

Review article

A REVIEW ON: ITCH-CAUSING AND ITCH-RELIEVING PLANTS

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Abstract

Background: *Recent Years have seen an increase in the number of allergic patients worldwide. Statistics from across the world have proven a high risk for skin diseases associated with plant contact. Therefore, plant-induced allergies are of increasing attention in medicine. However, there are relatively little data available in the scientific literature concerning the common adverse effects of plants like itching. Thus, an exhaustive list of allergenic plants is essential for risk avoidance and the diagnosis of allergy reactions.* **Objectives:** *The objective of this review is to collect plant species that causes itching as well as that relief itching and to study their different phytoconstituents present in those plant species available in the literature.* **Methods:** *Extensive literature survey was carried out through various databases like Google Scholar, PubMed, scopus etc. and the information were collected and analyzed, and compiled according to the ethnobotanical, phytochemical and pharmacological indications of plants.* **Results and Discussion:** *From the literature survey that was carried out, the information's are categorized as (a) Plants causing itching (b) Plants used for the treatment of itching (c) Category of major compounds found in some of the itching plants (d) List of a few isolated compounds from the itching plants. All the plants have been arranged alphabetically by their scientific names.* **Conclusion:** *Only a small number of plants have been studied in well-designed clinical trials. Thus, in order to establish the active elements responsible for itching as well as the therapeutically active*

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chemicals that alleviate itching, additional research with greater level of in-depth inquiry is required.

Keywords: Itch-Causing, Itch-relieving, Pruritus, Phytoconstituents

Introduction

Throughout history, humans have utilized plants for food, medicine, clothing, and protection. Through experience, humans have learned to identify and avoid plant species that cause undesirable consequences such as food poisoning, skin irritations, hay fever, and seasonal asthma, etc. Some of these human responses to plants are triggered by mechanical harm or by toxic or irritating plant components, and they occur in all individuals who come in contact with the plant. As plants are ubiquitous and possess a variety of harmful physical and chemical qualities, plant-related skin responses are common. It is estimated that 50% of occupational skin diseases in agriculture are caused by plants, trees, and natural vegetation.

Recent years have seen an increase in the number of allergic patients worldwide. Statistics from across the world have proven a high risk for skin diseases associated with plant contact. Therefore, plant-induced allergies are of increasing attention in medicine. Moreover, the increasing popularity of plant extracts in cosmetics (tonics, soaps, shampoos, creams) and massage or aromatherapy fragrance oils raises the chance of contact with hazardous substances. Multiple allergens have been identified and described, and their role in triggering the allergic reaction has been determined. However, because of the relatively little data available in the scientific literature concerning the common adverse effects of plants like itching, this current work was carried out to identify and document the allergens or compounds responsible for generating itching, which will serve as a valuable preventative tool when we come into contact with such plants that cause itching and discomfort. An exhaustive list of allergenic plant is essential for risk avoidance and the diagnosis of allergy reactions. In addition, a fundamental understanding of plant-induced allergic contact dermatitis and the common plants that produce each type can assist susceptible persons to identify the source of their dermatitis and thereby prevent re-exposure.[1]

Itch, also known as pruritus, was defined by the German physician Samuel Hafenreffer 350 years ago as "an unpleasant sensation that induces the desire or impulse to scratch." Itch is a distressing everyday sensation that induces a desire to scratch. These conditions account for approximately 34% of all occupational diseases encountered globally. According to data on the prevalence of pruritus, 8-9 percent of individuals had acute pruritis at some point in their lives. Recent research

indicates that the prevalence of pruritis in the overall adult population is around 13.5%. Despite its prevalence, pruritus has only recently attracted significant attention [2]. Exciting developments in somatosensory physiology over the past decade have led us to recognize itching as a unique sensory modality within the somatosensory system (along with the other senses of pain, temperature, touch, and proprioception). Itch is encoded by genetically distinct neurons in both the peripheral nervous system (PNS) and the central nervous system (CNS). Yet itching also interacts with the other sensory modalities at various sites, from its beginning in a specific dermatome to its transmission to the brain, where it is finally experienced [3].

Herbal treatments have a long medical history and played a significant role in the spectacular medication advancements of the 1960s, beginning with basic initiatives such as the use of Withering's foxglove for cardiac problems and culminating with the discovery of reserpine from *Rauwolfia* in the 1960s. Numerous herbs have been proposed as corticosteroid-sparing medicines, which, if widely accepted, could offer an attractive alternative to the cutaneous adverse effects of strong topical corticosteroids. Alternative treatments for pruritus are a challenging problem. Currently, practitioners have limited access to FDA-approved (i.e., approved by the U.S. Food and Drug Administration (FDA) and listed in drug package inserts) medicines. The treatment of urticaria, which is traditionally one of the most severe pruritic disorders, or atopic dermatitis is frequently the closest one can approach to an indication for pruritus. Decades ago, Sulzberger referred to atopy as "the itch that rashes," thus the standard treatment for pruritus is indeed a fairly brief subject [4].

Materials and methods

Extensive literature search was carried out using search engines viz. PubMed, Scopus, Web of Science and Google Scholar from March 2022 to May 2022. A range of articles have been retrieved; some of the important articles have been selected to compile the ethnobotanical, phytochemical and pharmacological indications of plants.

Results

The information retrieved from various sources are categorized as (a) Plants causing itching (Table-1), (b) Plants used for the treatment of itching (Table-2), (c) Category of major compounds found in some of the itching plants (Table-3), (d) List of a few isolated compounds from the itching plants (Table-4).

All the plants have been arranged alphabetically by their scientific names, and are presented below.

Table 1: Plants causing itching

Sl. No.	Scientific name	Common name (English)	Family	Plant part(s) used	Constituents	Ref.
1.	<i>Urtica dioica</i>	Stinging nettle	Urticaceae	Leaves Stem	Histamine, Acetylcholine, Serotonin	[6]
2.	<i>Laportea canadensis</i>	Wood nettle	Urticaceae	Leaves Stem	Terpenes and terpenoids.	[7]
3.	<i>Plumbago auriculata</i>	Leadwort	Plumbaginaceae	Sap, Leaves Roots	Epi-isoshinanolone, plumbagicacid,	[8]
4.	<i>Toxicodendron</i>	Poison oak	Anacardiaceae	Leaves Barks Stems	Urushiol, hydrourushiol, pentadecylcatechol	[9]
5.	<i>Colocasia esulenta</i>	Taro	Araceae	Leaves	Calcium minerals calcium	[10]
6.	<i>Mangifera indica</i>	Mango	Anacardiaceae	Fruits Exocarp	Urushiol, Catechols	[11]
7.	<i>Toxicodendron radicans</i>	Poison ivy	Anacardiaceae	Fruits, Bark	Urushiol	[12]
8.	<i>Toxicodendron vernix</i>	Poison sumac	Anacardiaceae	Leaves Sap	Urushiol	[13]
9.	<i>Gluta renghas</i>	Hardwood	Anacardiaceae	Stem Bark	Urushiol Catechols	[14]
10.	<i>Anacardium occidentale</i>	Cashew nut	Anacardiaceae	Fruits pericarp	Cardol, Anacardic acid	[15]

11.	<i>Toxicodendron vernicifluum</i>	Lacquer tree or varnish tree	Anacardiaceae	Exocar p	Urushiol	[16]
12.	<i>Carica papaya</i>	Papaya	Caricaceae	Unripe fruits latex	Papain	[17]
13.	<i>Ginkgo biloba</i>	Maidenhair tree	Anacardiaceae	Flesh of the ovule	Ginkgolic acid	[18]
14.	<i>Parthenium hysterophorus</i>	Santa Maria feverfew	Asteraceae	Fresh plants Pollen	Sesquiterpenes, lactones.	[19]
15.	<i>Walidda antidysenterica</i>	Walida, artic snow milky way	Apocynaceae	Flower	Sesquiterpenes, lactone,	[20]
16.	<i>Helianthus annuus</i>	Sunflower	Asteraceae	Flower pollen	Parthenin, Sesquiterpine, lactones	[21]
17.	<i>Dahlia pinnata</i>	Pinnate dahlia	Asteraceae	Flower pollen	Parthenin Sesquiterpine lactone	[22]
18.	<i>Mikania scandens</i>	Climbing hempweed	Asteraceae	Flower, Pollen	Parthenin, Sesquiterpine lactones	[23]
19.	<i>Holigarna ferruginea</i>	Black varnish	Anacardiaceae	Fruits leaves	Parthenin Sesquiterpine lactone	[24]
20.	<i>Hibiscus esculentus</i>	OkraLady's finger	Anacardiaceae	Stalks Leaves	Urushiol, cellulose, lignin,	[25]
21.	<i>Melanorrhoea usitata</i>	Burmese lacquer	Anacardiaceae	Flowers Leaves	Thitsiol, Phenols, Catechols	[26]

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22.	<i>Allium sativum</i>	Garlic	Amaryllidaceae	Bulb	Alliin, Allicin, Ajoenes, Flavanoids	[27]
23.	<i>Heracleum mantegazzianum</i>	Giant hogweed	Apiaceae	Sap Leaves Stalks	Alkaloids, Coumarins	[28]
24.	<i>Plumeria rubra</i>	Frangipani	Apocynaceae	Leaves flowers	Plumeride, Plumeric acid, β -sterol	[29]
25	<i>Ricinus communis</i>	Castor bean	Euphorbiaceae	seeds	Rutin, Quercetin, Gallic acid	[30]
26	<i>Laportea crenulata</i>	-	Urticaceae	Leaves	12-Oleanane, β -sitosterol	[31]
27	<i>Mucuna pruriens</i>	Velvet bean	Fabaceae	Seed pods		[32]
29	<i>Euphorbia pulcherrima</i>	Poinsettia	Euphorbiaceae	Young stem Leaves	Eupulcherol A	[33]
30	<i>Phoebe hainesiana</i>	Phoebe (Uningthou M)	Lauraceae	Bark	-	-

Table: 2 List of plants that relieve itching

Sl. No.	Scientific Name	Common name	Family	Plants Part	Method of use	Constituents	Ref.
1	<i>Carthamus oxyacantha</i>	Wild safflower	Asteraceae	Seed	Extracted oil is applied on the skin.	Oleic oil, linoleic oil.	[34]
2	<i>Ricinus communis</i> L.	Castor oil plant	Euphorbiaceae	Seed oil	Extracted oil is gently applied	Ricinolic acid, stearic, linoleic.	[35]

3	<i>Fumaria officinalis</i>	Fumitory	Papavaceae	Aerial parts	Decoction of the plant extract is taken orally.	Alkaloids: protopines, protopine, spirobenzyl	[36]
4	<i>Ziziphus nummularia</i>	Wild jujube	Rhamnaceae	Fruit and Leaf	Fruit juice paste is gently applied.	Palmitic acid, linoleic acid, stearic acid, squalene.	[37]
5	<i>Astragalus gossypinus</i>	Milkvetch	Fabaceae	Aerial parts	Aerial parts are made paste and applied	Palmitic, stearic acid, linoleic acid.	[38]
6	<i>Gallium verum</i>	Lady's bedstraw	Rubiaceae	Flowering branch	Dried plant parts are used as flea repellent.	Caryophyllane oxide, germacrene.	[39]
7	<i>Solanum nigrum L.</i>	Black nightshade	Solanaceae	Fruit	Fruit juice is gently applied.	Gallic acid, catechin, protocatechuic	[40]
8	<i>Verbascum thapsus M</i>	Great mullein	Scrophulariaceae	Flower	Heated mullein leaves are applied	Acobin, Polysaccharides: galactose, arabinose	[41]
9	<i>Salix elbursensis Boiss</i>	Indian willows	Salicaceae	Aerial parts	Decoction of aerial parts are taken orally.	Flavonols, flavones, flavonones,	[42]
10	<i>Brassica rapa L.</i>	Wild mustard	Brassicaceae	Root	Dried powder is applied	Arvelexin.	[43]
11	<i>Chrysanthemum coronarium L.</i>	Garland chrysanthemum	Asteraceae	Leaf Flower	Flower paste is gently applied;	Chrysanthinolide A, Chrysanthinolide B	[44]

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					Leaf paste is applied.		
12	<i>Cannabis sativus</i>	Ganja	Cannabaceae	leaves	Leaf paste is applied over itchy area.	Δ -THC (tetrahydrocannabinol)	[45]
13	<i>Mirabilis jalapa</i>	Four o'clock flower	Nctaginaceae	Roots	Decoction of the roots is taken orally.	β -sitosterol stigma sterol	[46]
14	<i>Falcaria vulgaris Bernh</i>	Sickleweed or longleaf	Apiaceae	Leaf Seed	Leaf paste applied the itchy area	Carvacrol, Spatulenul	[47]
15	<i>Teucrium orientale</i>	Garmanders	Lumiaceae	Leaves	Infusion of the leaves is taken orally.	Alpha pinene, Linalool, Germacrene D	[48]
16	<i>Rumex chalepensis Mill.</i>	Patience dock	Polygonaceae	Aerial parts	Decoction of the aerial parts is taken orally.	Dibutyl phthalate, Fleximel, Dodecane	[49]
17	<i>Aloe barbadensis miller</i>	Aloe vera	Xanthorrhoeaceae	Leaf gel	Applied gently on the affected area.	Vitamin B ¹² , folic acid, choline	[50]
18	<i>Curcuma longa L.</i>	Turmeric	Zingiberaceae	Rhizome powder	Used as paste	Turmeone, Atlanton, Zingiberone	[51]
19	<i>Echinaceae purpurea</i>	Eastern purple coneflower	Asteraceae	Aerial parts	Decoction of the aerial parts is taken orally.	Cichoric, Caftaric, Chlorogenic acids.	[52]
20	<i>Anagallis arvensis</i>	Scarlet pimpernel	Primulaceae	Aerial parts	Decoction of the aerial parts is	Arvenin, Anagalligenin, Fatty acid,	[53]

					taken orally.	Palpitic acid	
21	<i>Calendula officinalis</i> L.	Pot marigold	Asteraceae	Flowers	Flowers are dried and powdered and applied	α -, β -amyryns, Faradiol, Isorhmnetin	[54]
22	<i>Matricaria recutita</i> L.	German chamomile	Asteraceae	Flower	Oil is extracted gently applied	α -bisabolol, matricin, apigen luteolin	[55]
23	<i>Althaea officinalis</i> L.	Marsh mallow	Malvaceae	Roots	Infusion of the roots is taken orally to treat itching.	Mucilage polysaccharides:arabinogalactans	[56]
24	<i>Avenae fructus</i>	Oat fruit	Poaceae	Fruit	Decoction of roots in water is used orally to treat itching.	β -glucan, Proteins:glutinin ,avenin, flavonoids.	[57]
25	<i>Symphytum officinale</i> L.	Common comfrey	Boraginaceae	Roots	Roots are crushed and make into a paste	Amine compound: allantion , phenolic acids	[58]
26	<i>Salvia officinalis</i> L.	Common sage	Lamiaceae	Leaves	Decoction of the roots are taken orally	Phenolic acids,	[59]
27	<i>Morus alba</i>	Common mulberry	Moraceae	Roots	Roots are crushed and dried	Sanggenon C, sanggenon E, flavonoids	[60]
28	<i>Morus nigra</i>	Black mulberry	Moraceae	Root, bark	The roots and bark are dried and powdered.	Mornigrol D, norartocarpetin.	[61]

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29	<i>Plantago lanceolata</i> L.	Ribwort plantain	Plantaginaceae	Leaves	Fresh leaves are made into paste and applied	Acteoside, plantamajoside.	[62]
30	<i>Hypericum perforatum</i>	St. John's wort	Hypericaceae	Flower	Flowers are washed and dried	Hyperforin, hypericin,	[63]
31	<i>Oenothera oleum</i>	Evening primrose oil	Onagraceae	Flowers	Decoction of the flowers with water.	γ -linolenic, linoleic.	[64]
32	<i>Quercus cortex</i>	Oak bark	Fagaceae	Bark	The bark dried powder	Suberin, Lignin	[65]
33	<i>Linum usitatissimum</i>	Flax	Linaceae	Flower	Fresh flowers are boiled with water	Galacturonic acid, α -linolenic, linoleic.	[66]
34	<i>Trigonella foenum-graecum</i>	Sickle fruit fenugreek	Fabaceae	Seeds	Seeds are crushed and mixed with water	Glycosides Steroid derivatives	[67]
35	<i>Juglans regia</i> L.	English walnut	Juglandaceae	Leaves	Decoction of the leaves is taken orally	Quercetin, isoquercitrin.	[68]
36	<i>Achillea millefolium</i>	Common yarrow	Asteraceae	Flower	flowers paste	Chamazulene	[69]
37	<i>Hamamelidis virginiana</i> L.	Witch-hazel	Hamamelidaceae	Bark	Decoctions & infusions of bark are used.	Hamamelitanin, proanthocyanidins.	[70]
38	<i>Portulaca oleracea</i>	Pigweed, little hogweed,	Portulacaceae	Leaves	Leaves are crushed and paste and applied	Oleracimine, oleracimine A, oleracone A,	[71]
39	<i>Sarcosandra asoca</i>	Ashoka	Caesalpiniaceae	Flower	Decoction of the	Gallic acid, Oleic acid,	[72]

					flowers are taken	Linoleic,	
40	<i>Lavandula officinalis</i>	Lavender	Labiatae	Lavender oil	Drops of essential oil are applied	Cis-thujone, Camphor, Cineole,	[73]
41	<i>Phyllanthus emblica</i>	Indian gooseberry	Phyllanthaceae	Fruits	The fruits juice is	Fisetin, Gallic acid, Ascorbic acid	[74]
42	<i>Erythrina stricta</i>	Indian carol tree	Fabaceae	Bark	The bark is crushed and paste and applied		[75]
43	<i>Achyranthus aspera</i>	Pricklychaff	Amaranthaceae	Leaves Roots	Decoction of the plant is taken orally.	Palmitic, Ricinoleic, Oleic, Myristic	[76]
44	<i>Phlogacanthus thyriflorus</i>	Nees	Acanthaceae	Leaves	Infusion of the leaves is taken along with meals.	Phloganthoside, Pinusolidic acid, Betulin,	[77]
45	<i>Rhus succedanea</i>	Wax tree	Anacardiaceae	Leaves	Decoction of the leaves is taken orally.	Agathisflavone, Robustaflavone,	[78]
46	<i>Azadirachta indica</i>	Neem	Meliaceae	Leaves	Crushed leaves with turmeric powder	Azadirachtin, nimbolinin, nimbin, nimbidin,	[79]
47	<i>Strobilanthes scaber</i>	Nees	Acanthaceae	Young leaf	Apply extract		[80]
48	<i>Artemisia indica wild</i>	Takai	Asteraceae	Leaves	Leaves are crushed, paste and applied	Exiguaflavone A, Maackianin	[81]
49	<i>Cinnamomum</i>	Camphor tree	Lauraceae	Bark	The bark is dried and	(-)-Sesamin, 9 α -, 9 β -	[82]

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	<i>camphora</i>				powdered	hydroxysesamin	
50	<i>Rubus lasinocarpus</i> SM.	Jenbansu tong (N)	Rosaceae	Aerial parts	The aerial parts are crushed, paste and applied		
51	<i>Solanum indicum</i>	African eggplant Kotahi bengana	Solanaceae	Leaves	Decoction of the leaves are used.	Gallic acid, catechin, protocatechuic acid,	[83]
52	<i>Solanum torvum</i>	Turkey berry	Solanaceae	Fruit	Fresh fruits are dried and powdered	Torvanol A, Steroidal glycoside,	[84]
53	<i>Pouzolzia viminia</i>	Wedd	Urticaceae	Young shoot	shoots are grinded and paste is applied		
54	<i>Lantana camara</i> L.	Phukilap(S)	Verbenaceae	Leaves	Decoction of the leaves is taken orally.	(E)- β -caryophyllane, α -humulene,	[85]
55	<i>Cayratia japonica</i>	Gagnep (thumb)	Vitaceae	Leaves	Leaves are crushed, paste and applied.	-	
56	<i>Artemisia nilagiria</i>	Pamp	Asteraceae	Leaves	Leaves are crushed and made into paste	(z)-nerolidol, 1, 8-cineole, yomogi alcohol,	[86]
57	<i>Terminalia reticulata</i> roth	Ink nut	Combretaceae	Leaves	Leaves are crushed and made into paste.	-	
58	<i>Gynura bicolor</i>	Okinawan spinach	Asteraceae	Leaves	Fresh smashed leaves are	hydroxybenzoic acid, protocatechu	[87]

					applied	ic acid,	
59	<i>Alstonia scholaris</i>	Devil's tree	Apocynaceae	Stem bark	The stem and bark are crushed and powdered and applied	cycloeucalenol, Amyrin acetate,	[88]
60	<i>Bidens biternata</i>	Black-jacks	Asteraceae	Leaves	Leaves are crushed, paste and applied	1-phenylheptate 1,3,5-tryne	[89]
61	<i>Euphorbia thymifolia</i>	Choti-dudhi	Euphorbiaceae	Whole plant	plant is crushed, paste and applied	Rutin, Quercetin	[90]
62	<i>Geranium nepalense</i>	Nepalese Crane's Bill	Geraniaceae	Whole plant	Mix powder of the plant and turmeric powder and mustard oil and apply	Kaempferol, Kaempferol-7-O- β -D-glucopyranoside	[91]
63	<i>Strychnos nux blanda</i>	A.W.Hill	Strychnaceae	Leaves	Decoction of the extract is applied	Strychnine, Brucine, α & β - Colubrine, Vomisine,	[92]

Table 3: Category of major compounds found in some of the itching plants

Sl. No.	Scientific name	Plant part	Constituents	Reference
1.	<i>Urtica dioica</i>	Leaves	Amino acid, Organic acid, Steroid, Terpenoids, Fatty acid, Phenolic compounds	[93]
2	<i>Laportea Canadensis</i>	Leaves	Terpene/terpenoids, Fatty acid, Tocopherols, Sterols,	[94]

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			Vitamin E	
3	<i>Plumbago auriculata</i>	Leaves	Plumbagin, α -Amyrin and α -anyrin acetate, Capensisone, Isoshinanoline	[95]
4	<i>Colocasia</i>	Leaves	Starch, Mucilage, Dihydroxystrols, Fats, Calcium oxalate	[96]
5	<i>Carica papaya</i>	Unripe fruits latex	Alkaloids, Flavonoids, Amino acids.	[17]
6	<i>Parthenium hysterophorus</i>	Leaves	Flavonoids, Alkaloids, Terpenoids	[19]
7	<i>Helianthus annuus</i>	Flower pollen	Flavanoids, Proteins, Carbohydrates	[21]
8	<i>Dahlia pinnata</i>	Flower pollen	Flavanoids, Polyacetylenes	[22]
9	<i>Mikania scandens</i>	Flower pollen	Phytosterols, Terpenoids, Flavanoids	[23]
10	<i>Holigarna ferruginea</i>	Leaves	Alkaloids, Phenols, Tannins	[24]
11	<i>Walida antidysenterica</i>	Flower	Alkaloids, Flavanoids, Phenolics	[20]
12	<i>Ginkgo biloba</i>	drupe like ovule	Carotenoids, triterpenes, polyprenol, flavonoids, flavanols, Phenolics, apigenin	[18]
14	<i>Pheobe hainesiana</i>	Bark	Alkaloids, Terpenoids, Flavanoids, Lignans, Steroids	[97]
15	<i>Euphorbia pulcherrima</i>	Leaves	Alkaloids, Steroids, Terpenoids, Saponins, Amino acid	[33]
16	<i>Mucuna pruriens</i>	Seed pods	Alkaloids, Flavanoids, Tannins, Phenolics	[32]
17	<i>Laportea crenulata</i>	Leaves	Triterpenes, sterols, Flavanoids, Ligans, Sesquiterpines,	[31]
18	<i>Ricinus communis</i>	Outer coating	Alkaloids, Saponin, Tannin, Lignin, Protein,	[35]

		of seeds	Carbohydrate, Suberin, Glycoside, Steroids	
19	<i>Plumeria rubra</i>	Leaves	Iridoids, Terpenoids, Flavanoids, Alkaloids	[29]

Table 4: List of a few isolated compounds from the itching plants

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Sl. No	Scientific name	Compound isolated	Extracting solvent	Ref.
1.	<i>Urtica dioica</i>	Quercetin-3-O-rutinoside, kaempferol-3-O-rutinoside, isorhannetin-3-O-glucoside, Peonidin-3-O-rutinoside, rosinidine-3-O-rutinoside, Peonidine-3-O-(p-coumaroyl glucoside), Diocanol, β -Amyrin, β -sitosterol, stigmasterol, oleanolic acid.	Methanol 70% ethanol Ethyl acetate	[98] [99] [100]
2	<i>Mangifera indica</i>	Mangiferolate B, isoambolic acid, (-)-epicatechin-3-O- β -glucopyranoside, 5-hydroxy-3-(4-hydroxyphenyl) pyrano[3,2-g]chromene-4(8H)-one, quercetin-3-O- α -glucopyranosyl-(1 \rightarrow 2)- β -D-glucopyranoside, (-)-epicatechin(2-(3,4-dihydroxyphenyl)-3,4-dihydro-2H-chromene-3,5,7-triol,	Methanol Methanol	[101] [102]
3	<i>Colocasia esculenta</i>	hexadecanoic acid methyl ester, octadecanoic acid, 9,12-octadecadienoyl chloride, 11-octadecenoic acid methyl ester, 9-octadecenoic acid, 3-hexadecyloxycarbonyl-5-(2-hydroxyethyl)-4-methylimidazolium, hexanedioic acid, bis(2-ethylhexyl)ester, 3,5-di- <i>t</i> -butyl phenol. 1-O-feruloyl-d-glucoside, 1-O-caffeoyl-d-glucoside.	Methanol/c hloroform Ethyl acetate, n-butanol	[103] [104]

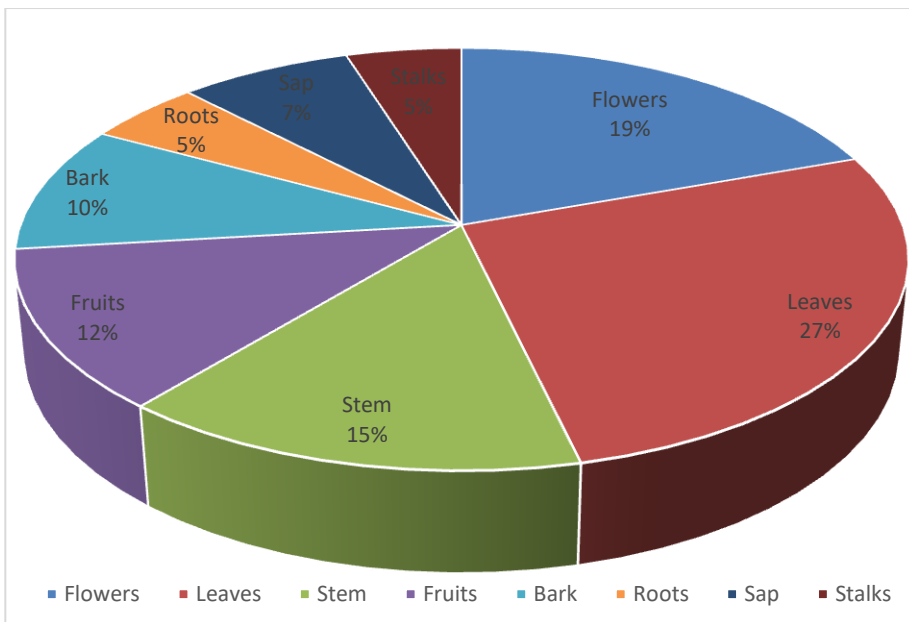


Fig 1: Plant parts causing itching

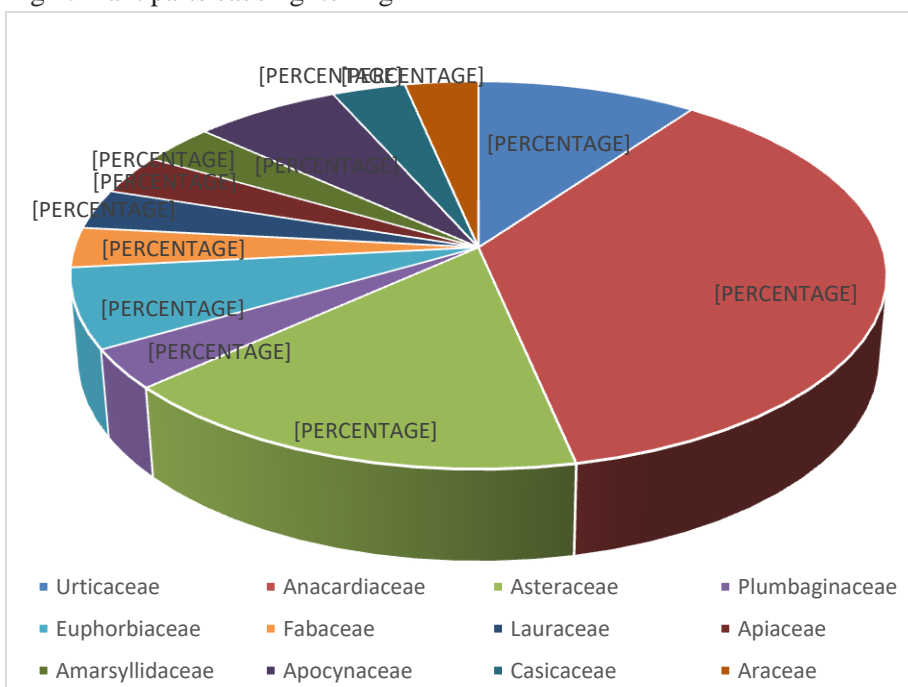


Fig 2: Plants belonging to different families that cause itching

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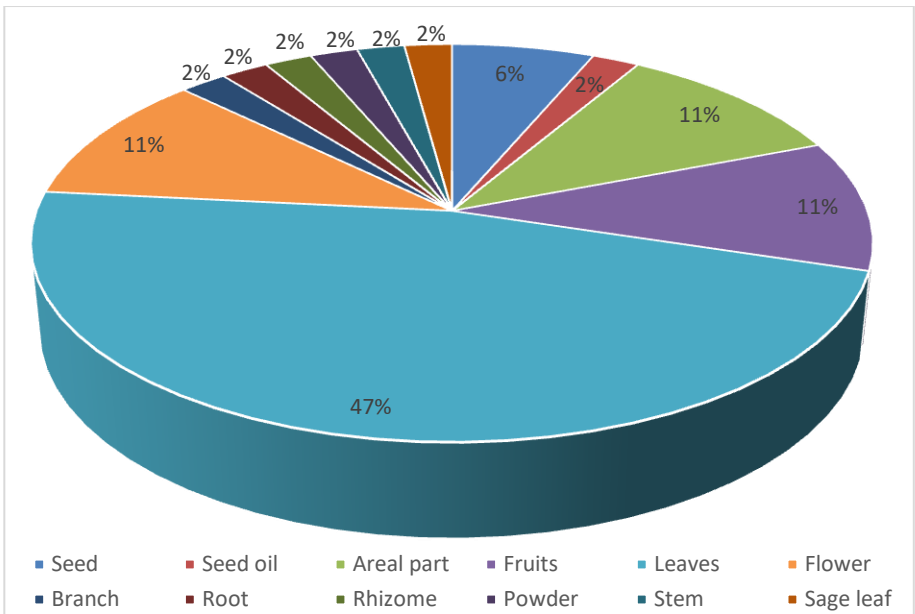


Fig 3: Plants that relieve itching

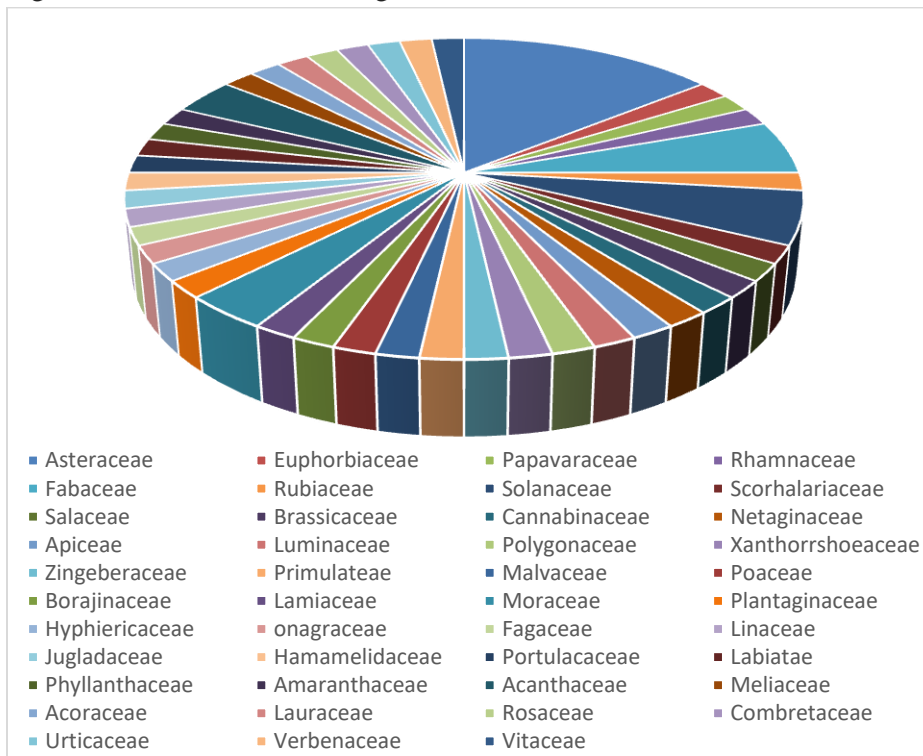


Fig 4: Families of Plants that relieve itching

[E]



[F]



[G]



[H]



[A]



[B]



[C]



[D]



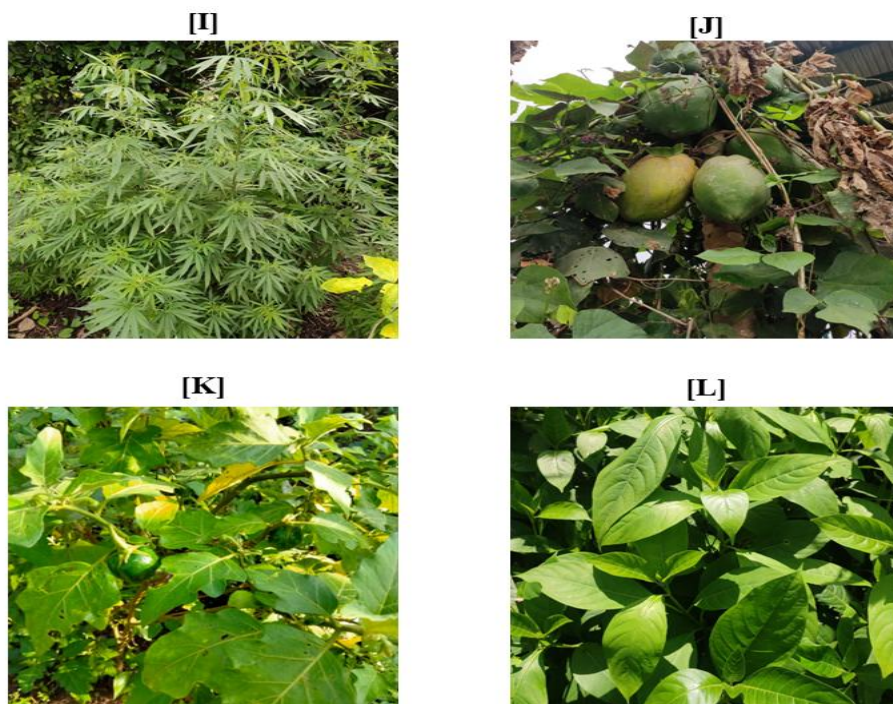


Fig. 5: [A] *Aloe barbadensis* [B] *Hibiscus esculentus* [C] *Curcuma longa* [D] *Phyllanthus emblica* [E] *Colocasia esulenta* [F] *Azadirachta indica* [G] *Helianthus annuus* [H] *Dahlia pinnata* [I] *Cannabis sativus* [J] *Carica papaya* [K] *Solanum indicum* [L] *Phlogacanthus thyrsoformis*.

Conclusion

Itchy skin is one of the most prevalent complaints, which forces people to visit a dermatologist for relief or treatment. Itchy skin can be a symptom of a variety of ailments and diseases, including skin, kidney, liver, dermato-physical, celiac, thyroid, and insect bites. Finally, research suggests that several chemical mediators and signalling pathways, such as 5-hydroxytryptamine, proteases, opioid peptides, and peptides, have a substantial influence on the mechanism of itch. This is due to the large variety of reasons and disorders that produce itching. Due to their active components, medicinal plants have positive impacts on human health and have a therapeutic effect on many body organs and disorders.

Different plant parts such as rhizomes, root, stem, flowers, fruit, bark, seed, seed oil, buds, latex, and whole plant parts etc. are responsible for causing itching. Also, widely used to relieve itching in which their preparation methods and administration differ significantly. A variety of administration methods include paste, decoctions, infusions, ointments, oils, poultices, tars, tinctures, unguents, and dried

preparations. This work contributes to the existing body of knowledge by identifying the chemical components involved in causing and relieving itching.

Thirty plants which cause itching belonging to 12 families are reported in this study (table 1). Out of those plants, the families most represented were Anacardiaceae (11) followed by Asteraceae (5), Urticaceae (3), Euphorbiaceae (2), and Apocynaceae (2). Leaves (11) recorded as the most common plant parts that causes itching, followed by flowers (8), stem (6), fruits (5), bark (4), sap (3), roots (2), and stalk (2) (table 1).

Among the sixty-three medicinal plants belonging to 45 families that alleviate itching (table 2), it has been revealed that Asteraceae (8) is the most prevalent family that alleviates itching, followed by Fabaceae (3), Moraceae (2), Acanthaceae (2), and Solanaceae (2). Leaves (22) recorded as the most utilized plant (table 1). Leaves are the main photosynthetic part of plants which manufactures and store a wide range of chemical compounds that possesses numerous therapeutic value. Furthermore, following the leaves were the fruits (5), root (8) aerial (5), flower (5), bark (5), and seed (3). There are various methods of preparation like infusion, decoction, raw, maceration, mash, fresh application, powdering, paste, chewing (gum), crushing, lotion, ointment tincture where the most commonly used method of preparation was found to be paste, mash, crush, decoction and maceration.

It has been proven that some types of food ingredients are capable of mediating or interfering with the complex chemical interactions involved in life processes, in addition to providing the body with energy and aiding in repairs. These "non-nutritional" exogenous biochemicals (alkaloids, flavonoids, terpenes, glycosides) have therapeutic potentials comparable to those of plant isolates that are inedible or toxic. It is so remarkable that in the hunt for potentially useful therapeutic plants, a great deal of focus is placed on hard poisonous substances that conform to the modern conception of medications as necessarily 'poisons that in modest quantities could treat ailments.

Since these phytotherapeutic compounds play such critical roles in clinical medicine, it is crucial to investigate them. It is of utmost clinical importance to determine the acute and chronic toxicity of plant products used as therapeutic agents, regardless of whether or not they exhibit the anticipated pharmacological action when studying medicinal plants because adverse effects are sometimes observed with plant drugs.

Conclusion

Itching or pruritus can be incapacitating and extremely challenging to treat efficiently. Despite the use of numerous systemic and topical conventional medications for the treatment of pruritis, the need for more effective drugs with a

lower incidence of adverse effects remains apparent. Herbal treatment for pruritic disorders has been utilized for millennia. In the present study, we compiled a list of plants and their bioactive constituents for the treatment of pruritus, with the potential for future research on these herbs as antipruritic drugs. Although many plants are claimed as treatments for pruritus, only a small number have been studied in well-designed clinical trials. Thus, in order to establish the active elements responsible for itching as well as the therapeutically active chemicals that alleviate itching, additional research with a greater level of in-depth inquiry is required.

Conflict of Interest

The authors declare no conflicting interests.

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