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FLORISTIC DIVERSITY AND ETHNOBOTANICAL USES OF WILD FLOWERING PLANTS IN TEHSIL TAXILA, DISTRICT RAWALPINDI, PAKISTAN

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Abstract

The present study was meant for the enlisting of the wild flowering plants of Tehsil Taxila located in District Rawalpindi. The study area was thoroughly visited twice a month. Moreover, ethnobotanical knowledge was collected and documented by interviewing the locals through a questionnaire. In total 78 plant species of 72 genera belonging to 35 families were reported in the study area. Among the families of the plants, only two were monocotyledonous while the remaining 33 were dicotyledonous. The monocotyledonous families were Cannaceae and Poaceae having in total 8 genera, 8 species. The dicotyledonous families included 64 genera, 70 species. A total of 36 medicinal plant species were collected, from which 6 species were found to be related to skin diseases and 10 with digestive problems. About 30 species were being used up as food while 9 plant species were used as fodder. In addition, 9 species were commercial timber producing plants. One species was found to be useful as biofuel. Most of the discussed plants species have multiple usages in medicines and have very important commercial values. This study emphasizes the need to protect traditional knowledge and offers useful guidance for regional governments in creating plans that promote environmental conservation and the sustainable use of plant resources.

Key words: Ethnobotany, Flowering plants, Commercial timber, Biofuel, Cultural significance, Rawalpindi and Pakistan

INTRODUCTION

Floristic diversity means the diversity and distribution of plants in the given geographical region. Floristic diversity plays an important role for the ecosystem as far as its stability, sustainability, and productivity are concerned. As they help to maintain pollinators, soil fertility, and various ecological relations, wild flowering plants contribute a lot to biodiversity in many ways (Mahdi, 2020). The vegetation here is very diverse in the case of Tehsil Taxila, District Rawalpindi, as it is located at the confluence of many topographic and climatic factors. It is home to many kinds of valuable wild flowering plants because of the climate of subtropical and semi-arid nature.

Ethnobotany or the study of relationships between the plant community and humans shows how indigenous cultures apply wild plants for economical, nutritional, and medical purposes. In rural parts of Pakistan, such as Tehsil Taxila, wild flowering plants serve as sources of primary health care treatment, medicinal cures, fodder, and other needs of life for the local people. However, owing to modernization,

Urbanization, and changes in lifestyle, the age-old tradition faces the threat of extinction (Amjad

et al 2020; Jan *et al*., 2020). Pakistan supports a rich assemblage of wild plant species. It is estimated that the country harbors about 6,000 species of flowering plants, of which approximately 12 % are known to be used medicinally (Aziz *et al*., 2023; Mustafa *et al*., 2025). Local communities in many parts of the country have traditionally relied on these wild plants for healthcare, food, fuel, and other needs. These ecological and cultural linkages make the documentation of plant diversity, life-forms, and traditional uses a key step in conservation and sustainable development endeavors (Heeran *et al.,* 2023).

The wild flora of flowering plants in Tehsil Taxila, District Rawalpindi, plays an important role in the livelihood of nearby villages and rural settlements. However, these wild plant communities and the traditional knowledge systems that sustain them face growing pressure from urban expansion, agricultural intensification, and changing land-use patterns. This study, therefore, aims to document the floristic diversity, that is, the range of flowering plant species, families, life-forms, and habitats, and ethnobotanical uses of those wild flowering plants in Tehsil Taxila (Aziz and Hanif, 2023).

Pakistan is a large country with great diversity in terms of climatic conditions, landscapes, and ecosystems. Similarly, there is a wide variety of plants which is very interesting. The morphology, structure, and living necessities of the plants surrounding us differ greatly (Ibrar *et al*., 2007; Mustafa *et al*., 2025). Some plants fall into naturally organized groups that belong to each kind of environment because of their distinctive needs and resilience. Plants that have similar living necessities tend to exist together wherever such conditions prevail (Mangham, 1939; Mustafa *et al*., 2023). Taxila, which is a tehsil in Punjab located in Pakistan's Rawalpindi District, is around 20 miles (32 kilometres) to the northwest of Islamabad, Pakistan's capital. Taxila, according to Ahmad *et al*. (2009), is an important archaeological site.

Taxila's altitude is 549 metres (1801 feet) above sea level. The remains of Taksaila, which was once an important centre for Buddhism and Hinduism and has been in existence from the period of Gandhara civilization, can be found here. In 1980, UNESCO named Taxila a World Heritage Site (Haq *et al*., 2011; Ramzan *et al*., 2024). Traditionally, Taxila has been a crossroads for three important routes including the northern route, the GT route, and the royal road linking Gandhara to the kingdom of Magadha (Cakilcioglu *et al*., 2010; Tefera and Kim, 2019).

There is an inadequate documentation of the floristic diversity and ethnobotanical uses of wild flowering plants in the Tehsil Taxila. Taxila has been relatively neglected since earlier studies conducted in Pakistan focused more on either floristic or ethnobotanical aspects in other areas of the country. There is also a limitation in comprehensively studying plant resources and conservation due to the lack of coordination between ecological information and indigenous knowledge.

Lack of biodiversity and the erosion of indigenous knowledge are the primary issues which make research challenging. The number of wild plants is continuously dwindling because of urbanization, over-grazing, deforestation, and climate change. Simultaneously, vital indigenous knowledge about plants is being eroded since subsequent generations do not realize the significance of ethnobotany. In their absence, there is a risk of irreversible loss of plant

variety and indigenous knowledge (Mustafa *et al.,* 2025).

The focus of this study is to study and document the floristic diversity as well as ethnobotanical uses of wild flowering plants in Tehsil Taxila. This study will be helpful to bridge the gap that exists between ecological assessment and traditional practices.

The objectives of the study area to identify and document the diversity of wild flowering plant species. Further the ethnobotanical uses of these plants among local inhabitants will be studied to highlight species of high ecological and medicinal importance.

MATERIALS AND METHODS

Study Area and Demographic Data of Informants

The present study has been conducted in two or three villages of Tehsil Taxila located in Punjab province, District Rawalpindi, Pakistan. The area has an arid climate, agricultural lands, scrub forests, and hilly areas related to Potohar plateau. The soils of the area consist of different types such as sand-loamy to clayey. The region has sub-tropical weather conditions; therefore, the summers are hot while winters are cool. The temperature during winter varies between 5 and 20 degrees Celsius whereas the summers experience a maximum temperature between 35 and 42 degrees centigrade. Most of the annual rainfall (850 – 1000 mm) is received during the monsoons. The height above sea level is between 450 to 500 meters. The people of Taxila have rich knowledge concerning the use of wild plants, particularly for household, medicinal, and fodder purposes. Cultural heritage is well preserved in the area. Traditional knowledge in the area is mainly preserved by elderly people, local doctors (Hakims), and herbal medicine men (Pansaris). (Chendurpandy *et al*. 2010; Eshete *et al*., 2016)

144 respondents for the study were obtained from various villages. The respondents were comprised of farmers, herbalists, shopkeepers, workers, and housewives. Attention was paid to old respondents because of their knowledge on ethnobotanical practice.

Interviewing the Local Inhabitants through Questionnaire

The collection of information for ethnobotany from the local community was made possible through the development of a semi-structured questionnaire. The information collected would be credible, thus interviews were carried out in a relaxed yet respectful manner. These interviews were organized and unorganized. A variety of individuals were interviewed, including collectors of fuelwood, housewives, hakeems, and pansaris. Interviews were conducted at community meeting points, homes, and farms.

The questionnaire focused on:

- Demographic information (age, gender, education, occupation)
- Local names of plants
- Parts of plants used
- Methods of preparation and administration
- Medicinal and other traditional uses

To encourage flexibility and thorough answers, both closed-ended and open-ended questions were used. Additionally, participatory methods were employed to verify the data gathered (Mustafa *et al*., 2025; Mustafa *et al*., 2023).

Plant Sample Collection and Identification

Plants were collected using the method of field survey conducted in different seasons. Standard herbarium techniques were employed during the collection, press, and preservation of plants in their natural blooming state. Flora of Pakistan and other related taxonomic literature was used to identify the collected plants. Information about each specimen such as its botanical name, family, place and time of collection, and habitat was also marked. Collected plants were confirmed and preserved as voucher specimens in GCU, Lahore herbarium. (Zarif *et al.* 2018; Haq *et al*., 2011).

RESULTS

Demographic Characteristics of the Informants

The present study conducted in Tehsil Taxila had interviews of 144 informants in the process. Among these, there were 60 females and 84 males (Table 1). Farmers, laborers, teachers, students, retailers, pansaris and hakims were some of the professional categories among the informants. Furthermore, ethnobotanical information was also found to be spread among households especially among women who used such knowledge for household treatments. Age-wise distribution among the informants varied a lot. The age group of 55-60 years included the largest number of informants (30) compared to the age groups 50-55 years and 45-50 years which comprised of 26 and 24 informants respectively. Meanwhile, the age group 20-30 years are comprised of minimum number of informants.

It can be clearly seen from the results that younger individuals possessed a little bit of ethnomedical information, while older individuals possessed more of it. This clearly shows that there is a slow process of losing indigenous knowledge by the young generation due to modernization, increased literacy, and preference towards allopathic treatment. The transmission of indigenous knowledge becomes less frequent because educated individuals prefer modern health care services.

Ethnomedicinal Floral Diversity

In this study, all the collected and recorded plants were from angiosperm plant species. In this research, a total number of 78 plant species from 72 genera and 35 families were recognized. Among these families:

- 2 families (Cannaceae and Poaceae) belonged to monocotyledons, comprising 8 species and 8 genera.
- The remaining 33 families were dicotyledonous, representing 69 species and 64 genera.

It is evident from the above domination of dicotyledonous plants that they are more adaptable and diverse in their ecology than others (Figure 1-3).

Furthermore, it was observed that there exists remarkable diversity among wild flowering plants found in Taxila in terms of morphology, distribution, and uses. Wild flowering plants have wide-ranging use in the community as medicine, fodder, and household items. Botanical names, common names, family of plants, parts used, and ethnobotanical uses were recorded. The high number of dicots is because they have more ecological adaptability and produce more bioactive compounds than monocots, thereby giving them greater medicinal importance. Monocots like Poaceae are important too, especially for forage and soil conservation purposes (Table 2).

The characters of the different urban flora found, along with the Key to genius and species as well as the local names and uses are mentioned as below:

Demographic Characteristics of the Informants

Table 1: Demographic characteristics of the informants

Category	Total
Gender	
Male	84
Female	60
Age Group (Years)	
20–30	10
30–35	14
35–40	18
40–45	22
45–50	24
50–55	26
55–60	30

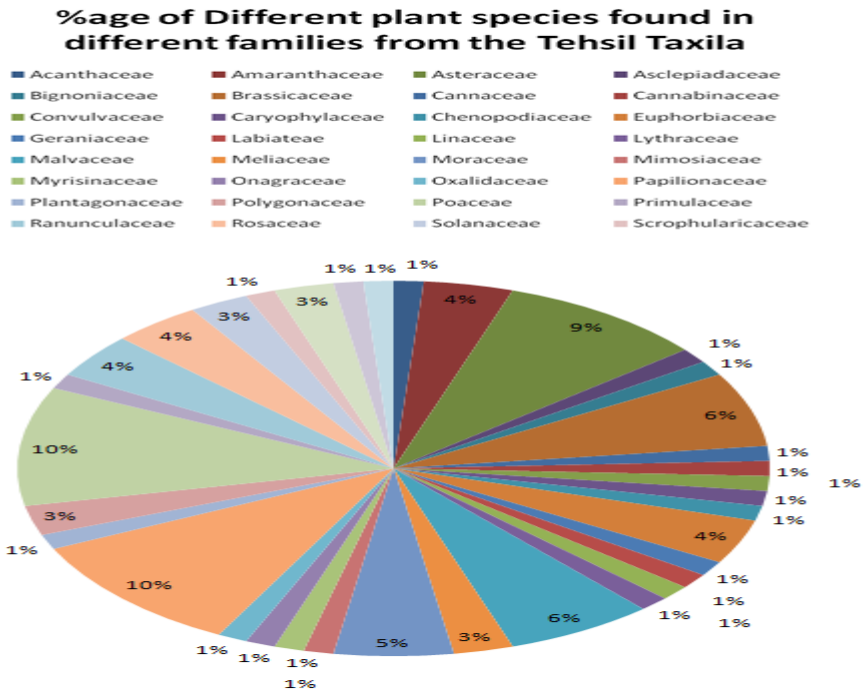

Figure 1: Percentage of different plant species found in different families from the tehsil Taxila

Table2. Ethnobotanical uses and local names of some Wild Plants of District Rawalpindi Tehsil Taxila

Sr. No.	Botanical name	Family name	Common name	Part used	Ethnobotanical use
1.	*Barleria cristata* L.	Acanthaceae	Bluebell	whole plant	Diuretic and aphrodisiac
2.	*Achyranthes aspera* L.	Amaranthaceae	Kutri	Root	Astringent, diuretic and antispasmodic
3.	*Alternanthera Pungens* Kunth L.	Amaranthaceae	Khakhi booti	whole plant	Purify blood and all sorts of impurities, decongestant, anti-inflammatory, anti-liver ailments
4.	*Ageratum conyzoides* L.	Asteraceae	Foladibooti	whole plant	Insecticide and nematicide.
5.	*Carthamus oxycantha* L.	Asteraceae	Poli	Flower	laxative, diaphoretic, useful in fevers, measles, eruptive skin diseases
6.	*Conyzacan adensis* L.	Asteraceae	Butter weed	whole plant	Used for treatment of uterine hemorrage
7.	*Cnicus arvensis* L.	Asteraceae	Kandiari	whole plant	Used as a galactogogue to promote lactation
8.	*Gnaphalium luteoalbum* L.	Asteraceae	Cudweed	whole plant	Used by insects as an important food plant.
9.	*Helianthus annuus* L.	Asteraceae	Suraj Mukhi	whole plant	Use as snack food and also as food for birds
10.	*Parthenium hysterophorus* L.	Asteraceae	Afsar Booti	whole plant	Decoction is used to treat high fever
11.	*Tagetes erecta* L.	Asteraceae	Merigold	whole plant	Use for treating stomach ache, parasites, diarrhea, liver illnesses, vomiting, indigestion
12.	*Calotropis procera* Ali.	Asclepediaceae	Mundar	whole plant	Treat rheumatism, wounds, glandular swellings, eczema, The latex acts as a purgative
13.	*Tecoma stans* L.	Bignoniaceae	Yellow elder	whole plant	Grown as an ornamental plant
14.	*Brassica rapa* L.	Brassicaceae	Shaljum	whole plant	Turnips commonly grown and widely adapted crops. The roots are eaten raw or cooked as a vegetable. Roots are also grown for feeding to livestock.
15.	*Capsella bursa-pastoris* L.	Brassicaceae	Sitia Booti	whole plant	The whole plant in flower is used (except the roots) usually in the form of a tea or infusion.
16.	*Coronopus didymus* L.	Brassicaceae	swine-cress	whole plant	Medicinally it is used for respiratory problems such as asthma and emphysema. Leaves are edible and have a strong pungent taste. They can be cooked or used raw in salads.
17.	*Farsetia jacquemontii* L.	Brassicaceae	Fraid Booti	whole plant	Has some medicinal properties and twigs are tender which are eaten as raw and are used for culinary purposes.
18.	*Sisymbrium irio* L.	Brassicaceae	London Rocket	whole plant	Used medicinally for treatment of coughs, congestion and relieves rheumatism.
19.	*Canna indica* L.	Cannaceae	Indian Shot	Whole plant	The plant is widely used as jewellery and the seeds of the plants are also used in kaymb (a musical instrument)
20.	*Cannabis sativa* Linn	Cannabaceae	Hashish	Whole plant	Used as industrial fibre, seed oil as a drug

21.	*Stellaria media* L.	Caryophyllaceae	Lahndara	Whole plant	This is a favored food of finches and many other seed-eating birds.
22.	*Convolvulus arvensis* L.	Convolvulaceae	Leli	Fruit	Viable fruit is eaten by birds and it's capable of decreasing habitat biodiversity.
23.	*Chenopodium album* L.	Chenopodiaceae	Bathuwa	Whole plant	The stalk hardens over time which makes good walking sticks. The leaves can be cooked as vegetables and eaten.
24.	*Croton bonplandianum* Bat.	Euphorbiaceae	Ban Tulsi	Whole plant	The ash from this plant is mixed with warm water to act as a detergent and the plant is used as a fuel.
25.	*Euphorbia helioscopia* L.	Euphorbiaceae	Dhodal	Extracts?	Extracts are used in pharmaceutical companies.
26.	*Ricinus communis* L.	Euphorbiaceae	Arand	Seed Oil	Oil extracted from seeds is used as an illuminant and medicinally used as a purgative.
27.	*Geranium rotundifolium* L.	Geraniaceae	Round leaf geranium	Whole plant	Parts of the plants are used as a diuretic and an astringent.
28.	*Micromeria biflora* Benth.	Labiatae	Ban Ajwain	Oil	The essential oil of the plant is used for flavoring liquors and also medicinally used for abdominal distention.
29.	*Linum usitatissimum* L.	Linaceae	Alsi	Whole plant	The plant is grown for its bastfibres that are used to make ropes and linen clothes.
30.	*Lagerstroemia indica* L.	Lythraceae	Crepe myrtle	Wood/Bark	Has durable wood used for timber and medicinally the stem bark is styptic
31.	*Abutilon indicum* L.	Malvaceae	Thuthi	Whole plant	Medicinal properties include demulcent, aphrodisiac, diuretic, pulmonary, sedative and laxative
32.	*Hibiscus rosa-sinensis* L.	Malvaceae	China Rose	Whole plant	It is a very popular house plant and shrub with many cultivars and is grown as an ornamental.
33.	*Malva parviflora* L.	Malvaceae	Small fruting mellow	Leaves/Seed	Seeds are edible and plant parts can be used as a poultice on swellings etc.
34.	*Malvastrum coromendelianum* L.	Malvaceae	Kharenti	Whole plant	Plant is used in making brooms. Medicinally, decoction of leaves used to clean wounds; also used for dysentery as well for wounds and sores; as diaphoretic.
35.	*Pterospermum acerifolium* L.	Malvaceae	Kanak Chumpa	Whole plant	The flowers of the tree can serve as a pleasant perfume and can even keep away insects. The flowers also provide a number of medicinal uses; an effective tonic can be prepared, as well as being used as a cure for inflammation, ulcers, blood problems, and even tumors. The reddish wood of the Tree can be used for planking.
36.	*Azadirachta indica* Adr. Juss	Meliaceae	Neem	Wood/Extracts	Wood is used as timber and all other parts of the plant are medicinal.
37.	*Cedrela toona* Roxb.	Meliaceae	Tun Wood	Wood/Extracts	Yields good furniture making wood and also cigarette boxes.

38.	*Broussonetia papyrifera* L.	Moraceae	Jungli Toot	Whole plant	It can be used for making high-quality paper and its bark is widely used to make tapa cloths.
39.	*Morus alba* L.	Moraceae	Shehtoot	Whole plant	Can be used as a food source for livestock. Fruit is widely eaten and medicinally used for treatment of dental caries and sore throats.
40.	*Acacia modesta* Wall.	Mimosaceae	Phulai	Wood/Extracts	The wood of the plant is durable due to its hardness whereas the gum is used in medicine and twigs are used for cleaning the teeths.
41.	Myrsine africana L.	Myrsinaceae	Thakisa	Whole plant	Produces tiny purple berries that have various uses.
42.	*Oenothera rosea* L' Her.	Onagraceae	Adholi	Whole plant	This plant is grown for its beautifully colored flowers ranging from pink to red.
43.	*Oxalis corniculata* L.	Oxalidaceae	Khati Booti	Whole plant	It is an edible plant which is considered an aphrodisiac, and medicinally used for mouth sores and sore throat and helps with fever, cramps and nausea.
44.	*Bauhinia variegata* L.	Papilionaceae	Kachnar	Whole plant	Used as a very popular ornamental tree. Its fruit is a pod and used in different recipes.
45.	*Dalbergia sissoo* Roxb.	Papilionaceae	Shisham	Whole plant	Wood is used commonly for making wheels, carts, furniture, boats etc.
46.	*Lathyrus aphaca* L.	Papilionaceae	Yellow Pea	Seeds	Seeds are edible and narcotic.
47.	*Lens culinaris* Medic.	Papilionaceae	Masoor	Seeds	This plant is grown for its lens-shaped seeds. The major use of this plant is as food.
48.	*Medicago polymorpha* L.	Papilionaceae	Maina	Whole plant	This plant plays a great role in soil fertility due to its nitrogen fixative properties.
49.	*Medicago polymorpha* L.	Papilionaceae	Ran-Methi	Whole plant	Used as forage, source of nectar, soil improver and potentially used as a source of food.
50.	*Trifolium pratense* L.	Papilionaceae	Red Clover	Whole plant	Grown as a fodder crop and has valuable nitrogen fixation properties.
51.	*Plantago lanceolata* L.	Plantaginaceae	Goli	Whole plant	Used frequently in herbal remedies and teas.
52.	*Rumex dentatus* L.	Polygonaceae	Palak	Extract	Allelopathic activity is found in this plant; i.e produces substances which inhibit growth of other plants.
53.	*Polygonum plebejum* R. Br.	Polygonaceae	Machechi	Root	The roots are used medicinally for irregular bowel movement treatment.
54.	*Arun dodonax* L.	Poaceae	Narri	Whole plant	This plant is used as a renewable biofuel source due to its reproducibility at various climatic conditions.
55.	*Avena sativa* L.	Poaceae	Jhondra	Whole plant	Parts are used for food products such as baked goods and also in brewing beers.
56.	*Panicum antidotale* Retz.	Poaceae	Charan	Whole plant	Is used as a sand binder and also has some value as fodder.
57.	*Poa annua* L.	Poaceae	Kahh	Whole plant	Used as fodder and grown in gardens.
58.	Saccharum spontaneum L.	Poaceae	Kahi	Whole plant	Has a widely spread root system that acts as an excellent sand binder.

59.	*Setaria glauca* L.	Poaceae	Ghass	Whole plant	Used as fodder and grown in gardens for greenery.
60.	*Triticum aestivum*	Poaceae	Gandum	Whole Plant	Commonly used in baked goods
61.	*Anagallis arvensis* L.	Primulaceae	Red chickweed	Wholeplant	The plant acts as an indicator of light soils.
62.	*Ranunculus laetus* Wall.	Ranunculaceae	Cheerful buttercup	Wholeplant	Toxic and has antibacterial properties
63.	*Ranunculus sceleratus* L.	Ranunculaceae	Cursed buttercup	Fruit	Achene fruit is edible and produced in clusters.
64.	*Ranunculus muricatus* L.	Ranunculaceae	Spinyfruitbutter cup	Whole plant	Whole plant used as an antiasthmatic, antirheumatic. The plant is used in the treatment of intermittent fevers, gout and asthma.
65.	*Rosa brunonii*Lindl.	Rosaceae	Chal/Tami	Wood	Wood is used for making walking sticks and rose water is also produced from the flowers.
66.	*Rubus ellipticus* Smith.	Rosaceae	Yellow himalayan raspberry	Fruit	Fruit is edible.
67.	*Solanum nigrum* L.	Solanaceae	Kuch Much	Fruit	Produces edible berries with some commercial values
68.	*Physalis divaricata* D. Don.	Solanaceae	Phaceliaphysalis	Wholeplant	Used medicinally for treatment against scabies and itching
69.	*Veronica polita* Fries, Novit.	Scrophulariaceae	Grey field speed well	Stem/Leaves	Have sweet and edible stems and leaves
70.	Tamarixa phylla L.	Tamaricaceae	Saltcedar	Stem/Leaves	Planted often as a roadside tree and the bark and galls are used for tanning purposes.
71.	*Tamarix articulata* Vahl, Symb.	Tamaricaceae	Farash	Whole plant	The tree stands fairly well in harsh climatic conditions and grows relatively fast.
72.	*Lantana camara* L.	Verbenaceae	Panchphuli	Whole plant	Grown as an ornamental plant for gardens due to highly variable flower colors.
73.	*Tribulus terrestris* L.	Zygophyllaceae	Bullhead	Whole plant	Used medicinally as a diuretic, demulcent, tonic and an aphrodisiac

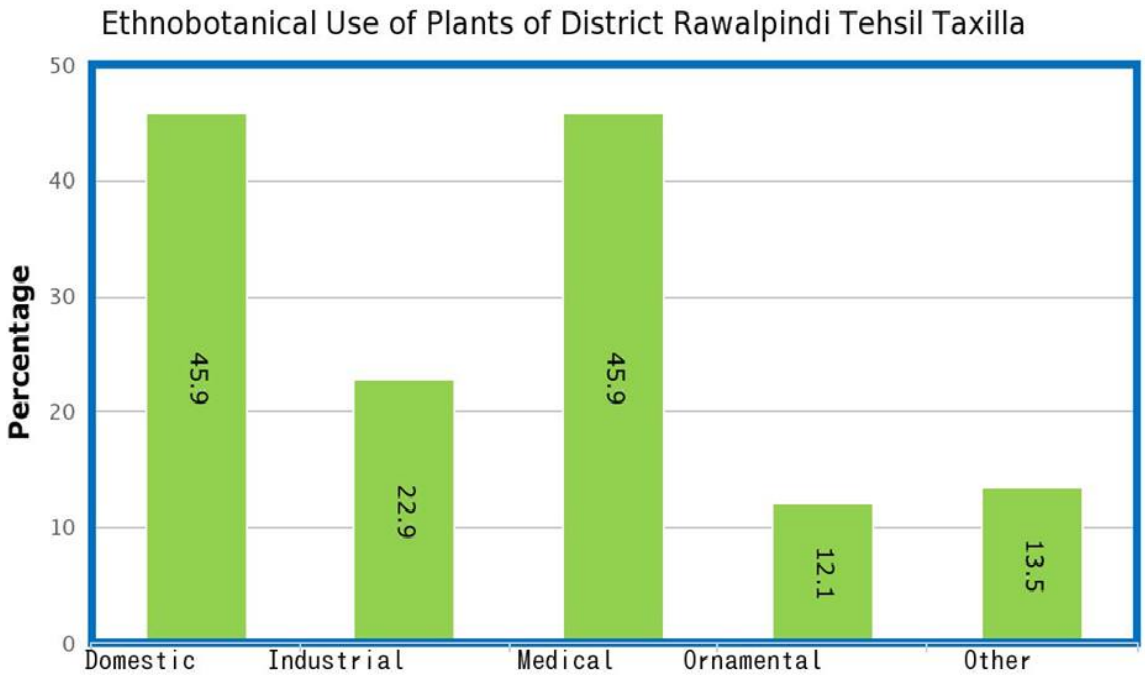

Figure 2: Ethnobotanical use of plants of district Rawalpindi tehsil Taxilla

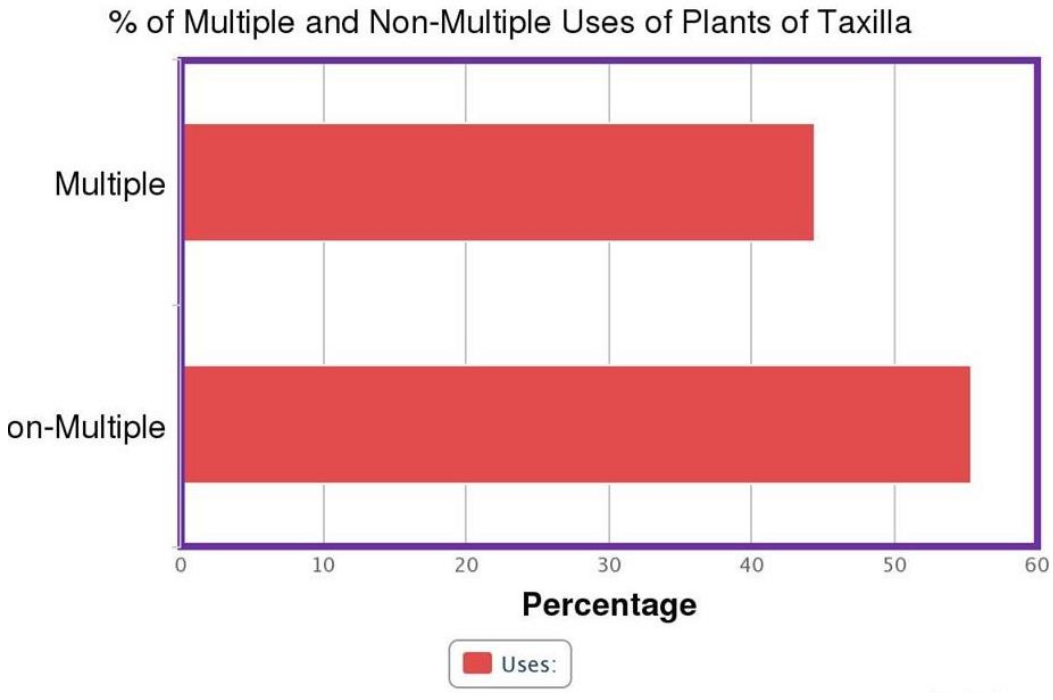

Figure 3: Percent of multiple and non- multiple uses of plants of Taxila

DISCUSSION

Food, clothing, and shelter have been the three primary requirements of mankind throughout history (Chendurpandy *et al*., 2010; Gras *et al.,* 2019). It came to light that although most of the plants had multiple uses, there were plants with multiple uses. For example, certain plants provided the main food sources for the native population and animals of the region, while other plants had both practical and/or medicinal purposes. Among the species gathered were those from the families of Asteraceae, Papillionaceae, and Poaceae. The origin, age, and cultural significance of the plant species have always interested botanists and ethnologists because of their influence on civilization (Alemayehu *et al.* 2015; Haq *et al*. 2011). These aspects of our useful plants have been extensively researched (Sharma, 2002; Shariat-Ullah and Bibi, 2018).

These plants such as *Tecoma stans* and *Hibiscus rosa-sinensis* are usually utilized as ornamental plants not only in Taxila but also elsewhere in Punjab and even across the world. The *Hibiscus rosa-sinensis* has pinkish-red flowers. Many plants can have a single use, while others can be used for more than one purpose. The *Lagerstroemia indica* plant, for example, is used for medicinal purposes as well as timber (Eshete *et al.,* 2016). As per Hanif *et al*. (2013) and Tamene *et al.* (2020), *Chenopodium album* serves as vegetation for natives.

Most of the plant species found in the Tehsil Taxila, District Rawalpindi, were found to play a considerable part in traditional medicine, as a food source, as fodder, commercially for timber purposes, and as ornamental plants after collecting 78 different kinds of plants. Since the Poaceae, Asteraceae, and Papilionaceae families contribute greatly to the vegetation of this area, different varieties of legumes and grasses are present here. As stated by Mustafa *et al.* (2023) and Ramzan *et al*. (2024), it is identified that this study will not only help conserve these plants but protect them from any threats that may cause them harm.

Youngsters do not know the ethnomedical uses of these plants. In compliance with WHO guidelines, it is necessary for the government to conduct awareness programs and campaigns concerning the conservation and utilization of wetland plants, which will enable the local population to know about the ethnomedical benefits of the locally identified plant species (Mustafa *et al.,* 2025; Aziz *et al.,* 2023).

CONCLUSION

This current investigation recorded 78 species of wild flowering plants belonging to 72 genera and 35 families from Tehsil Taxila of District Rawalpindi. It was observed that the plants were ethnobotanically important since they contributed to the field of medicines, food, fodder, timber, and ornamentals. The results show that plant use knowledge is more prevalent among elderly people and decreasing among younger individuals. Thus, it has become imperative to conserve the biodiversity along with its associated traditional knowledge. The results of the present study will be helpful for future investigations.

AUTHOR CONTRIBUTIONS

Uzma Hanif, Zaheer ud Din Khan And Andleeb Anwar Sardar conceived and designed the experiment, Hafiz Muhammad Ehsaan and Adeel Mustafa interpreted the results and wrote the paper, Sarah Maryam Malik, Bilal Ahmad, Muhammad Fazal

Rasool statistically analyzed the data, Sania Fatima made illustrations.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest related to the publication of this work.

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