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Ethno taxonomical Approach in the Identification of Useful Medicinal Flora of District Kasur Pakistan

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ABSTRACT

The current study was conducted to document the medicinal plants commonly used by local peoples in District Kasur. The snowball sampling method was used for the selection of informants and the informants were interviewed through a semi-structured questionnaire. The documented data was quantified by indices UV (use value) and RFC (Relative Frequency of Citation). During fieldwork, about 71 plant species belonging to the 33 families were collected. The most dominant family was Leguminosae's and Poaceae (7 Species each). The most commonly used plant part was the leaf (25 Species). The most common method of drug preparation was decoction (28 Species). The highest RFC value was calculated for *Vigna radiate* (0.056), *Vitis vinifera* (0.042), and *Ipomeoe cairica* (L.) (0.035). and the highest UV value was calculated for *Allium cepa* L. 0.056, *Trigonella foenumgraecum* L. 0.049, and *Vigna radiate* 0.042. Traditional communities still use medicinal plants for the treatment of various diseases. But the knowledge of ethnobotany is at risk because the younger generations have no interest. Furthermore, due to deforestation and urbanization, the local medicinal flora is also at risk.

Key Words: Ethnobotany, Kasur, flora,



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Introduction

Ethnobotany is a branch of science that explores how plants are utilized by indigenous peoples for food, lumber, fire, ornamentation, and medicines. One of the goals of ethnobotany is to document, history, and preserve indigenous plant information. (Din et al 2020). Modern ethnobotany entails understanding of botany, taxonomy, biochemistry, geology, and medicine, among other things. (Safeer et al 2017) Since antiquity, people have used plants native to their settlements for medicinal and other uses. (Zereen and Sardar 2013; Qaseem et al 2019).Historically, oral transmission has been the primary method of passing down ethnobotanical information. (Ahmad et al 2014). A significant amount of ethnobotanical informations is still delivered orally. It is critical to capture and safeguard this data for succeeding generations in order to stop it from disappearing.(Aziz et al 2018)

In China, there has been a culture of plant expertise for nearly 5,000 years. In underdeveloped nations, about 80% of people mainly utilise conventional plant knowledge., according to a World Health Organization survey. (Irfan et al 2018; Rana et al 2020). The conventional knowledge of indigenous vegetation substantially aids the creation of numerous crucial current medications. Plants provide over 25% of the medications employed in modern treatment.(Tufail et al 2020). There is an extensive record of the use of plant-based medications in herbal cures, including opium, aspirin, digitalis, and quinine.(Rana et al 2020). Although a few plants are used to cure many conditions, others are used to treat a particular ailment. Natural flora is used in medicine to generate innovative treatments in addition to provide protection to a number of ailments.(Tufail et al 2020; Anwer et al 2020)

Plants are used by certain indigenous peoples to identify their financial position besides to being used for health benefits. The economic importance of employing herbal remedies is expected to skyrocket, reaching five trillion dollars (US) by 2050 (Zeb et al 2020). It is expected that there may be as many as ten billion people on the world by 2050.(Ulian et al 2020). While a variety of aspects, such as expanding numbers of people, harm the variety of plants, global warming and anthropogenic actions are the main drivers of declines in biodiversity. (Agrawal 2017). According to the United Nations, more than one million species globally are in risk of elimination. (Dapar et al 2020).The woody vegetation is essential for the preservation of the terrestrial ecosystems, preserving water, reducing the breakdown of soil, avoiding droughts and floods, and conserving water sources. (Arshad et al 2022) Indigenous knowledge is essential for organising assets, understanding and sustaining ancient methods, and safeguarding equipment.(Dapar et al 2020 ; Dapar et al 2020). Quantitative studies can substantially benefit for organising approaches for the protection of natural plant material.(Ullah et al 2020; Tugume et al 2016)

Conventional medicine offers a huge potential to improve the availability of medical treatment for the Pakistani people. (Agrawal 2017 ; Umair et al 2019). Only 12% of the natural remedies are used to treat different illnesses. The medicinal plants are used to cure human as well as animal ailments. As a result of industrialization, overcrowding, and extensive gathering, several medicinal plants are on their way of elimination. (Shinwari et al 2011). People that inhabit in or near woodlands rely on them more than others, while they are also more informed regarding the way to use vegetation for a wide range of purposes.(Ali et al 2018). The indigenous people in Pakistan predominantly employ natural remedies to heal various ailments.(Ahmad et al 2014)Naturally available natural teas and medicinal products can heal common diseases such as fever, colds, coughs, and diarrhea instead of creating any unwanted side effects. Various indigenous drugs remain in use to provide relief from a range of ailments today.. (Sabeen and Ahmad 2009). The



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200 medicinal plant species are utilized in traditional recipes by approximately 40000 and 50000 local hakims to heal a range of ailments. (Shinwari et al 2011) and 600 plant species have ethno botanical information that has been documented. (Murad et al 2013) The conventional understanding is increasingly dwindling as a result of the oral transmission of folk and local care expertise rather than written documentation from one generation to the next. (Malik et al 2015) It is necessary to preserve this significant traditional information. (Murad et al 2013).

Materials and Methods

Study area

District Kasur is 150 to 200 meters above the sea level, located southeast to Lahore at latitude 31°12' N and longitude 74°44' E. The total area of district Kasur is 3995 km² and surrounded by Rivers Sutlej and Ravi (Fig.1). (Arshad et al 2022)

Collection and identification of plants

Plant samples were gathered over several time of year between 2021 and 2022. Four to five field trips were scheduled at random. Throughout each season to maximize plant gathering. A guide from the area shows us around on each field excursion. We collect vital medicinal herbs and then meet with local sources. A chronicle of the medicinal uses of the plants examined. By using Forman and Birdson, (1989) method the samples are preserved. The Fuji digital camera was used during fieldwork to take the proper pictures of the somatic constituents, fruits, and flowers for later documentation of each therapeutic plant. Additionally, pictures of myself and the informants were taken while conducting the interviews. By using latest literature and flora of Pakistan the collected specimens were identified and The databases International Plant Names Index, World Flora Online were also used for correct identification of preserved specimens that are collected during the field survey

Ethnoveterinary data documentation

The method for gathering ethnobotanical data was a semi-structured questionnaire. The informants were questioned in-person interviews and at focus groups. The informants were chosen via the free listing and snowball procedures.

(Jan et al. 2022). In most cases, in-depth interviews were done. In order to verify the accuracy of the data, the informants cross-checked the ethnoveterinary information that had been gathered. Each person's prior verbal approval was always sought before

(Abidin et al. 2022). We questioned 71 locals, 40 of whom were male informants and 31 of whom were female respondents. Native medicinal specialists (hakims) were also questioned in their homoeopathic stores in order to document the present level of traditional herbal knowledge. Un-ceremonious conversations and field trips were detained with vital sources consisting of cattlemen, agriculturalists, educators, farmers, and students (from all educational institutions) to improve awareness of the data obtained on gathered herbal remedies accessible in the study area. The informants' age ranged from 30-70. By using Mengistu and Hager's (2008) procedure the data were recorded. The legitimacy of the obtained data regarding medicinal plants was verified at different locations by exhibiting the plant' specimen, and photography of each specimen were also done for correct identifications of plants

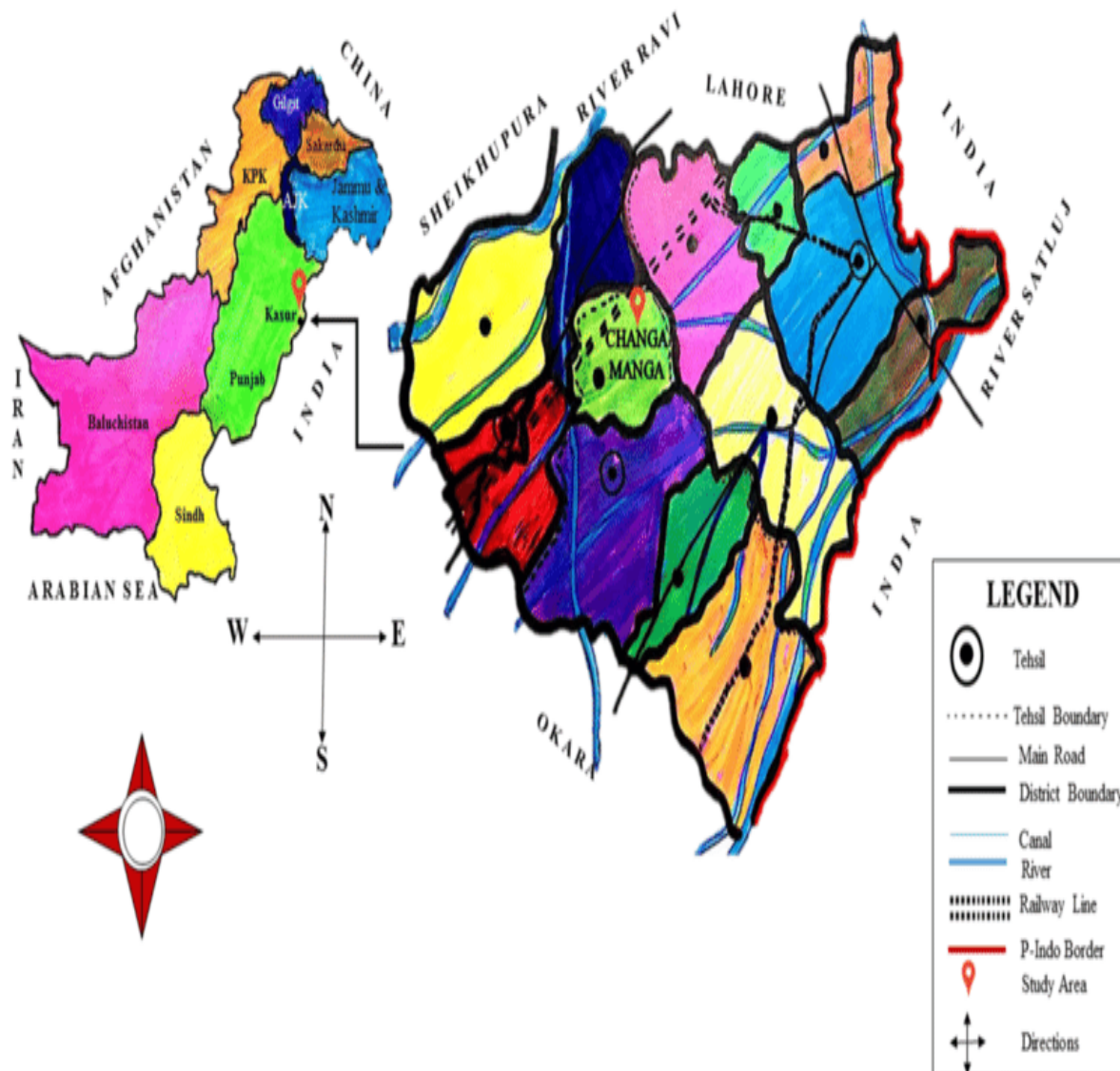


Figure: 1

Quantification of ethnoveterinary data

These ethnobotanical indices were used to quantify ethnomedicinal data.

Relative frequency citation (RFC)

The relative amount of citation was used to calculate the regional importance of each plant species, which does not take into account the parameter, i.e. use-category. (Tardio & Pardo-De- Santayana, 2008;Ahmad et al. 2021). The RFC was calculated as follows:

$$RFC = FC/N$$

FC is the number of informants who mentioned the use of the species

N is the total number of informants participating in the study

Use value (UV)

The index is generated using the following formula to determine the relative relevance of each species locally utilized as a treatment. (Phillips et al. 1994; Jan et al. 2021).

$$UV = \Sigma U/n$$

Where UV is the use-value, ΣU is the number of uses told by each informant for the given



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plant species, and n is the total number of informants interviewed for that particular plant. It is high when there are more uses reported for a plant and low when fewer uses are reported for a plant (Yabesh et al. 2014).

Result and Discussion

The socio-demographic distribution and characteristics of the local informants

This study we conducted in-depth interviews with 71 indigenous individuals, including drivers, rural people, housewives, labourers, shepherds, teachers, students from all institutions, merchants, Hakims, herbalists, and pansaries, among others. 31 women and 40 men served as informants. The questioned informants ranged in age from 30 to 70. Following that, the participants were sorted into four categories based on age. according to the years between them. The majority of the informants were between the ages of 61 and 70, and research has shown that this age group has the greatest indigenous information of therapeutic plants, followed by those between the ages of 51 and 60. There was a drop in indigenous information among the informant age groups under 41, with the informants in the 30–40 age range having the least understanding of ethnobotany. (Table 1). This may be because youngsters prefer conventional medications over natural ones owing to the modernism of their lifestyle. (Sargin, 2015). In agreement with the classification of literacy, respondents' indigenous knowledge also tended to decline as the literacy rate increased. This is because highly educated individuals want a better healthcare system over the existing one. (Jan et al. 2017). It has also been shown that men possess greater ethnobotanical knowledge than women. This could occur as a result of the fact that men picking more medicinal vegetation, while women make herbal treatments and offer animal treatment in the house.

Diversity of families and life form

In this investigation, 71 medicinal plants (Fig. 2) from 33 distinct families were gathered. Leguminosae's Poaceae family is the most abundant in terms of diversity.

(Fig. 3). The widespread spread of these families' members in the research region may be the cause. Leguminosae, Poaceae, have a broad distribution in this research region. (Abbas et al. 2017).

The medicinal plants that have been collected originate from a variety of live species. The most common sort of life was a herb.

(Table 2). Herbs could dominate because of their greater capacity to adopt different climatic conditions of the research area. Additionally, herbs regenerate quickly and have greater efficiency than shrubs and trees.

. (Shah & Rahim, 2017). Additionally, herbs are easily accessible. (Malik et al. 2019). Furthermore, herbs have a variety of bioactive chemicals that enable plants to readily adjust to any environment. (Zahor et al. 2017). Additionally, compared to other life forms, herbs contain a higher concentration of different bioactive chemicals and have greater therapeutic potency than shrubs and trees. (Ullah et al.2021)



A.Allium cepa L. **B** Trigonella foenumgraecum **C.** Syzygium cumini (L.) **D** Sesamum indicum L **E** Rosa indica L **F.** Psidium guajava L **G.** Nicotiana tabacum **.H** Musa paradisiaca L **I** Morus nigra L **J** Lycopersicon esculentum Mil **K** Ficus benghalensis L. **L** Dalbergia sissoo DC.

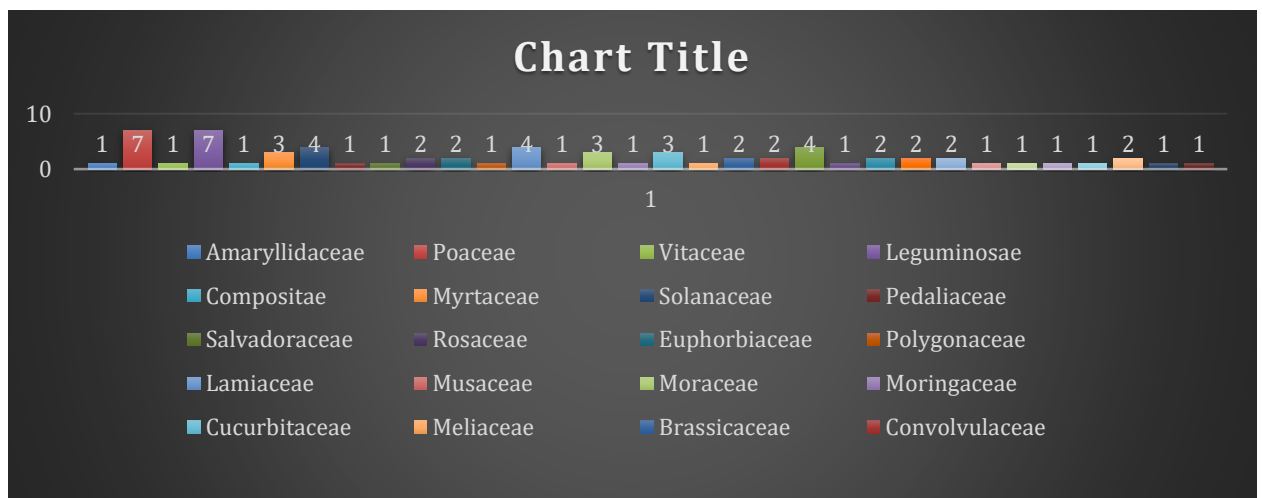


Figure:2 Medicinally important families of the study area



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Demographic information of the study area

Gender		No. Informants				
Male		40				
Female		31				
Age Group	No. Informants	Medicinal Plants Reported	Complete Recipes			
30-40	10	5	4			
41-50	16	15	11			
51-60	22	21	25			
61-70	23	30	31			
Botanical name	Local name	Part used	Intake mode	Disease(s) treated	UV	RFC
Amaryllidaceae Allium cepa L.	Ganda	Bulb, Fruit	Raw, Paste	Gaseous bloating,	0.056	0.014
Poaceae Zea mays L	Makai	Seeds, Stem	paste	making breads	0.014	0.028
Vitaceae Vitis vinifera	Angoor	Fruit, Stem	Decoction	jaundice	0.28	0.042
Leguminosae Vigna radiata	Moongi	Beans, Stem	Powder	Joints pain.	0.42	0.056
Leguminosae Trigonella foenumgraecum L.	Methi	Whole plant	Raw	joints pain and blood purifier	0.049	0.014
Compositae Tithonia diversifolia (Hemsl.) A.Gray	Jangli ganda	Seeds, Leaves	paste	treatment of piles.	0.035	0.042
Myrtaceae Syzygium cumini (L.)	jaman	Whole plant, Seeds, Leaves	Decoction	diarrhea, stomach disorders, diabetes and blood purification	0.033	0.056
Solanaceae Solanum melongena L	Baingan	Fruit	paste	kidney stones	0.028	0.014
Pedaliaceae Sesamum indicum L	Til	Seeds	paste	increased urination	0.014	0.028
Salvadoraceae Salvadora oleoides	Ban	Root	Raw	tooth cleaning	0.028	0.014
Poaceae Saccharum officinarum L	Ganna	Stem	paste	liver and stomach disorders	0.014	0.042
Rosaceae Rosa indica L	Lal gulab	Flower	paste	eyes infection, softness of skin	0.028	0.014
Euphorbiaceae Ricinus communis L	Arind	Seeds, Fruit	Decoction	rheumatism arthritis and prevention of pregnancy	0.033	0.014
Myrtaceae Psidium guajava L	Amrood	Leaves, Fruit	Raw	diabetes,.anticonstipatory.	0.049	0.028

Table 2: Medicinal plants used for the treatment of veterinary diseases by the local



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Leguminosae Pongamia pinnata (L.)	Sukh chain	Aerial parts, Leaves	Raw	cleaning tooth	0.014	0.042
Polygonaceae Polygonum aviculare	Hind ki raani	Whole plant	paste	leucoderma or vitiligo	0.056	0.028
Poaceae Phalaris minor Retz	Dumbi sitti	Aerial part	Raw	fodder for animals.	0.033	0.014
Poaceae Pennisetum glaucum	Bajrah	Seeds, Stem	cooked	joints pain and fodder.	0.014	0.028
Lamiaceae Ocimum basilicum L	Tulsi	Seeds, Leaves	paste	urinary tract infection.	0.014	0.042
Solanaceae Nicotiana tabacum L	Tobacco	Leaves	paste	antiseptic	0.033	0.014
Musaceae Musa paradisiaca L	Kela	Fruit, Stem	Raw	diarrhea and increasing body weight, leucorrhea	0.049	0.042
Moraceae Morus nigra L.	Kala shahtoot	Fruit, Leaves	Raw	cough, respiratory tract infection	0.035	0.014
Moringaceae Moringa oleifera Lam	Suhanjna	Beans, Leaves	Raw	diabetes, backbone pain,	0.014	0.033
Cucurbitaceae Momordica charantia	Kareela	Fruit, Pericarp	paste	diabetes, allergy and pustules.	0.033	0.014
Lamiaceae Mentha arvensis L	Podina	Whole plant	Decoction	cold, fever, digestive and cardiovascular disorders	0.014	0.042

population of District kasur

Sr No	Name of Families	Plant species of (Table 1)
1	Amaryllidaceae	1



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Meliaceae Melia azedarch L	bakaen	Fruit, Stem	Raw	Milk production blood purifier	0.035	0.014
Solanaceae Lycopersicon esculentum Mill	Tamatar	Fruit	Raw	blood production, salad and cooking purpose	0.033	0.014
Brassicaceae Lepidium didymum L	Afsanteen	Leaves	paste	blood purifier, diabetes	0.014	0.035
Convolvulaceae Ipomeoe cairica (L.)	Ishq peecha	Seeds	paste	healing body rashes and fever	0.035	0.035
Malvaceae Hibiscus rosa-sinensis	Shoe flower	Flowers	Decoction	heart diseases	0.014	0.028
Malvaceae Gossypium arboreum	Kapas	Leaves, Seeds, Flowers, Stem	Decoction	regular menstrual cycle.	0.033	0.014
Rosaceae Fragaria ananassa (Duchesne ex Weston) Duchesne ex Rozier	Strawberry	Fruit	paste	generates blood production	0.014	0.042
Moraceae Ficus religiosa L	Peepal	Bark, Fruit, Latex	Decoction	anti-vomiting, gonorrhea, body pain	0.035	0.014
Moraceae Ficus benghalensis L.	Bohr	Whole plant, Aerial roots, Latex	Decoction	Asthma, nervous disorders i.e. seizure, insomnia, anxiety	0.014	0.042
Myrtaceae Eucalyptus camaldulensis Dehnh.	sufaida	Whole plant, Stem	Decoction	Flu and influenza.	0.014	0.028
Poaceae	Dub ghaas	Whole plant	Decoction	fever and headache	0.033	0.014



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Desmostachya bipinnata (L.) Stapf						
Leguminosae Dalbergia sissoo DC.	Sheesham	Leaves, Bark, Beans, Stem	Raw	dysentery, syphilis, bronchitis, inflammations, infections, hernia	0.035	0.028
Zingiberaceae Curcuma longa L.	Haldi	Rhizome	paste	cancer, diabetes, Arthritis, diarrhoea, inflammation	0.056	0.014
Cucurbitaceae Cucurbita pepo L	Kaddo	Fruit	paste	working of stomach.	0.014	0.033
Cucurbitaceae Cucumis melo L	Kharbooza	Seeds, Pericarp	Raw	kidney stones	0.033	0.014
Boraginaceae Cordia sinensis Lam.	Goondi	Fruit	Raw	malaria, intestinal disorders and conjunctivitis .	0.028	0.042
Apiaceae Coriandrum sativum	Dhania	Leaves	Decoction	gastrointestinal disorders such as flatulence, diarrhea, indigestion, and nausea	0.014	0.056
Boraginaceae Cordia myxa L	Lasoorha	Fruit	Raw	wounds and ulcers	0.014	0.042
Rutaceae Citrus limon (L.	Leemo	Fruit	Raw	high blood pressure, and chest pain	0.033	0.014
Leguminosae Cicer arietinum L	channy	Seeds, leaves	Decoction	stomach problems, arthritis, fever, and heartburn.	0.035	0.014
Amaranthaceae Chenopodium murale	krund	Aerial Part	Decoction	pustules, pimples and wounds.	0.014	0.033
Amaranthaceae Chenopodium album	Bathu	Leaves	Raw	throat troubles,	0.049	0.014
Canabanaceae Cannabis sativa L.	Bhang	Leaves, Flower,	Decoction	rheumatism, epilepsy, asthma, skin burns, pain,	0.014	0.042
Brassicaceae Brassica rapa var. campestris L	saag	Seeds, Aerial parts	Raw	ood for people or feed to livestock as leaves, roots, and seeds. .	0.033	0.014
Xanthorrhoeaceae Aloe vera (L.) Burm.f.	Kawar gandal	Whole plant	Decoction	Reduces Arthritic Swelling Heals Psoriasis Lesions. ... Gum Infections. Eye irritations and injuries	0.035	0.042
Asteraceae Carthamus oxyacantha M.Bieb	Poli	Whole plant	Decoction	jaundice, male infertility,	0.014	0.042



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Poaceae Cynodon dactylon (L.) Pers	Bham grass	Whole plant	Decoction	kidney problems, bronchial disorders	0.033	0.014
Malvaceae Abutilon indicum (L.) Sweet	Peeli booti	Flowers and leaves	Decoction	cleaning wounds , diarrhea, rheumatism	0.014	0,042
Asclepiadaceae Calotropis procera (Aiton) W.T.Aiton	Aak	Leaves	Decoction	asthma and snake bite	0.028	0.014
Leguminosae Mimosa pudica L	Chui mui	Roots and leaves	Decoction	urogenital disorders, wounds healing	0.014	0.028
Rutaceae Murraya exotica L.	Marwa	Leaves and roots	Decoction	abdominal pain, diarrhea	0.028	0.042
Leguminosae Murraya koenigii	Karry pata	Leaves	Decoction	inflammation, itching, fresh cuts, dysentery .	0.033	0.014
Lamiaceae Ocimum basilicum L	Niazboo	Leaves	Decoction	skin infection, cold, and cough	0.035	0.014
Solanaceae Withania somnia (L.) Dunal	Aak san	Whole plant	Decoction	Cancer, diarrhea, dyspepsia	0.014	0.042
apocynaceae Nerium indicum Mill	Oleander	Flowers and roots	Decoction	abortion and cancer	0.014	0.035
Lamiaceae Ocimum basilicum L	Niazboo	Leaves	Decoction	skin infection, cold, and cough	0.028	0.014
Anacardiaceae Mangifera indica L.	Aam	Fruit	Raw	Un-ripened fruit is used for making pickle. Fruit is edible. Wood used in low quality furniture	0.014	0.042
Convolvulaceae Convolvulus arvensis	Valoor	Whole plant	Decoction	wounds and fever,	0.028	0.056
Apiaceae Daucus carota L	Gajar	Root	Raw	hypotensive, gastroprotective, hepatoprotective, aphrodisiac, nephroprotective,	0.014	0.028



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Euphorbiaceae Euphorbia granulata	Hazar dani	Whole plant	paste	dysentery	0.014	0.042
Papaveraceae Fumaria indica (Hauskn.) Pugsley	Pit papra	Whole plant	paste	dyspepsia, aches, pains, diarrhoea, fever, influenza and liver complaints .	0.028	0.014
Poaceae Hordeum vulgare L.	Jou	Seeds	Raw	diarrhea, stomach pain, and inflammatory bowel conditions	0.014	0.028
Malvaceae Malva parviflora L	Chiri choga	Leaves	decoction	stomach disorders.	0.028	0.014
Fabaceae Melilotus indica (L.	Sainjhi	Whole plant, Seeds	Raw	bowel ,fodder	0.014	0.042
Nitrariaceae Peganum harmala L	Harmal	Seeds	paste	anti-inflammatory and Bronchodilator.	0.014	0.028
Apocynaceae Pentatropis nivalis (J. F.Gmel.) D.V.Field & J.R.I.Wood	Fareed	Leaves	powder	warts and tumours	0.28	0.014

2	Poaceae	7
3	Vitaceae	1
4	Leguminosae	7
5	Compositae	1
6	Myrtaceae	3
7	Solanaceae	4
8	Pedaliaceae	1
9	Salvadoraceae	1
10	Rosaceae	2
11	Euphorbiaceae	2
12	Polygonaceae	1
13	Lamiaceae	4



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14	Musaceae	1
15	Moraceae	3
16	Moringaceae	1
17	Cucurbitaceae	3
18	Meliaceae	1
19	Brassicaceae	2
20	Convolvulaceae	2
21	Malvaceae	4
22	Zingiberaceae	1
23	Boraginaceae	2
24	Rutaceae	2
25	Amaranthaceae	2
26	Canabanaceae	1
27	Xanthorrhoeaceae	1
28	Asteraceae	1
29	Asclepiadaceae	1
30	apocynaceae	2
31	Anacardiaceae	1
32	Papaveraceae	1
33	Nitrariaceae	1

Plant species of District Kasur Punjab, Pakistan arranged according to their families

Diversity of the parts and formulation methods

Herbal remedies employ various plant parts to cure a variety of diseases. In this research the 71 Medicinal plants parts are used including its vegetative parts. The two most often used plant parts as medicines by different plant species were the leaf (25 Species) and fruit (18 species) (Fig. 4). Since the plant's leaves contain different components



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that present in high amount that way leaves are used on large scale in this study area. (Jan et al. 2017; Ullah et al. 2021) Additionally, leaves are produced by plants abundantly. (Ahmad et al. 2015). Additionally, using leaves is risk-free and viable for plant life from the perspective of preservation. (Jan et al. 2017). Seeds are typically used in herbal recipes because they contain a significant amount of bioactive components. (Shah et al. 2017). Herbal medicines employ a variety of plant components to treat a variety of ailments.

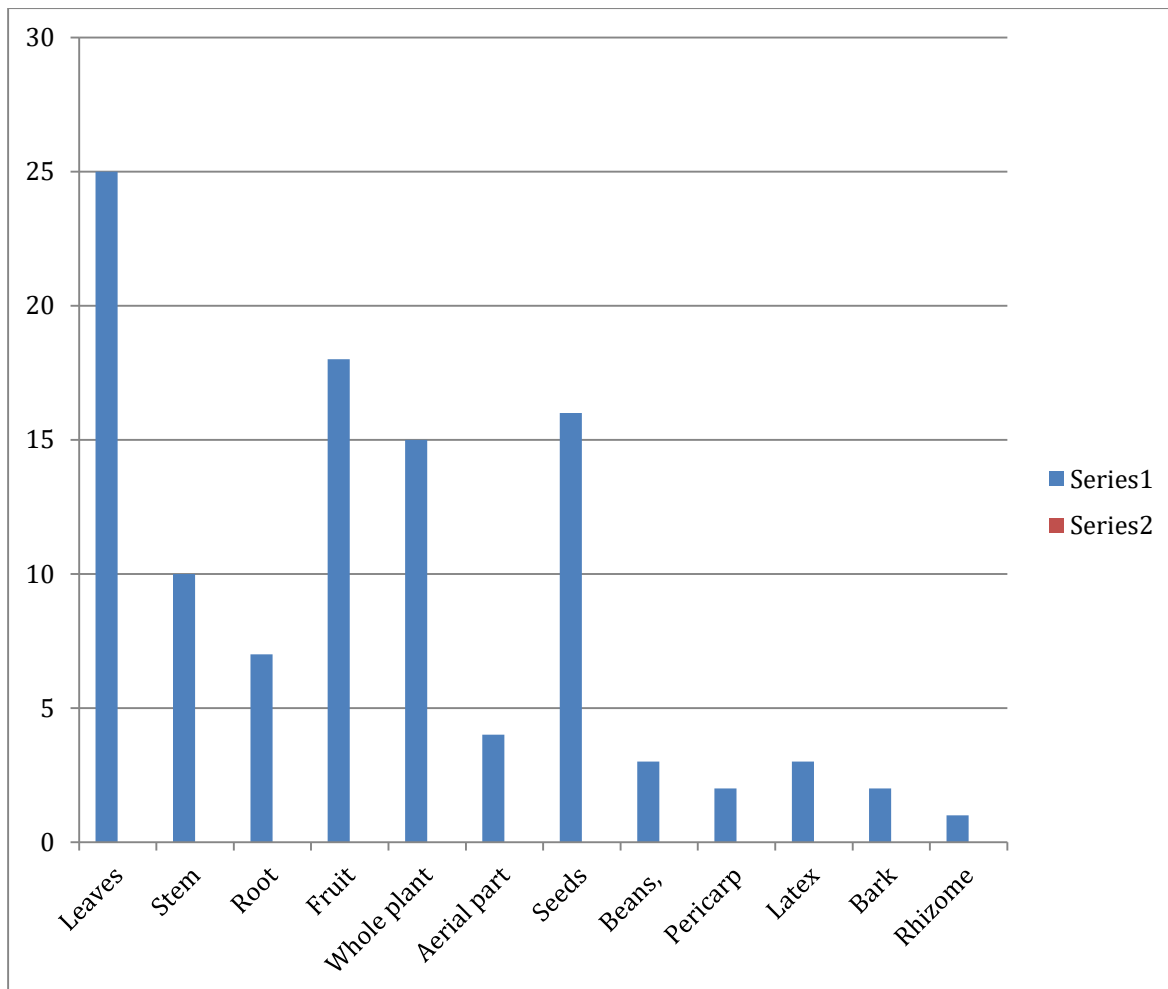


Figure 4 Plant parts used in the preparation of medicines

The findings revealed that decoction (28 Species), paste (19 Species), and raw (23 Species) were the most popular herbal preparation methods. (Fig. 5). One of the most popular processes for making herbal medication is decoction. The simplicity of the medication production process is one explanation that might exist. (Amjad et al. 2017). Steaming plant material in water accelerates metabolic processes that result in the extraction and availability of various chemicals for disease treatment. Zhang et al. 2009

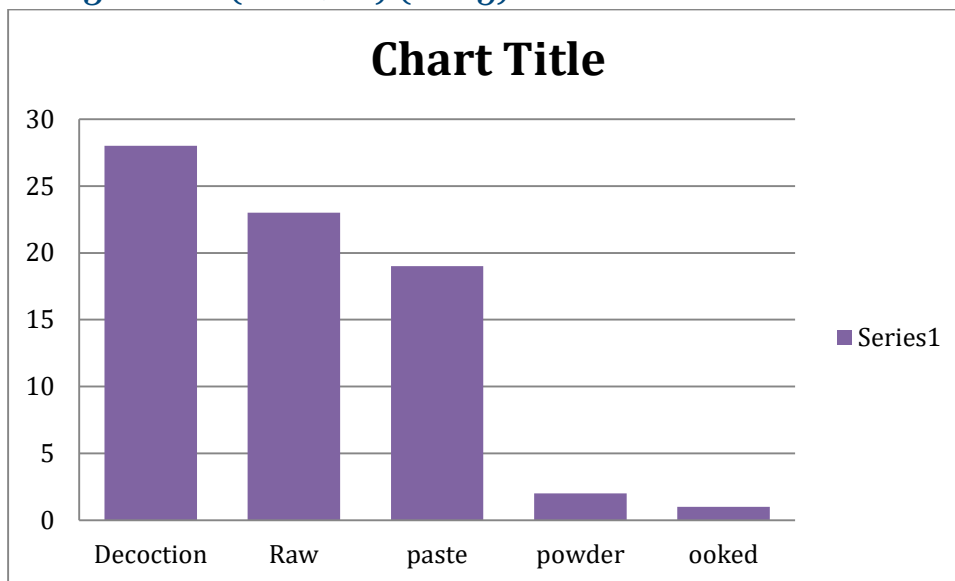


Figure 5 Mode of administration of medicine

Relative frequency citation (RFC)

The RFC ethnobotanical index was employed to conclude the indigenous relevance of every therapeutically significant plant species using the frequency of citation. The highest RFC values in our investigation were determined for *Vigna radiate* (0.056), *Vitis vinifera* (0.042), and *Ipomeoe cairica* (L.) (0.035). (Table 2). The plant has a high RFC score, indicating that it is extensively dispersed in the studied region and that the local community has a high level of ethnobotanical information concerning the uses of plants. If a plant species has a low RFC value, it does not necessarily mean that it is less important medicinally; rather, it means that it is limited in its dispersal to particular areas of the research area, which indicates that less individuals have knowledge of the plants' medicinal properties. (Ahmad et al. 2015; Jan et al. 2017; Shah and Rahim, 2017).

Use value (UV)

Ethnobotanists frequently employ the Use Value (UV) index to gauge the relative medicinal significance of a given plant species. The most notable ethnobotanically significant plant species in the research region are highlighted. UV has a value between 0 and 1. In this investigation, *Allium cepa* L. 0.056, *Trigonella foenumgraecum* L. 0.049, and *Vigna radiate* 0.042 were estimated as having the maximum UV. (Table 2).

The abundance of UV rays suggests that plant species are homogeneously dispersed throughout the area and that the native people is additional educated about the medicinal benefits of the plants. Although there may be other reasons for low UV, such as plant species restriction, it does not always follow that the plant species is less necessary from a therapeutic standpoint. There are one or more medicinal applications for some parts of the plants in research area (Ahmad et al. 2015; Jan et al.2017).

Conclusion

The present study's outcomes unmistakably demonstrate that the studied area has a rich floristic and cultural variety, which contributes to the local population's wealth of ethnobotanical knowledge. Additionally, as there are few contemporary medical services in the study area's hilly and rural majority, the local population relies on therapeutic herbs. The current research primarily draws attention to the significant indigenous knowledge



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connected to the region's medicinal flora. It was stated that because the younger generation lacks interest in it, the important indigenous knowledge in the research region is in danger of extinction. Additionally, the oral transmission of this priceless information resource from generation to generation by the local populace is a significant contributor to its extinction. Ages 60 to 70 were the group that contributed the most information. The traditional wisdom will be documented in Utilized for a variety of purposes, including storage for future generations, protection through public access to the knowledge, and usage as a springboard for further research and conservation efforts. Future research initiatives should, in our opinion, be planned to raise local residents' knowledge of the need to protect medicinal plants. Additionally, these medicinal plants should be evaluated in terms of their phytochemical and pharmacological properties in order to find novel drug candidates.

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