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Survey of Economically Important Flora of District Bahawalnagar for Sustainable Harvesting

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Article Details

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ABSTRACT

An ethnobotanical survey of medicinal and other economically important flora used by native people in Bahawalnagar was carried out from April 2020 to December 2020. To compile and document medicinally and economically important plants in accordance with traditional practices in the area, the aim of this study was to conduct ethnobotanical investigations in the area. A total of 54 informants, including 9 hakims (herbal doctors) and 3 pansars (medicinal plant traders), were randomly selected from the study sites. Ethnobotanical data were collected using semistructured questionnaires, field observations, interviews and group discussions. During the course of the study, plant species belonging to 32 families were collected in the study area. Cucurbitaceae has 6 plant species, and Fabaceae and Poaceae have 4 plant species. The most frequently used plant parts were the leaves (39%), followed by fruits (43%). The most widely treated diseases were abdominal problems followed by general body pain. In the study area, agricultural expansion, firewood collection, timber production, and construction pose major threats to plants in general and medicinal plants in particular. The cultivation of medicinal plants is not common in the region. The management and conservation of medicinal plants has been made possible in part by indigenous practices, diverse cultural customs, and seasonally restricted plant collection. As a result people should be given the opportunity to grow medicinal plants at home in their gardens. The local people should be encouraged to be involved in the sustainable utilization and management of plant resources, as well as creating awareness by educating them on how to do so.

INTRODUCTION

BACKGROUND

Plants perform many important functions for human health. The most common is the reliable supplier of agricultural food. Ethnobotany is a study of the use of plants by indigenous peoples and economic botany focuses on plants grown in modern times. Plants are used medicinally and provide a number of drugs. This practice is common from ancient times to the present and serves as a staple of many drugs. Industrial products such as timber, various chemicals, and paper are some examples.

Every civilization uses herbs for healing purposes. Plants serve as the foundation for the development of modern drugs and medicines that have been used daily for centuries to treat diseases (ATEŞ & TURGAY, 2003). Since ancient times, plants have been used for a number of diseases. The majority of modern medicines are derived from plants. A Pharmacognosy study toxins in plants and how they influence plant health. Herbal medicines are preferred over other types of medicines worldwide because they are readily available and inexpensive and have fewer side effects (Ekka & Dixit, 2007). The rural population of the Tribes of Madhya Pradesh, India, also has a wealth of traditional plant knowledge that is important for the treatment of various diseases (Dwivedi et al., 2008). As such, humans have little access to this information, as most of it does not exist, except for Hakeems and herbalists. Thus, ethnobotanists play a crucial role in keeping traditional knowledge written down (Rama Rao & Henry, 1996). Fresh leaves of liquorice (Mlathi) have a good taste. Diabetes is recommended and has been extensively tested in animals and used in people without side effects (Megeji et al., 2005). The term "Ethnobotany" was first used by Harshberger (1896). It is a combination of four terms, namely, people, plant, use, and communication (Hazrat et al., 2007).

In ethnobotany, individuals study how indigenous plant species are used in particular cultural and regional contexts. In contrast, ethnobotany studies how plants are used for habitat, food, medicine, hunting, and spiritual purposes. By using anthropology and ethnobotany methods, ethnobotany extends the understanding of how knowledge is transmitted (Ram et al., 2004). Ethnobotany work serves as the first research method suitable for collecting information on plant use. It has also been shown that existing medical information provided to the general public is a source of information used in scientific research and in many plants that are fully utilized in a particular culture when found under scientific experimentation and found to be beneficial industries, so science and culture have strong links between them (Lentini, 2000).

IMPORTANCE OF MEDICINAL PLANTS

A variety of herbal remedies are used to improve infertility in both males and females to solve the problems that occur in the human race (Jaradat et al., 2019). Most allopathic medicines are extracted from medicinal plants (Rashid & Arshad, 2002). The characteristics of various plant species with ethno-medicinal properties were systematically recorded, and information on the use of invasive plants was collected (Shinwari, 1996).

ETHNOBOTANY IN PAKISTAN

A large number of threats to Pakistan's medicinal plants are related to ignorance of the local communities and local authorities that cultivate these plants. Language barriers prevent local people from being aware of any activity designed to preserve medicinal plants. The local population is unaware of any threats to medicinal plants or of any recommendations given to authorities and experts. Another threat to medicinal plants is the overuse of firewood, careless uprooting, and consumption of food(Qureshi & Ahmad, 1996). The local communities of various parts of Pakistan have years of experience with the traditional use of plants that occur in their regions. Generation after generation has passed down this tradition of handling traditional plants. From head to toe and from cut to bruise, these herbs are used to treat almost anything (Bhardwaj & Gakhar, 2005). Pakistan is a rich natural environment where plants have been used for centuries as traditional medicines for human and animal health (Ismail & Nisar, 2010).

Pakistan has a wide variety of medicinal plants used by local communities. It is important to use these plants properly in the community at the levels at which they are used (Bibi et al., 2008). Pakistan is blessed with a variety of wild plants used for medicinal and aromatic purposes. The features and proper use of some of these plants are well known in the community and at the level of end-users; many still need to be evaluated for their therapeutic value (Shinwari & Khan, 2000). There is a semiactive ethnomedicine field in Pakistan. It has more than 5700 species of medicinal plants. There are approximately 372 plant species. Approximately 456 medicinal plants are estimated to be traded on the market for noncommercial purposes, and they are used to produce more than 350 formulas to treat a variety of ailments (Husain et al., 2003). Ethnobotany, which studies the relationship between humans and plants, was recently introduced in Pakistan. Numerous plants are used throughout the country, especially in hilly regions, for a variety of purposes. Over 6000 flowering plants grow in Pakistan, 2000 of which are used medicinally (Sher et al., 2011).

STUDY AREA

The study area falls into the Bahawalnagar District located in Punjab, Pakistan. It is on the border. Before the independence of Pakistan, Bahawalnagar was part of Bahawalpur state under the Nawab of Bahawalpur. The city of Bahawalnagar is the regional capital. The Bahawalnagar border to the east and south affects the Indian subcontinent. Most people depend on agriculture. The local people of this region are largely dependent on seasonal plant sources and plants for their domestic needs. Most local residents are illiterate.For generations, local plants have long been used for food, shelter, furniture, medicine, etc., by different people with different lifestyles, beliefs, cultures, and cultural values. Natural resources and the environment are produced, used, and managed by them with credible indigenous knowledge systems.

LOCATION

Bahawalnagar has an area of 8878 km2, lying between °23'26.99"E(longitude) and 30°33'2.99"N (latitude). Bahawalnagar has a height of 163 m (535 ft). The Bahawalnagar region has five tehsils, Bahawalnagar, Haroon Abad, Chistian Sharif, Fort Abbas, and Minchin Abad. The Bahawalnagar borders east and south affect the Indian subcontinent, while the Bahawalpur region lies to the west, and the Sutlej River flows on its northern side (Fig. 1.4.1).

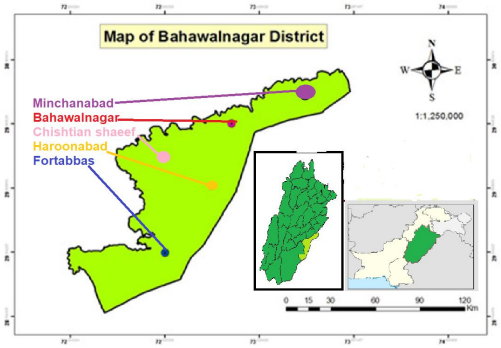


FIG 1.4.1: STUDY AREA MAP

(Sources: http://www.mejb.com/upgrade_flash/Jan2017/Floral%20diversity.htm)

CLIMATE

In summer, the weather in Bahawalnagar is very hot and dry, reaching temperatures greater than 50 °C. During the winter, the climate is cold and dry. Temperatures as low as 11 °C were recorded. Storms and wind are rare during summer, with an average wind speed of 3 km/h and 38% humidity.

RIVERS

To the north of Bahawalnagar, the Sutlej River flows from east to west. Various canals were built from the Sulemanki Head to supply water to the Bahawalnagar tips.

FLORA

Mulberry, guava, pomegranate, banana, orange, lemon, potato, yam, turnip, pumpkin, radish, cucumber, mint, fennel, spinach, cabbage, etc. grow there.

CROPS

Crops are one of the main sources of food in the study area. These are the most important crops. The main cultivated crops of Bahawalnagar are wheat, barley, rice, maize, cotton, Brassica, tobacco, sugarcane, sugar beet, onion, garlic, coriander, tomato and potato.

OBJECTIVES

➢ First, a few medicinal plants were identified to ensure their overall development in a particular region since the performance of plants differs in different regions.

➢ The area was studied with reference to the ethnic uses of flora through the people of the area.

LOCALITIES IN BAHAWALNAGAR

- Bahawalnagar (Tehsil)
- Haroon Abad (Tehsil)
- Fort Abbas (Tehsil)
- Chishtian (Tehsil)
- Minchin Abad (Tehsil)
- Hakra (Canal)
- Cholistan (some parts located in Tehsil Fort Abbas and others in the Bahawalpur district)
- River Sutlej (River)

THREATS

The use of rain-fed land for agriculture is detrimental to the medicinal flora of Bahawalnagar. Additionally, wood cutting, fodder collection, and grazing are some of the major threats to Bahawalnagar from its surrounding communities. Changing climates even affect the rainy season, particularly Bahawalnagar's desert flora.

MATERIALS AND METHODS

The following steps were adopted to gather information about the plant species and their uses:

DATA COLLECTION: PRIMARY DATA COLLECTION

ORIENTATION VISIT TO THE SITE

During guided visits, information was gathered about collection sites, local community structure, activities, and livelihoods, as well as potential plants in the area. In addition to the foot trails between these layers, the vegetation of the area was also visible in the Cholistan Desert and in the border area on the sides of the Hakra canal to improve the view of the distribution of vegetation, plant species, and common forms in various parts of Bahawalnagar.

MEETINGS

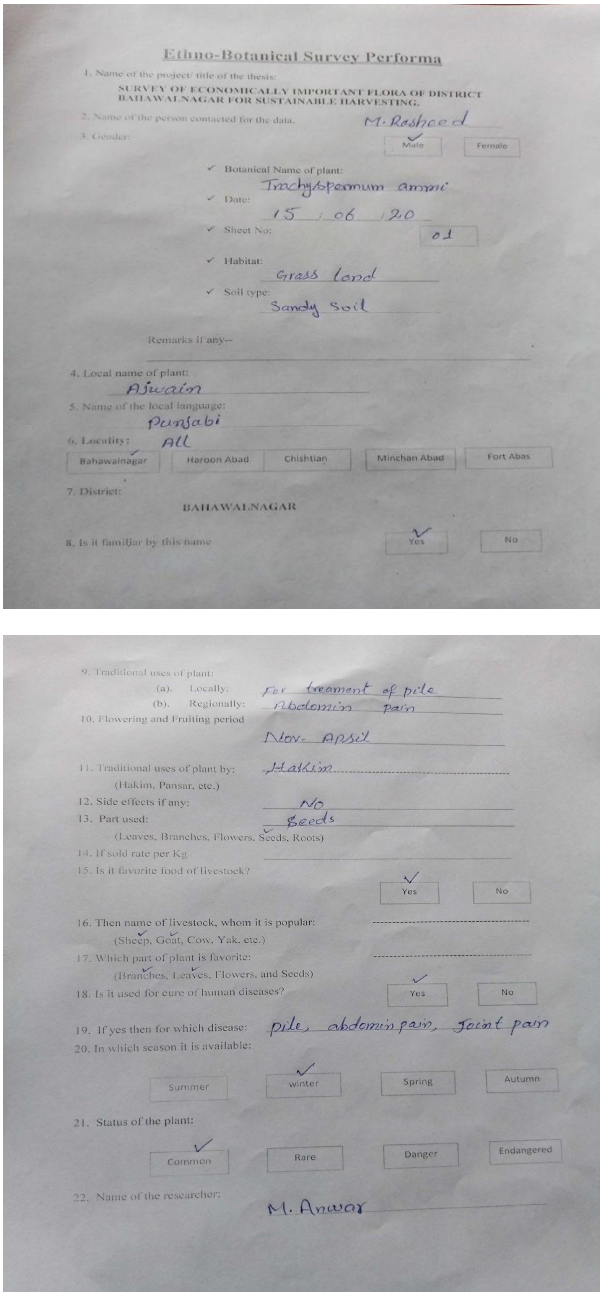
Many occasional meetings were held with local people, local herbalists, Hakims (herbal doctors), and herbalists (pansars) in the study area.

FIELD VISIT

A field study was conducted, and data were collected through questionnaires and interviews in the study area. We thoroughly surveyed the study area and collected a variety of plant specimens. We interviewed people to obtain vernacular names for taxa. Field notes were kept that accounted for the flowering and fruiting periods of various species.

QUESTIONNAIRE SURVEY

Another key data collection tool was a questionnaire. A questionnaire was developed for a variety of subjects. Ongoing field planning was organized to gather information about the native details of the plant species. The interviewer is aware of the impact of medicinal plants on public health questions related to age and mainly focuses on the weight, education, and job exposure of adults. At the time of the field, questions were used randomly to ask indigenous people, including elderly people, Hakeem (people (herbal doctors), Pansars people (herbalists) and elderly people known for the traditional use of local plant species. During the visit, the conversation is taken from the register, and the participants complete the list of questions at home. Interviews with adults. In addition, information regarding plant species, method of preparation, and use was also collected from 9 hakims and 3 pansars (Fig 3.1).



Ethno-Botanical Survey Performa

1. Name of the project/ title of the thesis:
SURVEY OF ECONOMICALLY IMPORTANT FLORA OF DISTRICT BAHAWALNAGAR FOR SUSTAINABLE HARVESTING.
2. Name of the person contacted for the data: M. Rasheed
3. Gender: ✓ Male / Female
✓ Botanical Name of plant: Trachyspermum ammi
✓ Date: 15 / 06 / 20
✓ Sheet No: 01
✓ Habitat: Grass land
✓ Soil type: Sandy soil
Remarks if any--
4. Local name of plant: Ajwain
5. Name of the local language: Punjabi
6. Locality: All
✓ Bahawalnagar / Haroon Abad / Chishtian / Minchan Abad / Fort Abas
7. District: BAHAWALNAGAR
8. Is it familiar by this name: ✓ Yes / No
9. Traditional uses of plant:
(a). Locally: For treament of pile
(b). Regionally: Abdomin pain
10. Flowering and Fruiting period: Nov- April
11. Traditional uses of plant by: Hakim
(Hakim, Pansar, etc.)
12. Side effects if any: No
13. Part used: ✓ Seeds
(Leaves, Branches, Flowers, Seeds, Roots)
14. If sold rate per Kg:
15. Is it favorite food of livestock? ✓ Yes / No
16. Then name of livestock, whom it is popular:
(Sheep, Goat, Cow, Yak, etc.)
17. Which part of plant is favorite:
(Branches, Leaves, Flowers, and Seeds)
18. Is it used for cure of human diseases? ✓ Yes / No
19. If yes then for which disease: pile, abdomin pain, joint pain
20. In which season it is available:
Summer / ✓ winter / Spring / Autumn
21. Status of the plant:
✓ Common / Rare / Danger / Endangered
22. Name of the researcher: M. Anwar

FIG 3. 1: QUESTIONNAIRE SURVEY

INTERVIEWS

In this area, very few people are literate, and most are farmers; to involve them in the data collection, a negotiation method was chosen. After the questions were translated into the local language, the local language people were asked for more information about the plants.

SECONDARY DATA COLLECTION

The secondary data from the current study were collected in the following ways.

LITERATURE REVIEW

The second set of data was collected from various research papers, as well as from books and online sources.

RESULTS

Table for List of species with botanical name, family name, and their uses.

S. No	Local name of plants	Common name of plants	Botanical name	Family of species	Uses of plant	Part of plant use
1.	Ajwain	Omum seed	*Trachyspermum ammi* (L.) Sprague in Kew Bull	Apiaceae	Stomach	Seeds
2.	Keekar	Babool	*Acacia nilotica* (Linn.) Delile	Fabaceae	Extract of leaves is use as blood purification, Antiseptic, flu.	Leaves. Stem. Flower. Fruit
3.	Bery	Jujube	*Ziziphus jujuba* Mill.	Rhamnaceae	Rheumatoid	Root
4.	Harmal Boti	wild rue	*Peganum Harmala* Linn.	Nitrariaceae	Joint pain, constipation	Leaves, Seeds.
5.	Nim/Neem	Margosa tree Neem tree	*Azadirachta indica* Adr. Juss	Meliaceae	Injury, antibacterial properties.	Leaves, fruit.
6.	Borh	Banyan	*Ficus benghalensis* Linn.	Moraceae	Masculinize/sexual problems	Fruit, Milk of plant
7.	Peelak	Black night	*Solanum section* Linn.	Solanaceae	Special use for animal stomach problems.	Whole plant
8.	Amberbel/Naangerbel	Dodder plant	*Cuscuta reflexa* Roxb.	Convolvulaceae	Joint pain, damage muscles	Whole plant

9.	Datura	Thorn apple	*Datura stramonium* L.	Solanaceae	Joint pain, pus in injury	Leaves Flowers Fruit
10.	Sohanjna	Drumstick tree	*Moringa oleifera* Lam., Encyl	Moringaceae	Purification of blood, Circulation of blood	Flower Seeds
11.	Amaltas	Golden rain tree	*Cassia fistula* linn.	Fabaceae	Stomach problems in child (constipation)	Seeds
12.	Kaasni	Chicory	*Cichorium intybus* L.	Asteraceae	Cleaning of kidney	Seeds, Leaves
13.	Saunf	Sweet Fennel	*Foeniculum vulgare* Mill., Gard	Apiaceae	Normalize the heartbeat, Stomach problems	Branches Seeds
14.	Lasoori	Assyrian plum, lasu-ra,	*Cordia obliqua* L.	Boraginaceae	Chest diseases, cough, chronic fever treatment.	Gum, fruit and seeds.
15.	Cortuma/tuma	Colocynth	*Citrullus colocynthis* (Linn.) Schrad	Cucurbitaceae	constipation and insect repellent.	Dried pulp of fruit and root
16.	Jaaman	Java plum	*Syzygium cumini* (Linnaeus) Skeels	Myrtaceae	Helpful for diabetic patients, motion	Fruit
17.	Aak	Milkweed	*Calotropis procera* (Ait.) Ait	Asclepiadacea e	Skin diseases, biting of snakes.	Flowers, leaves and latex
18.	Bhakhra	Rank	*Tribulus terrestris*	Zygophyllace	Treatment of	Whole

			Linn.	ae	hookworm and gastric troubles, fever.	plant
19.	Bahu phali	Corchorus depressus	*Corchorus depressus* linn.	Tiliaceae	Spermatorrhoea, sexual disability.	Whole plant
20.	Gorakh paan	Seaside heliotrope.	*Heliotropium curassavicum* L.	Boraginaceae	Extract of leaves is regulating the urine flow in few moments	Whole plant
21.	It sit	Desert horse purslane, black pigweed	*Trianthema portulacastrum* L.	Aizoaceae	wound-dressing, poultice	Whole plant
22.	Bhurat	Bhurut,Indian sandbur	*Cenchrus biflorus* Roxb.	Poaceae	Abdominal pain	Seeds
23.	Amrood	Guava	*Psidium guajava* L.	Myrtaceae	Power to stomach, Constipation.	Fruit, seeds
24.	Anaar	Pomegranate	*Punica granatum* L.	Lythraceae	Blood purifier, pile, blood in gumming (masoora)	Juice, Fruit scalp
25.	Amb/aam	Mango	*Mangifera indica* Linn.	Anacardiaceae	Vomiting, asthma, diarrhea, bleeding pile.	Flower, leave and fruit
26.	Bajra	Pearl Millet	*Pennisetum glaucum* (Linn.) R	Poaceae	Make a bundle of its seeds and	Seeds

					tape it to relieve stomach pain	
27.	Bans	Bamboo	*Bambusa arundinacea* (Retz.) Willd	Poaceae	Extract of leaves with honey used for cough, fever and pile.	Leaves, roots.
28.	Bakain	Chinaberry tree white cedar	*Melia azedarach* L.	Meliaceae	Pile, for hair growth	Leaves, fruit
29.	Banola seed	Cotton seeds	*Gossypium hirsutum* Linn.	Malvaceae	Deficiency of milk in women	Seeds
30.	Bhindi	Lady finger	*Abelmoschus esculentus* (Linn.) Moench	Malvaceae	Spermatorrhoea (Jaryaan)	Fruit, seeds
31.	Paalak	Spinach	*Spinacia oleracea L.*	Amaranthaceae	Used for weight loss	Juice of leaves
32.	Peepal	sacred bo tree/Bodhi Tree	*Ficus religiosa* Linn.	Moraceae	Wounds healing, inflammations and scorpions biting.	Leaves and fruit
33.	Podeena	Mint	*Mentha arvensis L.*	Lamiaceae	colds and urinary tract infections, Menstrual disorders,	Leaves and stem
34.	Petha	Crookneck pumpkin	*Cucurbita moschata* (Duch. ex Lam.) Duch	Cucurbitaceae	Heart diseases dandruff	Seed oil fruit
35.	Tarbooz/mateera	Water	*Citrullus lanatus*	Cucurbitaceae	Maintain blood	Juice,

		melon	(Thunb.) Mats. & Nakai, Cat		circulation in veins	fruit
36.	Til	Sesame	*Sesamum indicum* Linn.	Pedaliaceae	Bloody pile. hair growth	Seeds oil.seeds
37.	Toot, Shahtoot	Mulberry	*Morus nigra L.*	Moraceae	Useful for lungs problems	Roots. Leaves
38.	Gillobel	Guduchi	*Tinospora cordifolia* Miers in Ann	Menispermaceae	Fever	Branches
39.	Sharin	lebbek tree, flea tree	*Albizia lebbeck* (L.) Benth	Mimosaceae	Eye diseases	Wood, Stem
40.	Sanbhalo/samalo	Chaste Plant	*Vitex agnus-csstus* Linn.	Verbenaceae	Joint pain	Leaves
41.	Shahtra	Drug fumitory or earth smoke	*Fumaria officinalis* Linn.	Fumariaceae	Cleaning of blood	Leaves
42.	Jantar	Jantar	*Sesbania bispinosa* (Jacq.) W.F	Leguminosae	Constipation spatially in animals	Juice of fresh leaves
43.	Chibhar/kachri	Wild musk millon	*Cucumis melo var. agrestis* Linn.	Cucurbitaceae	Digestion and stomach disorders	Fruit
44.	Mushak bibry	Sweet Basil.	*Ocimum basilicum* L.	Lamiaceae	Spermatorrhoea	Seed, Leaves.
45.	Asgand nagori	Winter Cherry	*Withania somnifera* (linn.) Dun	Solanaceae	Uric acid problems	Roots
46.	Harnoli	Castor oil plant,	*Ricinus communis* Linn.	Euphorbiacea e	Constipation	Seed
47.	Alsi	Flax	*Linum usitatissimum* Linn.	Linaceae	Joint pain, sexual power	Seeds

48.	Tinda	Tinda, Round melon	*Praecitrullus fistulosus* (Stocks) Pangalo, Bot	Cucurbitaceae	Power to mind	Fruit
49.	Jo	Barley	*Hordeum vulgare* Linn.	Poaceae	Relief to stomach	Seeds
50.	Kharbooza	Muskmelon	*Cucumis melo* L.	Cucurbitaceae	Clear the veins of the kidney, urinary bladder. condensed the semen's.	Seeds
51.	Dhania	Coriander	*Coriandrum sativum* L.	Apiaceae	Reduce the sexual strength, water of green coriander cleans the eyes.	Seeds powder
52.	Rai/sarson	Mustard	*Brassica campestris* Linn.	Brassicaceae	Use for ear pain especially in child	Seed oil
53.	Tahli	Sheesham	*Dalbergia sissoo* Roxb., Fl	Fabaceae	Used for itching and skin disease.	Leaves and wood
54.	Maithi	Fenugreek	*Trigonella foenum graceum* Linn.	Fabaceae	Diabetic patient	Seed
55.	Adrak	Ginger	*Zingiber officinale* Roscoe in Trans	Zingiberaceae	Stomach disease	Root
56.	Mulethi	Liquorice	*Glycyrrhiza Glabra* Linn.	Leguminosae	Flue, useful for throat irritation	Roots
57.	Kandiari	Clothur, Common cocklebur	*Xanthium strumarium* L.	Asteraceae	diuretic, antibacterial, antifungal, constipation	Whole plant

58.	Baram dandi	Globe thistle	*Echinops echinatus* Linn.	Asteraceae	Sexual disability	Whole plant

DISCUSSION

Thirty-two families were used in this research. Among these Cucurbitaceae, Fabaceae, and Poaceae have a large number of plant species. Cucurbitaceae are a family of medicinally important plants that contain both wild and cultivated species and are used in different ways, such as in sweets, vegetables, and salads, but little is known about their medicinal properties (Shrivastava & Roy, 2013). Cucurbitaceae is considered one of the most important sources of secondary metabolites, which include triterpenoids. These compounds have antidiabetic, anti-inflammatory, cytotoxic, hepatoprotective, antiparasitic effects (Shah et al., 2014).The Fabaceae family has a variety of characteristics, including one of its most important characteristics: it is one of the most useful groups of plants in terms of providing food, green manure, and forage to humans (Ahmad et al., 2016). There are a number of species used in this study, and their percentages are summarized in Table 4.2.1.

TABLE 4.2. 1: LIST OF FLORAL FAMILIES

S. No	Families	No of species	Species % age	S. No	Families	No of species	Species % age
01	Cucurbitaceae	06	10.3	17	Linaceae	01	1.7
02	Fabaceae	04	6.9	18	Brassicaceae	01	1.7
03	Poaceae	04	6.9	19	Zingiberaceae	01	1.7
04	Apiaceae	03	5.2	20	Amaranthaceae	01	1.7
05	Moraceae	03	5.2	21	Asclepiadaceae	01	1.7
06	Solanaceae	03	5.2	22	Zygophyllaceae	01	1.7
07	Asteraceae	03	5.2	23	Tiliaceae	01	1.7
08	Leguminosae	03	5.2	24	Aizoaceae	01	1.7
09	Meliaceae	02	3.4	25	Lythraceae	01	1.7
10	Boraginaceae	02	3.4	26	Anacardiaceae	01	1.7
11	Myrtaceae	02	3.4	27	Rhamnaceae	01	1.7
12	Malvaceae	02	3.4	28	Pedaliaceae	01	1.7
13	Lamiaceae	02	3.4	29	Menispermaceae	01	1.7
14	Nitrariaceae	01	1.7	30	Verbenaceae	01	1.7

15	Moringaceae	01	1.7	31	Fumariaceae	01	1.7
16	Convolvulaceae	01	1.7	32	Euphorbiaceae	01	1.7

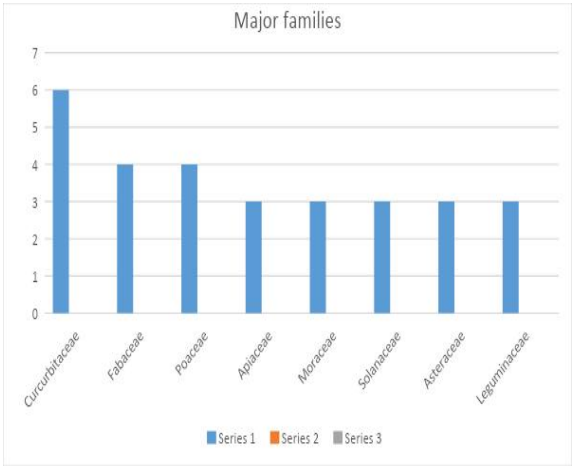


FIG 4.2. 1CHART FOR MAJOR FAMILIES.

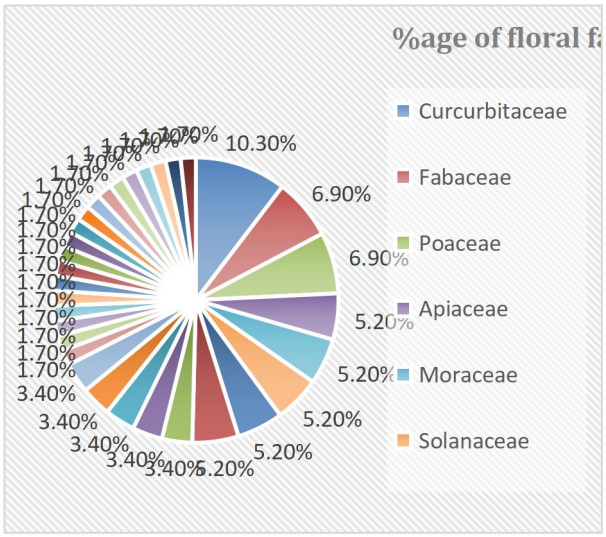


FIG 4.2. 2 CHART OF THE PERCENTAGES OF FLORAL FAMILIES

ECONOMICAL USES OF PLANTS

The table contains 13 uses of 58 plants in categories based on miscellaneous categorizations. Fuel dominated the categories recorded (15 species), followed by fodder & vegetables (10 species), fruit (07 species), furniture (06 species), oil, sauce & fencing (3 species), and other categories with fewer than 3 species, including spices, pickle ornamental, and baskets.

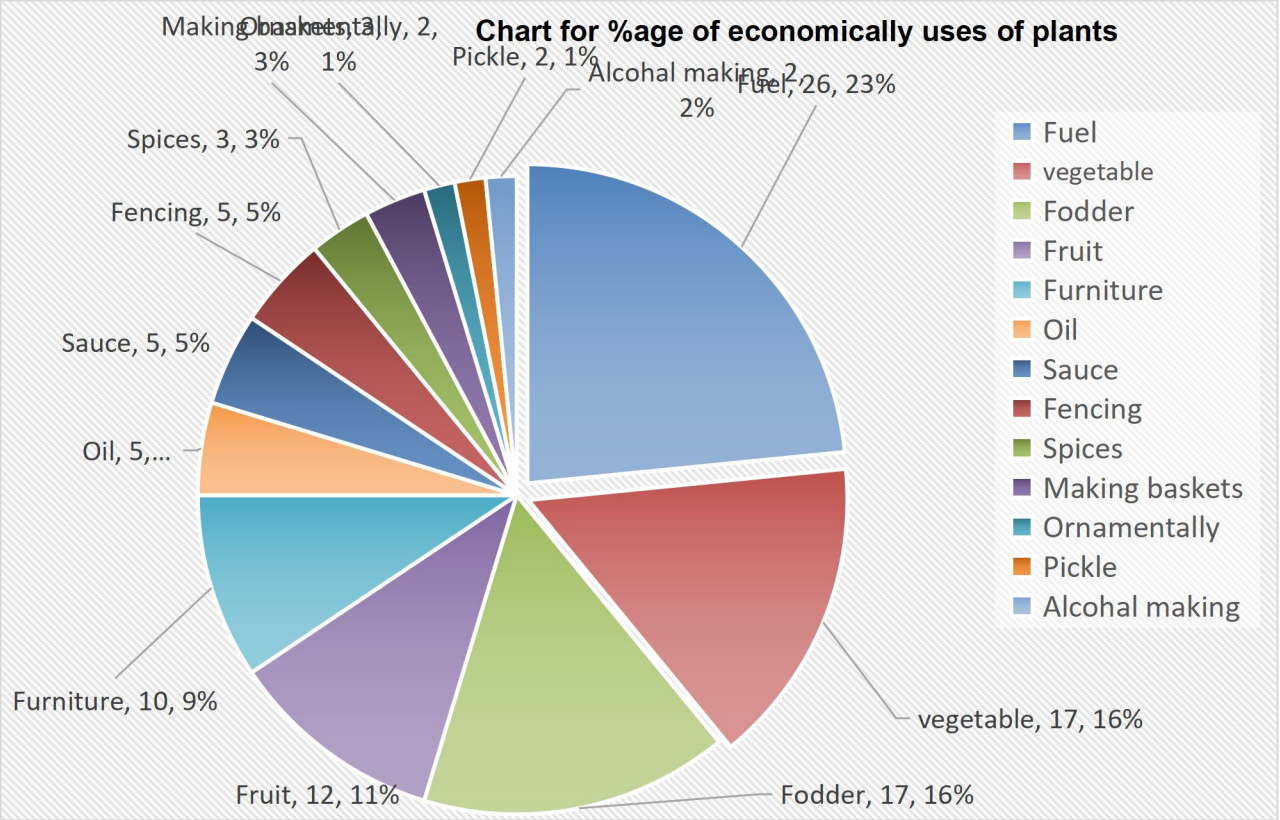


FIG 4.3. 1: CHART FOR %AGE OF ECONOMIC USES OF PLANTS:

Fifty-eight species are documented and shown on the pie chart because they have been used for various purposes. The pie chart shows that fuel is the most common plant used in the study area (26%). Because of the lack of easy access to CNG in this area, people rely on plants for their fuel needs. In second place is the consumption of fodder (17%). The pie chart shows which plant categories and their percentages are used for miscellaneous (plants (Figure 4.3.1).

TABLE 4.3. 1: TABLE FOR THE PERCENTAGES OF ECONOMICALLY IMPORTANT PLANTS

Sr. No	Common name	Botanical name	Rate per (In Pakistani rupees)
1.	Omum seed	Trachyspermum ammi (L.) Sprague in Kew Bull	190
2.	Babool	Acacia nilotica (Linn.) Delile	390
3.	Jujube	Ziziphus jujuba Mill.	100
4.	wild rue	Peganum Harmala Linn.	360

5.	Margosa tree	Azadirachta indica Adr. Juss	100
6.	Drumstick tree	Moringa oleifera Lam., Encyl	600
7.	Golden rain tree	Cassia fistula linn.	220
8.	Chicory	Cichorium intybus L.	260
9.	Sweet Fennel	Foeniculum vulgare Mill., Gard	320
10.	Assyrian plum, lasura,	Cordia obliqua L.	250
11.	Corchorus depressus	Corchorus depressus linn.	200
12.	Seaside heliotrope.	Heliotropium curassavicum L.	300
13.	Guava	Psidium guajava L.	50
14.	Pomegranate	Punica granatum L.	70
15.	Cotton seeds	Gossypium hirsutum Linn.	500
16.	Spinach	Spinacia oleracea L.	50
17.	Mint	Mentha arvensis L.	250
18.	Sesame	Sesamum indicum Linn.	300
19.	Mulberry	Morus nigra L.	200
20.	Jantar	Sesbania bispinosa (Jacq.) W.F	100
21.	Wild musk millon	Cucumis melo var. agrestis Linn.	100
22.	Barley	Hordeum vulgare Linn.	70
23.	Mustard	Brassica campestris Linn.	295
24.	Ginger	Zingiber officinale Roscoe in Trans	300
25.	Liquorice	Glycyrrhiza Glabra Linn.	500

The details given in Table 4.3.1 were collected during the research survey. Plants provide food, clothes, shelter, and medical care, which are all basic human needs. Increasing population, income levels, and urbanization are causing these needs to grow rapidly. Naturally, plants provide food directly and feed livestock that are then consumed.

MEDICINAL PLANTS USED BY LOCALS

There are some traditional uses of some important plants that are used by local women in the southern Himalayan Mountains in Pakistan. In particular, women use medicinal plants as remedies for a variety of ailments and depend on the plants in their surroundings for food, health,

meditation, and various cultural uses (Qureshi et al., 2009). As part of the primary health care system, medicinal plants and traditional knowledge are abundant, and this diversity of species contributes significantly to the effectiveness of treatment (Umair et al., 2017).

According to this survey, plants in the study area provide sources of health care drugs since the majority of these plants lack basic services, such as hospitalsand clinics. Agriculture is the chief source of income for native people, and plants are used to treat a variety of diseases. The medicinal uses of plants are generally classified into 10 categories, with general body uses being the most frequent such as abdominal pain, respiratory problems, sexual problems, urinary problems, blood problems, pain uses, general body uses, cardiac problems and some other problems, each of which contains a number of plants that are used for treating various ailments (Table 4.4.1).

TABLE 4.4. 1INDIGENOUS PLANTS ARE USED TO TREAT DISEASES IN THE LOCAL COMMUNITY

1		2		3		4		5	
Abdominal pain		**Respiratory problems**		**Sexual problems**		**Urinary problems**		**Skin problems**	
Problems	**Spp#**	**Prob**	**Spp#**	**Problems**	**Spp#**	**Problems**	**Spp#**	**Prob**	**Spp#**
Stomach problems/belly	9	Cough	02	Masculin-ize	01	Urinary problem	01	Latex allergy	01
Constipation	5	Cold	02	Spermato-rrhoea	04	Urinary tract infection	01	Body irritation	01
Abdomen pain	01	Chest diseases	02	Semen weakness	02	Laxative	05		
Motion reliever	01	Throat irritation	01	Menstrual disorder	01	Diuretic	01		
		Asthma	01			Regulation on urine	01		

						flow			
6		**7**		**8**		**9**		**10**	
Blood problems		**Pain uses**		**General body uses**		**Cardiac problems**		**Other problems**	
Problems	**Spp#**	**Prob**	**Spp#**	**Problems**	**Spp#**	**Problems**	**Spp#**	**Prob**	**Spp#**
Blood purification	03	Pile pain	05	Injury	02	Cardiac tonic	02	Wound	02
Blood pressure	02	Ear pain	01	Diabetic problem	02	Cardiac diseases	01	Diarrhea	01
		Joint pain	6	Eye diseases	01			Antiseptic	03
		Fever	02	Anti – poison	02			Hair growth	01

Everyone has a need for medicinal plants. However, most people are unaware that they exist. People are ignorant of these plants and have no idea about them. In the Bahawalnagar District, plants are used both for domestic purposes and for treating various diseases. They use plants because they are less expensive, lack basic health facilities, are easily available, and have few side effects. Compared with other parts of the district, the Fort Abbas area is one of the five tehsils that is most dependent on folk medicines (Nisar et al., 2014).

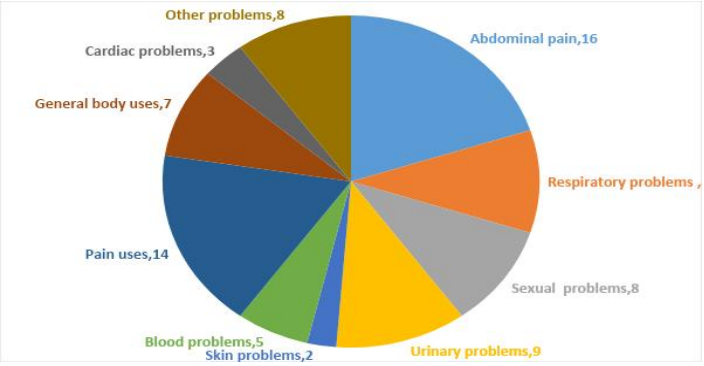


FIG 4.4. 1: THE NUMBER OF DIFFERENT DISEASE CATEGORIES TREATED WITH DIFFERENT PLANTS

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