment and Control of diabetes. Removal of Abdominal worms (Anthelmintic)                                          |
| 2    | <i>Periploca appylla</i>                   | Apocynaceae    | Barrara               | Whole plant except roots. White latex. | White latex is chewed for appetite stimulant, Anti-inflammation.                                                                                              |
| 3    | <i>Rhazya stricta</i> Dece.                | Apocynaceae    | Gandiarai             | Leavs, Seed                            | Wound healing (leaves powder). Treatment of inflammation, Leaves are used for arthritis, Acne treatment                                                       |
| 4    | <i>Tribulus terrestris</i>                 | Zygophyllaceae | Markondy              | Whole plant, root and seed             | Chest pain relief (whole plant extract), Treatment of skin disorders Removal of kidney stone, Animals forage.                                                 |
| 5    | <i>Fagonia cretica</i>                     | Zygophyllaceae | Azghakay/ Shenazghay  | Leaves branches                        | Plant extract is diaphoretic .Internal wound healing (stomach ulcer).Headache relief. Anti-rheumatic.                                                         |
| 6    | <i>Calatropis procera</i>                  | Apocynaceae    | Spalmay               | Dry leaves, White latex, Bark powder   | Diabetes treatment, Diaphoretic (produce perspiration) Tooth ache relief. Healing burn wounds, Anti poison, snake bite etc.                                   |
| 7    | <i>Caralluma tuberculata</i> N. E. Br.     | Apocynaceae    | Pamanky               | Whole plant except roots               | Removal of intestinal parasite. Anti allergic. Treatment of pain in joints. Leprosy. Treatment of ear inflammation.                                           |
| 8    | <i>Launaea nudicaulis</i> (L.) Hook. f.    | Asteraceae     | Shodapai              | Leaves Milky latex                     | Dry leaves are used for fever treatment. Skin itching (extract). Swelling, Animal forage                                                                      |
| 9    | <i>Plantago ovata</i>                      | Plantaginaceae | Ispaghool             | Fresh leaves, Dry leaves seed          | Treatment of dry cough. Diarrhea (seed taken with water or curd). Dysentery, Used as laxative (fibber). Used as a purgative.                                  |
| 10   | <i>Euphorbia helioscopia</i> L.            | Euphorbiaceae  | Mandaro               | Whole plant except roots               | Treatment of skin rashes, Antiparasitic.                                                                                                                      |
| 11   | <i>Convolvulus arvensis</i> L.             | Convolvulaceae | Zangalee prewatay     | Leaves Branches                        | Dry leaves powder used for fever (Tea is made) Laxative. Animal forage.                                                                                       |
| 12   | <i>Mentha longifolia</i> L.                | Lamiaceae      | Ilana                 | Leaves branches-seeds                  | Dry powder used for indigestion. Nausea, Fever, Cough treatment. Stomach burning.                                                                             |
| 13   | <i>Solanum nigrum</i> L.                   | Solanaceae     | Kachmaco              | Leaves (boiled) Whole plant            | Increase appetite, Treatment of mild fever, Rates bites, Used as a food (saag).                                                                               |
| 14   | <i>Malva neglecta</i> Wallr.               | Malvaceae      | Pandirak              | Whole plant except roots               | Produce urine (diuretics). Kidney stone removal, Dry cough & bronchitis treatment.                                                                            |
| 15   | <i>Ficus carica</i> L.                     | Moraceae       | Inzar                 | Fruits leaves, branches, stem          | Help and increase; digestion, Laxative, Purgative, Treatment of cough, treatment of sore throat                                                               |
| 16   | <i>Heliotropium europaeum</i> L.           | Boraginaceae   | Lengatay              | Seeds Leaves                           | Removal of parasite (Anthelmintics), Treatment of warts (stagg), Used as a fuel.                                                                              |
| 17   | <i>Withania coagulans</i>                  | Solanaceae     | Khamazoy              | Dry leaves, seeds                      | Abdominal pain, Treatment of Gastrointestinal disorders.                                                                                                      |
| 18   | <i>Melia azedarach</i> L.                  | Meliaceae      | Bakyrna/ Shandai      | Leaves, seeds, stem                    | Treatment of Abdominal pain. (Seeds), laxative, Anthelmintic. Forage, Fuel.                                                                                   |
| 19   | <i>Silybum marianum</i> L.                 | Asteraceae     | Ghanamo azghay        | Leaves, seeds                          | Treatment of HCV_1 (plant extract), Sugar control, Removal of kidney stone, Anti poison.                                                                      |
| 20   | <i>Chrozophora tinctoria</i> (L.) A. Juss. | Euphorbiaceae  | Sperkay               | Seed, leaves                           | Plant paste is used to cure mouth ulcer. Anthelmintic, Used as a fuel.                                                                                        |
| 21   | <i>Oxalis corniculata</i> L.               | Oxalidaceae    | Karghee mewa/ Tarokay | Whole plant except roots               | Treatment of fever and dry cough (Plant juice), Treatment of urinary track problems, Treatment of dry skin eruption Emollient; having a moisturizing effect). |

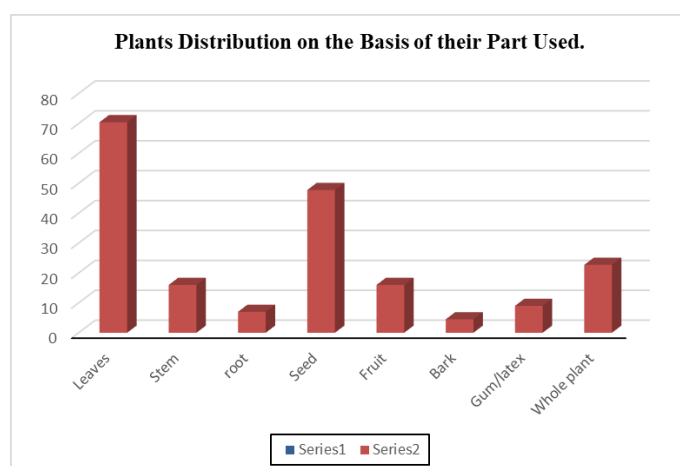
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| S. No | Botanical name                               | Family name   | Local name      | Part use                       | Indigenous use                                                                                                                                          |
|-------|----------------------------------------------|---------------|-----------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22    | <i>Cannabis sativa</i> L.                    | Cannabaceae   | Zangali bang    | Whole plant except roots       | Headache relief, Cough treatment                                                                                                                        |
| 23    | <i>Solanum surattense</i> Burm. f.           | Solanaceae    | Maraghony       | Leaves, seeds (fruit)          | Very bitter and used for sugar control, Fruits are used as a laxative, Plant paste is Anthelmintic, Animal forage (Camel).                              |
| 24    | <i>Fumaria indica</i>                        | Papaveraceae  | Spena gaya      | Whole plant                    | Fever/malaria, Anthelmintic, Diaphoretic, Forage, Diuretic                                                                                              |
| 25    | <i>Dodonaea viscosa</i> (L.) Jacq.           | Sapindaceae   | Ghworasy        | Seed, leaves, stem             | Seed are used for treatment of indigestion, Leaves extract and dry leaves powder are used for fever control and malaria, fuelwood                       |
| 26    | <i>Olea ferruginea</i> Wall. ex Aitch.       | Oleaceae      | Zaiton/hona     | Seed, leaves, stem             | Olive oil massage is used in physiotherapy of joint inflammation and swelling, Analgesic, Used for cough relief, Edible seeds oil, Used as a fuel wood. |
| 27    | <i>Capparis decidua</i> (Forssk.) Edgew.     | Capparaceae   | Kerra           | Seed (berries). Bark           | Bark powder is used for control of blood sugar, Cough treatment, Berries are edible.                                                                    |
| 28    | <i>Galium aparine</i> L.                     | Rubiaceae     | Ghanamo galakay | Whole plant except roots       | Leaves extract are used for urinary tract infection, Forage for cattle.                                                                                 |
| 29    | <i>Nannorrhops ritchiana</i> (Griff.) Aitch. | Arecaceae     | Maizary         | Leaves                         | Used for making, Ropes, Hot spots, Salt pot, Bread pots, Mats, Baskets, Fuel                                                                            |
| 30    | <i>Taraxacum officinale</i> L.               | Asteraceae    | Zairgullay      | Whole plant                    | Used for treatment of Renal disorders (root powder are used). Leaves are used as diuretic.                                                              |
| 31    | <i>Acacia modesta</i> Wall.                  | Fabaceae      | Palosa          | Fruits, leaves, branches, stem | Fruits are edible, Gum is used for treatment of back pain, Gastric disorders, Stomach problems, honey production                                        |
| 32    | <i>Stachys parviflora</i> Benth.             | Lamiaceae     | Speraghonay     | Leaves, seed                   | Sugar control, Dry leaves powder is used for removal of abdominal parasite (Anthelmintic).                                                              |
| 33    | <i>Cleome brachycarpa</i> Vahl ex DC.        | Cleomaceae    | Skha botay      | Seed pod, leaves               | Leaves extract (dried) is used for treatment of Malaria, Fever, Sugar control, Insect bite anti-inflammation.                                           |
| 34    | <i>Ziziphus mauritiana</i> Lam.              | Rhamnaceae    | Berra           | Leaves, stem, fruits           | Fruits are edible and tonic. Laxative and purgative, Used as a fuel, Also used as a furniture. Tender are good forage for animals.                      |
| 35    | <i>Monothea buxifolia</i> (Falc.) A. DC.     | Sapotaceae    | Gurgura         | Fruits, leaves, stem           | Berries are edible and tonic. Diuretic, Stomach burning relief (fruits), Laxative.                                                                      |
| 36    | <i>Artemisia scoparia</i> Maxim.             | Asteraceae    | Tarkha          | Leaves, seeds                  | Diabetes control, Fever, body pain relief, Anthelmintic.                                                                                                |
| 37    | <i>Ziziphus nummularia</i> Aubrév.           | Rhamnaceae    | Karkanra        | Fruits, leaves, stem           | Fruits are edible and tonic, Diabetic control, Forage for goats, Used as a fuel wood.                                                                   |
| 38    | <i>Cymbopogon jwarancusa</i> Schult.         | Poaceae       | Sargaray        | Leaves, roots                  | Aromatic Leaves are used for treatment of cough and fever.                                                                                              |
| 39    | <i>Salvadora persica</i> L.                  | Salvadoraceae | Plevin          | Leaves, branches, roots        | Fruits are edible, Used as a fuel wood, Forage, Used for making maswak.                                                                                 |
| 40    | <i>Pistacia terebinthus</i> L.               | Anacardiaceae | Shnai           | Berries (fruits), leaves       | Berries are edible; Gum is used as sticking materials.                                                                                                  |
| 41    | <i>Conyza canadensis</i> (L.) Cronquist      | Asteraceae    | Murdar botay    | Leaves                         | Leaves extract used for bladder issues, Fever and malaria, Diarrhea, throat treatment.                                                                  |
| 42    | <i>Gleopsis tetrahit</i> L.                  | Lamiaceae     | Zagaa           | Leaves, seed                   | Treatment of cough, Relief muscle pain, Expecto-rant, Used for fresh smell.                                                                             |
| 43    | <i>Rumex dentatus</i> L.                     | Polygonaceae  | Shalkhay        | Leaves, root                   | Cooling effect (diaphoretic) Diuretic, Treatment of dysentery. Laxative and purgative.                                                                  |
| 44    | <i>Carlina libanotica</i> subsp.             | Asteraceae    | Kareza          | seed                           | Used in treatment of dysentery, lose motion.                                                                                                            |

the region's rich cultural heritage and dependence on native flora for medicinal, economic, and ecological purposes. The findings align with existing literature on ethnobotany, demonstrating the importance of wild plants in the daily lives of rural communities.



**Figure 1:** Study area map of Halki Gandao, District Mohmand.



**Figure 2:** Plants distribution on the basis of their part used.

### Ethnobotanical knowledge and its preservation

The study identified 44 plant species belonging to various families, used for treating a wide range of ailments such as abdominal pain, diabetes, inflammation, and skin disorders. This aligns with earlier research (Kokwaro, 1976; Pulu, 2003) that highlights the reliance of indigenous communities on plants for health and well-being. The transmission of such knowledge, often orally, underscores the need for its documentation and preservation, particularly as modern influences and environmental changes threaten traditional practices.

**Table 2:** Family wise species recorded.

| S.No | Family name    | Species/no |
|------|----------------|------------|
| 1    | Apocynaceae    | 04         |
| 2    | Asteraceae     | 06         |
| 3    | Cucurbitaceae  | 01         |
| 4    | Zygophyllaceae | 02         |
| 5    | Plantaginaceae | 01         |
| 6    | Euphorbiaceae  | 02         |
| 7    | Lamiaceae      | 03         |
| 8    | Convolvulaceae | 01         |
| 9    | Solanaceae     | 03         |
| 10   | Malvaceae      | 01         |
| 11   | Boraginaceae   | 01         |
| 12   | Meliaceae      | 01         |
| 13   | Oxalidaceae    | 01         |
| 14   | Cannabaceae    | 01         |
| 15   | Sapindaceae    | 01         |
| 16   | Oleaceae       | 01         |
| 17   | Capparaceae    | 01         |
| 18   | Rubiaceae      | 01         |
| 20   | Fabaceae       | 01         |
| 21   | Cleomaceae     | 01         |
| 22   | Arecaceae      | 01         |
| 23   | Rhamnaceae     | 02         |
| 24   | Sapotaceae     | 01         |
| 25   | Poaceae        | 01         |
| 26   | Salvadoraceae  | 01         |
| 27   | Polygonaceae   | 01         |
| 28   | Anacardiaceae  | 01         |
| 29   | Papaveraceae   | 01         |

Medicinal applications and pharmacological potential The medicinal uses of plants such as *Citrullus colocynthis*, *Rhazya stricta*, and *Withania coagulans* emphasize their pharmacological potential. For instance, the use of *Citrullus colocynthis* for abdominal ailments and diabetes aligns with global ethnobotanical findings, highlighting its role as an anthelmintic and anti-diabetic agent. Similarly, *Withania coagulans*, traditionally used for gastrointestinal disorders, is recognized for its anti-inflammatory and analgesic properties. These findings underscore the potential for further pharmacological investigations into these plants for drug development.

### Socio-economic and cultural importance

Beyond medicinal uses, many plants have economic and cultural significance. For example, *Nannorrhops ritchiana* is utilized for making mats, baskets, and ropes, providing a source of income for local communities.

Similarly, plants like *Ziziphus mauritiana* and *Monothecha buxifolia* offer edible fruits, which are not only a nutritional resource but also hold cultural value as local delicacies.

**Table 3:** Species distribution on the basis of their percentage use.

| S.No | Uses                   | No of Plant Spp. | Percentage |
|------|------------------------|------------------|------------|
| 1    | Laxative/purgative     | 9                | 20.4       |
| 2    | Stomach problems       | 7                | 15.9       |
| 3    | Body pain              | 4                | 9.0        |
| 4    | Diuretic               | 8                | 18.1       |
| 5    | Wound healing          | 7                | 16         |
| 6    | Constipation           | 2                | 4.54       |
| 7    | Abdominal pain         | 4                | 9.0        |
| 8    | Diarrhea               | 4                | 9.0        |
| 9    | Cough/dry cough        | 10               | 22.7       |
| 10   | Fever/malaria          | 14               | 31.8       |
| 11   | Dysentery              | 7                | 16         |
| 12   | Urinary problems       | 2                | 4.54       |
| 13   | Tooth ach              | 2                | 4.54       |
| 14   | Vermifuge              | 11               | 25         |
| 15   | Diabetes/sugar control | 13               | 29.5       |
| 16   | Appetite stimulant     | 2                | 4.54       |
| 17   | Anti inflammation      | 6                | 13.6       |
| 18   | Diaphoretic            | 6                | 13.6       |
| 19   | Chest pain             | 3                | 6.8        |
| 20   | Skin problems          | 9                | 20.4       |
| 21   | Anti rheumatic         | 3                | 6.8        |
| 22   | Anti poison            | 5                | 11.3       |
| 23   | Nausea/dizziness       | 2                | 4.54       |
| 24   | Hepatitis              | 1                | 2.2        |
| 25   | Food                   | 10               | 22.7       |
| 26   | Forage                 | 12               | 27.2       |
| 27   | Fuel                   | 8                | 18.1       |
| 28   | Other uses             | 10               | 22         |

#### Conservation concerns and sustainability

The study also sheds light on conservation concerns, as several plant species are under pressure from overharvesting and habitat degradation. Rare and economically important species like *Periploca aphylla* and *Fagonia cretica* need immediate attention to ensure their sustainability. This aligns with global concerns about biodiversity loss and the need for sustainable harvesting practices.

Bridging traditional knowledge and modern science  
The integration of traditional knowledge with

scientific research offers a pathway to discovering novel therapeutic agents. Local elders, as primary custodians of ethnobotanical knowledge, have played a pivotal role in this study. Their insights provide a foundation for exploring the biochemical properties of these plants and their potential applications in modern medicine.

**Table 4:** Plants distribution on the basis of their part use.

| S. No | Part use    | No of species | Percentage |
|-------|-------------|---------------|------------|
| 1     | Leaves      | 31            | 70.4       |
| 2     | Stem        | 7             | 16         |
| 3     | root        | 3             | 7          |
| 4     | Seed        | 21            | 47.72      |
| 5     | Fruit       | 7             | 16         |
| 6     | Bark        | 2             | 4.5        |
| 7     | Gum/latex   | 4             | 9.0        |
| 8     | Whole plant | 9             | 20.45      |

#### Limitations and future research

While this study has provided valuable insights, it is limited by its short duration and small sample size. Future research could include a more extensive survey covering all tehsils of District Mohmand and employing advanced analytical techniques to validate the pharmacological properties of the documented plants. Furthermore, community-based conservation initiatives could be developed to promote sustainable use while preserving traditional knowledge.

#### Conclusions and Recommendations

The ethnobotanical study of Tehsil Yakka Ghund has highlighted the critical role of wild plants in the lives of local communities, from their medicinal uses to socio-economic contributions. By bridging the gap between traditional knowledge and modern science, this research paves the way for sustainable development, biodiversity conservation, and the discovery of new pharmaceutical agents. Efforts must continue to document, conserve, and utilize this invaluable heritage for the benefit of future generations.

#### Recommendation

- Traditional knowledge about the medicinal plants should be updated and documented in a proper way and treasured in a central library so that the information is preserved for upcoming generation.
- Medicinal plants also require conservation so

local people should be aware about the protection and sustainable uses of the medicinal plants.

- Medicinal plants are also economically important; the government should develop communities and a proper system for management of medicinal plants and their trade.
- There should be more research activities and projects for determining the germination, and growth pattern for the fast and successful establishment and reintroduction of medicinal plant species.

## Novelty Statement

This study presents a comprehensive ethnobotanical survey of the wild plants in Tehsil Ekkaghund, District Mohmand, Merged Areas, Pakistan, an area previously underexplored in terms of plant-based knowledge. By documenting traditional uses, local knowledge, and the cultural significance of these wild plants, the research bridges gaps in understanding the indigenous flora's potential for sustainable use in medicine, food, and agriculture. The findings contribute novel insights into the conservation and application of native plant species, many of which have not been studied in the context of this region. This study also highlights the evolving relationship between local communities and their environment, providing a basis for future research into the ethnobotanical and pharmacological properties of these plants.

## Author's Contribution

**Shahab Mohmand:** Data collection.

**Muhammad Farooq:** Topic selection, area selection, methodology.

**Salim Saifullah:** Software.

**Sanam Zarif:** Resources provision.

## Conflict of interest

The authors have declared no conflict of interest.

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