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Ethnobotanical Survey of Common Medicinal Plants Used by People for the Treatment of COVID-19, in Faisalabad, Pakistan

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Abstract

This herb-rich plant has long been used to treat a variety of ailments. Since the spread of COVID-19 and death cases are constantly increasing, which prompted the Health and Food Administration to recommend taking drugs that inhibit viral activity, in addition to the World Health Organization suggesting the need to rely on alternative medicine, especially those medicinal plants that have antiviral properties. The goal of this study is to collect ethnic data that members of the Pakistani Faisal community may utilize to cure certain ailments. Method: Traditional herbalists and adults provided ethnic data. The pharmacy at Faisalabad University School of Medicine received the form letters gathered in this investigation. This research now includes 70 different tree species from 39 different families. Of the 12 species, the *Rosaceae*family has been discovered to be the most popular, and the most part of plants is more effective is leaves. Conclusion: The herbal business, herbalists, and export authorities for this therapeutic plant benefit from this research. This dissertation contains critical information for future phytochemical research that may be required to keep this crop alive.

Key words: Ethnopharmacology, Folk Medicine, Medical Ethnobotany, Traditional Knowledge, Urban Phytotherapy, Medicinal Plants, Survey, Herbs, Pakistan.

Introduction

Since the emergence of the Corona virus in Wuhan, China, in December 2019, and with the increase in cases and the high death rate, the World Health Organization declared in March 2020 COVID-19 a pandemic. The common symptoms of the Corona virus were high fever, coughing, shortness of breath, sore throat, bone pain, and loss of sense of smell and taste.

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Whereas, the arrival of Covid 19 in Pakistan was confirmed in February 2020, as confirmed positive cases were recorded in the four provinces. Although Pakistan is the fifth largest country in terms of population, it ranks 29th among the countries in the world in terms of deaths [1].

On January 22, 2023, 21 new cases of Covid-19 virus were recorded in the capital, Faisalabad, without any deaths due to the virus. Due to the lack of a 100% effective drug that is safe to use in all cases, this prompted scientists, in an attempt to save humanity from this fierce pandemic, to search for alternative medicine to find a medicinal plant that is able to eliminate this virus and has no side effects compared to chemical drugs. Almost 80% of the population of low-income countries depends on the use of medicinal plants in the treatment and prevention of many diseases, including respiratory diseases. The strong momentum in the use of medicinal plants is due to their availability, ease of obtaining, low cost, and side effects [2].

Since the spread of the Covid 19 virus, the demand for medicinal plants has increased, especially after the World Health Organization declared the necessity of relying on natural sources for nutrition and raising the immune system [3]. Ethnic survey of plants is used to provide medical information about plants that can be used in these cases to obtain the desired results.

Herbs are used by people all over the globe to treat a variety of illnesses. TraditionalChinese medicine (TCM) is effective without or few adverse effects, that synthetic medication cannot replace it.TCM is efficient in COVID-19 healing also [4]. The pharmacological characteristics of this type of plant play an essential role in recording individuals' knowledge about contemporary medicine [5]. Environmentalists, taxpayers, pharmacists, aquaculture specialists, and zoologists can all benefit from plant medical information. Facilitate and encourage economic growth in the community [6, 7].

Vegetables from China are well-integrated into traditional Chinese health systems. There has recently been a rising movement to assess the ethnobotanical usage of medicinal plants and to adopt a systematic approach to their treatment [8]. According to the World Health Organization, traditional medicine (typically vegetarian) is used by 80% of the world's population to satisfy their everyday health needs [9, 10]. There are around 2.5 species of the aforementioned raki crops

worldwide, with approximately 6% having been researched and evaluated for viability and medicinal potential [11, 12].

Foods and treatments from the past should not be overlooked [13, 14]. A variety of therapeutic plants have been investigated for their pharmacology and medical qualities all around the world [15-17]. For the protection and use of living creatures, ethnobotanical studies are vital for recording citizens' knowledge. Hepatotoxic, anti-ulcer, anti-inflammatory, anti-inflammatory, hepatic stimulation immunomodulator and anti-carcinogen are only a few of the compounds found in 120 plants that are used medicinally in various nations across the world [18-20]. Approximately 60% of authorizedvaccinations today are derived directly or indirectly from plants [21, 22].

Paclitaxel, etoposide, camptothecin, vinblastine, vincristine, opariponin, and 22-epicalamysterin are examples of natural plant-derived medicines with potent anti-inflammatory properties [23, 24]. This study was conducted in order to identify the medicinal plants used to cure various ailments in the Faisalabad district of Pakistan, Tehsil Faisalabad, due to the demand for traditional medicine [25].

Materials and Methods

The survey was carried out in District Faisalabad, Pakistan, which is located at coordinates 31° 25' 7.3740" N and 73° 4' 44.7924" E. The gardener and the parents provided information.

Results and Discussion

Keeping track of these sorts of exams can assist you in grasping the fundamentals. The study listed scientific names, surnames, popular names.

In this study, 70 species of medicinal plants belonging to 39 different families were used in the treatment of Covid 19, and it was found that the most used species were 12 species from the Rutaceae family (Table 1).

Table 1. Name of the ethnomedicinal plants, family, use parts, uses, and dosages.

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Sl. No	**Plant Name (Identification No., If Any)**	**Local Name**	**Family**	**Parts Used**	**Uses**	**Dosage**
1	*Acacia nilotica*L. Delile	kekar, gum Arabic	*Leguminosae*	pod, bark, leaves	toothache, liver disorders, and COVID-19	5-7 g
2	*Achilleamillefolium*L.	Yarrow	*Compositae*	leaves, flowers	amenorrhea, leucorrhea, dyspepsia, flatulence, diarrhea, and COVID-19	3-5 g
3	*Allium sativum*L.	lehsan, garlic	*Amaryllidaceae*	Bulb	Hypertension and COVID-19	2-5 g (raw), 0.4-1.2 g (powder), 2-5 mg (oil)
4	*Aloe barbadensis*Mill	kawargandal, ghee kawar, aloe vera	*Liliaceae*	Leaves	rheumatism, wound eruption, leucorrhea cold, cough, hypertension, andCOVID-19	125-500 mg
5	*Althaeaofficinalis* L.	reshakhatimi	*Malvaceae*	leaves, roots, flowers	Cough and COVID-19	5-7 g
6	*Anethumgraveolens* L.	soya, dill	*Apiaceae*	seeds, leaves, fruits	stomach troubles, gripping of purgatives, dill water to relieve flatulence, indigestion in children, and COVID-19	2-7 g

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7	*Azadirachtaindica* A.Juss	neem	*Meliaceae*	root, bark, flowers, leaves	hysteria, amenorrhea, earache, rheumatoid arthritis, gout, syphilis, and COVID-19	6-12 g
8	*Bauhinia variegate* L.	mountain ebnoy, kachnar, orchid tree	*Leguminosae*	bark, roots, leaves, seeds, fruit	chronic diarrhea, dysentery, hepatic congestion, vaginal discharge, hematuria, bleeding piles, skin diseases, ulcers,leprosy, and COVID-19	30-60 ml
9	*Berberisaristate* DC	zarishk, darhaldsumbalo	*Berberidaceae*	fruit, stem, roots	ophthalmia, spleen and liver enlargement, piles, jaundice, chronic skin diseases, periodic neuralgia, remittent fever, bilious fever, and COVID-19	2-5 g
10	*Bergeniaciliata* (Haw.) Sternb.	bud mawa, zakhmehayat	*Saxifragaceae*	Rhizome	wound infarction and COVID-19	1-3 g
11	*Brassica napus* L.	tukhmshalgham	*Brassicaceae*	Seed	kidney stones and COVID-19	1-3 g
12	*Calendula officinalis* L.	pot marigold	*Compositae*	Flowers	conjunctivitis, burns, eczema, intestinal problems, smallpox, measles, and COVID-19	3-5 g
13	*Cichoriumintybus*L.	Kasni	*Asteraceae*	flowers, roots, leaves	treatment of jaundice and COVID-19	3-5 g

14	*Citrus aurantiifolia* (Christm.) Swingle	lime, lemon	*Rutaceae*	juice, peel	dyspepsia, flatulence, vomiting, bilious diarrhea, scurvy, anemia, hepatic, and cardiac disorders, and COVID-19	6 g
15	*Colchicum luteum* Baker	mamona, suranjantalkh	*Colchicaceae*	Rhizomes	Gout and COVID-19	125-375 ml
16	*Coriandrumsativum* L.	kishniz, coriander	*Apiaceae*	seeds, stems, leaves	dyspepsia, flatulence, vomiting, bilious affections, rheumatism, neuralgia, bleeding piles, ulcers, carbuncles,eyewash, and COVID-19	5-7 g
17	*Daturainnoxia*Mill	Datura	*Solanaceae*	leaves, seeds, fruit	asthma, cardiac pain and distress, toothache, earache, dandruff, patchy baldness, boils, soreness,malariaand COVID-19	30 mg
18	*Daucuscarota* L.	tukhmgazar	*Apiaceae*	Root	Diuretic,urinary tract infections, and COVID-19	2-5 g
19	*Dioscoreadeltoidea* Wall. exGriseb.	kalaganda	*Dioscoreaceae*	Roots	pelvic inflammatory diseases and COVID-19	2-3 g
20	*Elettariacardamomum*(L.) Maton	elaichikhurd	*Zingiberaceae*	dried ripe fruits, seeds	dyspepsia, flatulence, spasmodic affections of bowels, nervous	0.5-1 g

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					depression, vomiting, and COVID-19	
21	*Ficuscarica* L.	Fig	*Moraceae*	Fruit	smallpox and chickenpox. Constipation,flatulence and COVID-19	3-7 numbers of figs
22	*Foeniculumvulgare* Mill	Badian	*Apiaceae*	flowers, green leaves	cough, fever, body ache, and abdominal pain. anti-flatulent in children and COVID-19	5-7 g
23	*Geranium wallichianum*D.Don ex Sweet	Ratanjot	*Geraniaceae*	Roots	peptic ulcer, duodenal ulcer, rheumatoid arthritis,gout, and COVID-19	3-5 g
24	*Meliaazedarach* L.	Drek	*Meliaceae*	Leaves	jaundice, bloody piles, anemia, eczema, pimples,anthelmintic agent, and COVID-19	0.25 - 1 g
25	*Menthaarvensis*L.	Peppermint	*Labiatae*	leaves, stem	diuretic ,digestive and COVID-19	3 - 5 g
26	*Mentha x piperita*L.	marsh mint, field mint, podina, foodanj	*Lamiaceae*	Leaves	fever, hiccup, neuralgia, bronchitis, cholera, sinusitis, chronic indigestion, stomach debility, and COVID-19	3 - 5 g
27	*Morusnigra*L.	kala toot, mulberry	*Moraceae*	root, leaf, fruit	bad thorax, stomach worms, and COVID-19	60 - 120 g

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28	*Lawsoniainermis*L.	Mehndi	*Lythraceae*	leaves, seeds, bark, flower	headache, burning sensation, cough, boils, burns, hair dyesa,dysentery and COVID-19	60 - 120 g
29	*Linumusitatissimum*L.	Linseed	*Linaceae*	Seeds	sedative for intestine, antiphlegmatic,phlegmaticdysentery, and COVID-19	5 - 12 g
30	*Ocimumbasilicum* L.	sweet basil, holy basil, common basil, tulsi, rehaan.	*Lamiaceae*	leaves, roots, seeds	gonorrhea, gastric and hepatic disorders, cough, bronchitis, malarial fever, cardiac debility, palpitation, earache, mouth ulcer and infection,inflammation, COVID-19	5 - 7 g
31	*Piper nigrum* L.	black pepper	*Piperaceae*	Fruit	cholera, dyspepsia, flatulence, diarrhea, vitiligo, leukoderma, blind ulcers, asthma, phlegmatic cough, inflammation of the spleen, toothache, sore throat,hoarseness of voice and COVID-19	1 - 2 g
32	*Pistaciaintegerrima* J.L. Stewart ex Brandis	Kakra	*Anacardiaceae*	Pod	cough, asthma, fever, vomiting,diarrhea, and COVID-19	1 - 2 g
33	*Portulacaoleracea* L.	khurfa, kulfa	*Portulacaceae*	seeds, leaves	liver, spleen, and kidney diseases, tumors, inflammation of the liver, ulcers, asthma, diarrhea,	3 - 5 g

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					dysentery, intestinal worms, piles, vomiting, and COVID-19	
34	*Prunusarmeniaca*L.	apricot, khubani	*Rosaceae*	fruits, seeds, leaves	intestinal worms,diarrhea, and COVID-19	3-5 g
35	*Prunuscommunis*Huds.	cherry plum, bukhara plum	*Rosaceae*	fruit, seeds, and root	bilious fever, headache, dyspepsia, nausea, vomiting, enlargement of livepil, gonorrhea, piles, and COVID-19	3-5 g
36	*Polygonumdichotomum*Blume	Vietnampl ant	*Polygonaceae*	whole plant	Neuralgia,gonorrhea, and COVID-19	3-5 g
37	*Prunusamygdalus*Stokes	almond**,** badam	*Rosaceae*	kernel, oil	burning sensation, cough, peptic ulcer, and COVID-19	15-20 g
38	*Punicagranatum* L.	pomegran ate, anar	*Lythraceae*	seeds, flowers, and fruit peel	syphilis, diarrhoea, diabetes, epistaxis,gastritis, and COVID-19	3-4 g
39	*Prunuspersica* (L.) Stokes	peach, aaru	*Rosaceae*	Seeds	anthelmintic, dysmenorrhoea, amenorrhoea,constipation, and COVID-19	5 - 10 g
40	*Prunusarmeniaca* L.	apricot**,** khubani	*Rosaceae*	Seed	indigestion, freckles,skindiseases, and COVID-19	2-5 g
41	*Prunusdomestica* L.	plum**,** Alu Bukhara	*Rosaceae*	Fruits	nausea, flatulence, colic, dyspepsia,debility, and COVID-19	5-7 g

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42	*Quercusrubra* L.	common oak, eeru	*Fagaceae*	bark, galls	rectal bleeding, anal fissure, haemorrhoids, nasal polyps, and COVID-19	10 - 15 g
43	*Ranunculus ficaria* L.	pilewort, babarpavi	*Ranunculaceae*	aerial parts	Haemorrhoids and COVID-19	7-9 g
44	*Ricinuscommunis*L.	castor bean, arand, harnolee	*Euphorbiaceae*	Seeds	constipation, rashes, boils, breast tumours,inflammations, and COVID-19	6-8 g
45	*Robiniapseudoacacia* L.	pohli, black locust, keeker	*Leguminosae*	Bark	toothache, tumors, constipation, and COVID-19	8-9 g
46	*Rosa damascena*Gren. ExH.Christ	rose, gulab	*Rosaceae*	Flowers	inflammation of the eyes, diabetes, skin diseases, and COVID-19	5-8 g
47	*Rosa multiflora*Thunb.	baby rose, chall	*Rosaceae*	flowers, fruits	hyperglycemia, constipation, articular pain,and COVID-19	8-9 g
48	*Rubusfruticosus*auct. (L.)	blackberry, pagnaru	*Rosaceae*	leaves, berries	spongy gums, mouth ulcers, sore throat, mouthgargles, and COVID-19	2-3 g
49	*Rubusidaeus* L.	raspberry, rusbury, aakhriar	*Rosaceae*	leaves, fruits	wounds, conjunctivitis, vaginal discharge ,ulcers and COVID-19	3-5 g
50	*Sambucusnigra* L.	elder bush, elder tree	*Adoxaceae*	flowers, berries	inflammations, skin disease, kidney	10 - 12 g

					diseases, and COVID-19	
51	*Solanumnigrum* L.	black night-shade, maku, kachmach	*Solanaceae*	whole plant	hepatitis, mouth sore, splenomegaly, cough, asthma, and COVID-19	5-6 g
52	*Solanumviride*Schur.	green night-shade, peelikachmach	*Solanaceae*	Leaves	conjunctivitis, breast tumors, suppurative infections and COVID-19	10 - 12 g
53	*Stellaria media* (L.) Vill.	chickweed, ladru	*Caryophyllaceae*	aerial parts	itch, arthritis, indigestion, eczema, varicose ulcers, and COVID-19	8-9 g
54	*Trifoliumarvense* L.	clover,sree	*Leguminosae*	Flowers	menopause, skin diseases, spasmodic,cough, and COVID-19	10-12 g
55	*Trigonellafoenum-graecum* L.	fenugreek, meth, methrion	*Leguminosae*	leaves, seeds	boils, abscesses, ulcers, smallpox, and COVID-19	5-8 g
56	*Tribulusterrestris*L.	land caltrops, phoojpatar, phalli	*Zygophyllaceae*	whole plant	haemoptysis, dyspepsia,renal/ vesical calculi dysuria, and COVID-19	8-10 g
57	*Valerianawallichii* DC.	indian valerian, asaroon	*Caprifoliaceae*	Roots	constipation, jaundice, cardiac debility,cough, and COVID-19	5-8 g
58	*Verbascumthapsus* L.	Mullein	*Scrophulariaceae*	Flowers	wounds, bronchitis,productive	2-3 g

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					cough, and COVID-19	
59	*Verbena officinalis* L.	Vervain	*Verbenaceae*	aerial parts	nervine tonic, cholestasis, psychogenic disorders, and COVID-19	3-4 g
60	*Vinca minor* L.	lesser periwinkle	*Apocynaceae*	Leaves	sore throat, gingivitis, arteriosclerosis,dementia, and COVID-19	8-9 g
61	*Viola odorata* L.	sweet violet**,** banafsha**,** gulnaksha	*Violaceae*	Flowers	sore throat, productive cough, hoarseness of voice,fever, and COVID-19	3-4 g
62	*Xanthium strumarium* L.	ditch bur**,** jungleejui	*Compositae*	roots, leaves, fruits	leucorrhoea, malaria, hydrophobia,smallpox, and COVID-19	8-9 g
63	*Ziziphusmauritiana* Lam.	indian jujube, beri**,** Beirut	*Rhamnaceae*	fruit, whole plant	pruritus, ophthalmopathy, asthma, vomiting,insomnia, and COVID-19	2-3 g
64	*Punicagranatum*L.	anar, pomegranate, daruna	*Lythraceae*	fruit exocarp	dysentery, menstrual irregularities, and COVID-19	24-60 ml
65	*Ricinuscommunis*L.	hernoli, castor oil, arand	*Euphorbiaceae*	leaves, roots, seeds	swelling, paralysis, warts, freckles, hair tonic, rheumatism,paralysis, and COVID-19	7-12 g

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66	*Rosa indica*L.	Gulab	*Rosaceae*	flower, seed	Eye disorders,heartdisease, and COVID-19	3-5 g
67	*SapindusSaponaria*L.	Rantha	*Sapindaceae*	Fruits	Hair tonic remedies and COVID-19	500 mg-2 g
68	*Solanumnigrum*L.	kainchmainch, nightshade	*Solanaceae*	Leaf	Sedative, diaphoretic, diuretic, laxative, tonic, abnormal, and painful ears secretions, and COVID-19	5-7 g
69	*Syzygiumcumini*L. Skeels	jaman, jambolana	*Myrtaceae*	Seed	Diabetes and COVID-19	3-5 g
70	*Trachyspermumammi*L.	Ajwain	*Umbelliferae*	fruit, root.	It is carminative, diuretic, stimulant, tonic, antiseptic, stomachic, abdominal pain, indigestion,diarrhea, and COVID-19	3-5 g

The majority of the interviewees were in their 50s and 60s. The residents of Faisalabad have a lot of information about the plants that thrive in their region, according to this research. The community wishes to spread its message to as many people as possible.This research is necessary in order to preserve information about Faisalabad therapeutic plants. Several plants were registered for the treatment of various illnesses in this investigation.

The study proved the possibility of benefiting from all parts of plants, each according to the disease condition. It was found that it is possible to use different plant parts such as pod, bark, leaves, flowers, bulb, roots, seeds, fruits, stem, rhizome,juiceand peel, both according to the plant used, and the disease used in it.

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Where the study proved that it is one of the most used families in the treatment of Covid 19 Leguminosae, Compositae, Apiaceae, Meliaceae,Lamiaceae, Moraceae, Lythraceae, Rosaceae, Euphorbiaceae (Figure 1).

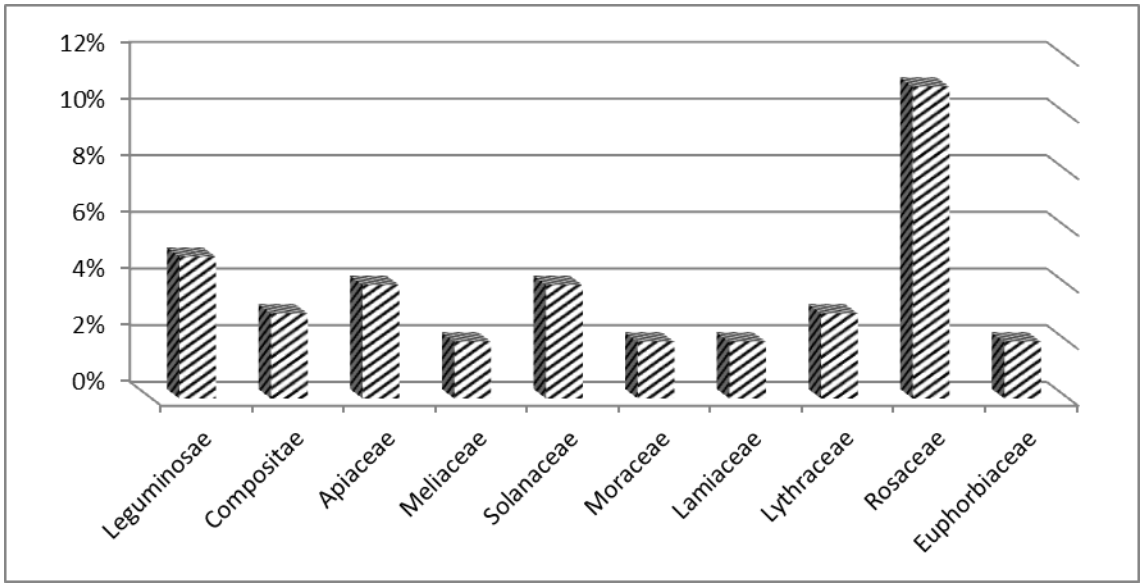


Figure 1. Frequency of plant family used for treating COVID-19

Where each family contains two or more types of plants used in treatment. One of the most effective families used in the treatment of Covid 19 is the Rosaceae family, which contains 11 species [26].

The study also proved the effectiveness of using different parts of the plant in treating Covid 19, including bark, seeds, flower, fruits, leaves, rhizomes, pod, stem and root.

Where it was found that the leaves of plants were the most effective parts in treating Covid 19, then the fruits, seeds, flowers, and roots (Figure 2).

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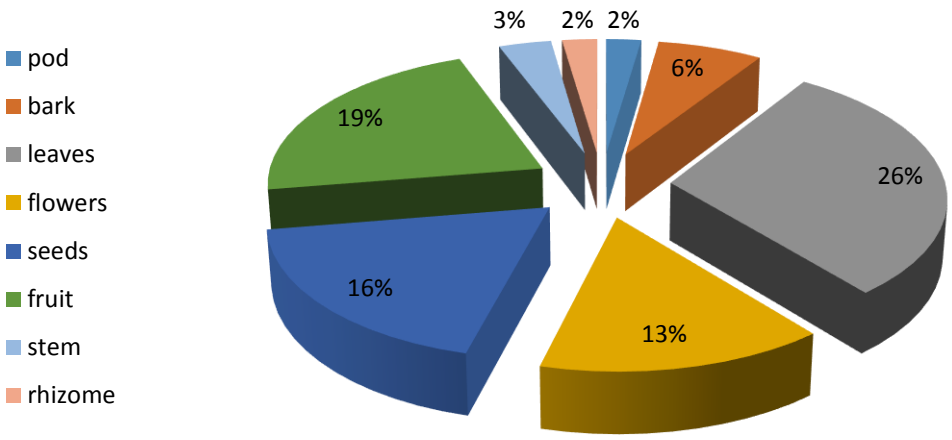


Figure 2. Frequency of plant parts used for treating COVID-19

Numerous studies have proven the effectiveness of leaves and stems as the most used parts of medicinal plants in the treatment of many diseases [27, 28].

The reason for the widespread use of leaves of medicinal plants is due to the availability of its spread, ease of access and collection [29]. The reason may also be that those aerial parts such as leaves work on the process of photosynthesis, which contributes to the formation of many secondary metabolite compounds, which have an effective role in strengthening the immune system in addition to their antiviral properties [30, 31]

In medicine and ethnobotany, phytopharmacology and the literatureonthese plants are extremely significant. As a result, this sort of study assists in the creation of novel methods and medicines [32, 33]. Traditional medicine persists, despite advances in the healthcare system, according to this research.Suppliers' extensive agreements demonstrate that current usage and expertise are still robust [34]. Before much is done, receiving knowledge today shows a balanced perspective of

things. Clinical trials make it feasible for future generations to learn about herbal medicine (our natural inheritance) [35, 36].

Conclusion

Herbal and traditional remedies have a long history. According to this study, the remote village of Faisalabad is well-known for its medicinal herbs. This research is needed to learn more about the pharmacological qualities that Faisalabad inhabitants utilize. However, scientific research is needed to determine the efficacy of these therapeutic herbs. The study indicated the possibility of using many plants in the treatment of Covid 19, but it is necessary to conduct many toxicological studies on these plants to ensure the extent of their safety and the absence of a poison effect on humans and to know the appropriate dose for them.

References

[1]. Jinghong, Y., Irshad, M. J., Irshad, M., Khalil, I., Zahoor, S., Akram, M., ... & Kiliç, Ö. (2022). Impact of the coronavirus pandemic on mental prosperity of medical care laborers in tertiary consideration hospital: A case report. Medicine, 101(32), e29485.

[2]. Mbaba, A. N., Ogolodom, M. P., Abam, R., Akram, M., Alazigha, N., Nwodo, V. K., ... & Anene, C. N. (2021). Willingness of health care workers to respond to covid-19 pandemic in Port Harcourt, Nigeria. Health Science Journal, 15(2), 1-8.

[3]. Elbossaty, W. F. (2021). Potential Effect of Micrornas as Biomarkers and Therapeutic Targets in COVID-19. Health, 20(5), 556046.

[4]. Wang, F. C., Han, P., Li, H., Ye, H. Y., Zhou, P. X., Tian, W., ... & Lu, X. C. (2023). Advantages and prospects of traditional Chinese medicine in treating COVID-19. Trad Med Res, 8(4), 22.

[5]. Cox, P. A. (2000). Will tribal knowledge survive the millennium? Science, 287(5450), 44-45.

[6]. Mahmood, A., Qureshi, R. A., Mahmood, A., Sangi, Y., Shaheen, H., Ahmad, I., & Nawaz, Z. (2011). Ethnobotanical survey of common medicinal plants used by people of district Mirpur, AJK, and Pakistan. J Med Plants Res, 5(18), 4493-4498.

[7]. Ibrar, M., Hussain, F., & Sultan, A. (2007). Ethnobotanical studies on plant resources of Ranyal hills, District Shangla, Pakistan. Pakistan Journal of Botany, 39(2), 329.

[8]. Fabricant, D. S., & Farnsworth, N. R. (2001). The value of plants used in traditional medicine for drug discovery. Environmental health perspectives, 109(suppl 1), 69-75.

[9]. World Health Organization. (1998). Regulatory situation of herbal medicines: a worldwide review.

[10]. Shinwari, M. I., Maryum (Ibrar) Shinwari, & Shah, M. (2007). Medicinal Plants of Margallah Hills National Park Islamabad. Higher Education Commission.

[11]. Scotland, R. W., & Wortley, A. H. (2003). How many species of seed plants are there?. Taxon, 52(1), 101-104.

[12]. Verpoorte, R. (2000). Pharmacognosy in the new millennium: leadfinding and biotechnology. Journal of pharmacy and pharmacology, 52(3), 253-262.

[13]. Begossi, A. (1998). Food taboos-a scientific reason. Plants for food and medicine, 41-46.

[14]. Giusti, M. E., Grazzini, A., & Pieroni, A. (2002). Animal remedies in the folk medical pratices of the upper part of the Lucca and Pistoia Provinces, Central Italy. In De sources du savoir aux medicaments du future (pp. 371-375). IRD, Paris.

[15]. Basu, P., Meza, E., Bergel, M., & Maier, C. (2019). Estrogenic, antiestrogenic and antiproliferative activities of Euphorbia bicolor (Euphorbiaceae) latex extracts and its phytochemicals. Nutrients, 12(1), 59.

[16]. Swargiary, A., & Daimari, M. (2021). GC–MS analysis of phytocompounds and antihyperglycemic property of Hydrocotylesibthorpioides Lam. SN Applied Sciences, 3(1), 36.

[17]. Swargiary, A., Roy, M. K., & Verma, A. K. (2021). In vitro study of the antioxidant, antiproliferative, and anthelmintic properties of some medicinal plants of Kokrajhar district, India. Journal of Parasitic Diseases, 45(4), 1123-1134.

[18]. Newman, D. J., & Cragg, G. M. (2007). Natural products as sources of new drugs over the last 25 years. Journal of natural products, 70(3), 461-477.

[19]. Xu, R., Luo, G., Xia, H., He, W., Zhao, J., Liu, B., ... & Wu, J. (2015). Novel bilayer wound dressing composed of silicone rubber with particular micropores enhanced wound re-epithelialization and contraction. Biomaterials, 40, 1-11.

[20]. Tungmunnithum, D., Thongboonyou, A., Pholboon, A., &Yangsabai, A. (2018). Flavonoids and other phenolic compounds from medicinal plants for pharmaceutical and medical aspects: An overview. Medicines, 5(3), 93.

[21]. Fridlender, M., Kapulnik, Y., & Koltai, H. (2015). Plant derived substances with anti-cancer activity: from folklore to practice. Frontiers in plant science, 6, 799.

[22]. Algool, S. A. A., Almozogy, N. A. M., Saud, A. M., & Saa, F. M. A. (2025). Evaluation of Liver Function Markers and Cardiac Isoenzymes in Recovered COVID-19 Patients. Libyan Journal of Medical and Applied Sciences, 14-21.

[23]. Pettit, G. R., Mukku, V. J., Cragg, G., Herald, D. L., Knight, J. C., Herald, C. L., & Chapuis, J. C. (2008). Antineoplastic agents. 558. Ampelocissus sp. cancer cell growth inhibitory constituents. Journal of Natural Products, 71(1), 130-133.

[24]. Cragg, G. M., Grothaus, P. G., & Newman, D. J. (2009). Impact of natural products on developing new anti-cancer agents. Chemical reviews, 109(7), 3012-3043.

[25]. Ibrahim, H. K., Yousuf, A., & Saed, A. (2025). Mental Health in the Pandemic: Addressing Societal Well-being in the Midst of COVID-19. Libyan Journal of Medical and Applied Sciences, 1-6.

[26]. Benkhaira, N., Koraichi, S. I., & Fikri-Benbrahim, K. (2021). Ethnobotanical survey on plants used by traditional healers to fight against COVID-19 in Fez city, Northern Morocco. Ethnobotany Research and Applications, 21, 1-18.

[27]. Lawal, I. O., Rafiu, B. O., Ale, J. E., Majebi, O. E., & Aremu, A. O. (2022). Ethnobotanical survey of local flora used for medicinal purposes among indigenous people in five areas in Lagos State, Nigeria. Plants, 11(5), 633.

[28]. Ahmed, A. A., & Khalifa, H. A. M. Z. A. (2020). E-learning and COVID-19 (Six important pieces of advice for teachers and academic teaching staff). EurAcad Res, 8(2), 1216-1222.

[29]. Ibrahim, H. K., Yousuf, A., Saed, A., Al-Awkally, N. A. M., Ahmed, A. A., & Ali, K. The Most Commonly Used Drugs in Combating the Emerging Corona Virus Disease (Covid-19).

[30]. Ahmad, M., Sultana, S., Fazl-i-Hadi, S., Ben Hadda, T., Rashid, S., Zafar, M., ... & Yaseen, G. (2014). An ethnobotanical study of medicinal plants in high mountainous region of Chail valley (District Swat-Pakistan). Journal of ethnobiology and ethnomedicine, 10, 1-18.

[31]. Eljamay, S. M., Younus, M. M., Elgebaily, E. S., & Khalifa, H. (2022). Relationship between Symptoms Resulting from Taking the Covid-19 Vaccine, Health and Knowledge. East Asian Journal of Multidisciplinary Research, 1(10), 2077-90.

[32]. Rout, S. D., & Pandey, A. K. (2007). Ethnomedicobiology of Similipal biosphere reserve, Orissa. Advances in Ethnobotany: Dehera Dun, 247-252.

[33]. Chauhan, K., Shuklan, P., Raj, A., Ahlawat, S., & Rani, S. (2023). Effect of Hibiscus rosa-sinensis and Camel Milk on the Reproduction of Diabetic Male Albino Rats–A Review. Bulletin of Pure & Applied Sciences-Zoology, (2).

[34]. Ibrahim, H. K., Ahseen, N. A., Ahmed, T. I., Ahseen, N. A., Al-Awkally, N. A. M., & Yousuf, A. (2022). Evaluation of dexamethasone effects in COVID-19 treatment. International journal of health sciences, 6(S1), 546-554.

[35]. Ibrahim, H. K., Al-Awkally, N. A. M., Samad, A., Zaib, W., & Hamza, M. (2022). COVID-19 pandemic and its impact on psychological distress, malignancy and chronic diseases: A scoping review. Eduvest-Journal Of Universal Studies, 2(5), 1017-1021.

[36]. Muthanna, F. M., Ibrahim, H. K., Al-Awkally, N. A. M., Yousuf, A., &Mounich, K. (2022). C-reactive protein in patients with COVID-19: A scoping review. International journal of health sciences, 6(S5), 1610-1620.