



World Journal of Pharmacy and Biotechnology

Journal Home Page: www.pharmaresearchlibrary.com/wjpbt



REVIEW ARTICLE

A Review On Herbal Medicines

Shaik Salma Suthana*, Sai Kiran¹, B. Hareesh²

Jagan's College of Pharmacy, Jangala Kandriga (V), Muthukuru (M), Nellore, Andhra Pradesh, India.

ABSTRACT

Plants have been used for health and medical purposes for several thousands of years. The number of higher plant species on earth is about 250 000. It is estimated that 35 000 to 70,000 species have, at one time or another, been used in some cultures for medicinal purposes. A majority of the world's population in developing countries still relies on herbal medicines to meet its health needs. Herbal medicines are often used to provide first-line and basic health service, both to people living in remote areas where it is the only available health service, and to people living in poor areas where it offers the only affordable remedy. Even in areas where modern medicine is available, the interest on herbal medicines and their utilization have been increasing rapidly in recent years.

Key words: Ayurveda, World Health Organization, Herbalism, duanye shuiwu gong

ARTICLE INFO

CORRESPONDING AUTHOR

Shaik Salma Suthana

Jagan's College of Pharmacy, Jangala Kandriga (V),
Muthukuru (M), Nellore, Andhra Pradesh, India.

MS-ID:WJPBT3603



PAPER-QR CODE

ARTICLE HISTORY: Received 21 April 2018, Accepted 12 May 2018, Available Online 29 June 2018

Copyright©2018 Shaik Salma Suthana, *et al.* Production and hosting by Pharma Research Library. All rights reserved.

This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

Citation: Shaik Salma Suthana, *et al.* A Review on Herbal Medicines. *W. J. Pharm. Biotech.*, 2018, 5(1): 01-07.

CONTENTS

- | | |
|----------------------|-----|
| 1. Introduction..... | .01 |
| 2. Morphology..... | .02 |
| 3. References..... | .06 |

1. Introduction

Medicinal plants have been used for medicinal purposes long before recorded history. For example, ancient Chinese and Egyptian papyrus writings describe medicinal plant uses. Indigenous cultures (e.g., African and Native American) used herbs in their healing rituals, while others developed traditional medical systems (e.g., Ayurveda and Traditional Chinese Medicine) in which herbal therapies were used systematically. Scientists found that people in different parts of the globe tended to use the same or similar plants for the same purposes. In the early 19th

century, when methods of chemical analysis first became available, scientists began extracting and modifying the active ingredients from plants. Later, chemists began making their own version of plant compounds, beginning the transition from raw herbs to synthetic pharmaceuticals. Over time, the use of herbal medicines declined in favour of pharmaceuticals.

Herbal Medicine Today

Recently, the World Health Organization estimated that 80% of people worldwide rely on herbal medicines for some aspect of their primary healthcare. In the last twenty

years, in the United States, increasing public dissatisfaction with the cost, efficacy and potential of side-effect of prescription medications, combined with an interest in returning to natural or organic remedies, has led to an increase in the use of herbal medicines. In countries such as Germany and Switzerland, roughly 600 to 700 plant-based medicines are available and prescribed by approximately 70% of physicians.

How do Herbs Work

For most herbs, used in herbal medicine, the specific ingredient that causes a therapeutic effect is not known. Whole herbs contain many ingredients, and it is likely that they work synergistically to produce the therapeutic effects. Many factors affect how effective a herb will be. For example, the type of environment (climate, bugs, soil quality, altitude, etc.) in which a plant is grown will affect its constituents. In addition, how and when it was harvested and processed will also influence the quality of the resulting herbal extract.

How are herbs used

For the reasons described in the previous section, herbalists prefer using plant extracts from the whole herb or various parts such as roots, flowers, seeds, etc., rather than extracting single active ingredients from them. Herbal extracts have many components and are usually too complex to manufacture synthetically by the pharmaceutical industry. These components contained in medicinal herbs work together to produce therapeutic effects, while at the same time moderating potential side-effects often associated with pharmaceutical preparations. Several herbs are often used together to enhance effectiveness and synergistic actions and to reduce toxicity.

Are Herbal Medicines Safe

In a study by the World Health Organization on the use of herbal medicine, about 80% of the world's population still rely on herbal medicine to treat certain ailments and about 74% of the pharmaceutical drugs we use today contain at least one botanical element. For instance, Chinese herbal medicine uses Ephedra, which contains ephedrine. This herb is used in the treatment of some respiratory conditions. Ephedrine (*Pseudoephedrine* as in *Sudafed*) remains an active ingredient in many pharmaceutical drugs being prescribed to relieve asthma symptoms. Herbal medicine is defined by three schools of thought: Ayurvedic Herbalism, Traditional Chinese Herbalism and Western Herbal Medicine. While both Ayurvedic and Chinese herbal medicine have moved on to advanced forms, western herbal medicine remains a part of folk treatments. Herbal medicine is, first and foremost, holistic. It aims to address not just a particular symptom, but also helps the whole body rejuvenate and strengthen itself.

Research

Research into herbal medicine is growing and evidence of efficacy is growing at a rapid rate. Universities such as the University of Maryland Medical Centre, are publishing good quality, researched information on herbal medicine, herbs and other aspects of alternative medicine.

Warning

Always keep in mind that herbal medicines are medicines and, therefore, need to be regarded with as much care as

pharmaceutical drugs. Some people have the misconception that because herbal medicines are natural, they are 100% safe. This is not so. Always consult a fully qualified, experienced medical herbalist to have your health problems assessed and treated. The Australian Traditional Medicine Society (ATMS) provides a list of qualified herbal medicine practitioners for hundreds of locations across Australia. You can easily find a qualified herbalist or Chinese medicine practitioner in your area here.

2. Morphology

COMMELINADIFFUSA

Commelinadiffusa, sometimes known as the climbing dayflower or spreading dayflower, is a pantropical herbaceous plant in the dayflower family. It has been introduced to the southeastern United States where it is most common in wet disturbed soils. There are two recognised varieties, one being the type and the other being *C. diffusa* var. *gigas*, which is native to Asia and has been introduced to Florida. It flowers from spring to fall and is most common in disturbed situations, moist places and forests. In China the plant is used medicinally as a febrifuge and a diuretic. A blue dye is also extracted from the flower for paints. In the Hawaiian Islands, it is known as "honohono grass", although it is technically not a grass. "Honohono" refers to the alternating structure of the leaves. At least one publication lists it as an edible plant in New Guinea.

Synonym

Commelina agraria Kunth (synonym), *Commelina agraria* var. *prostrata* (Kunth) Seub. (synonym), *Commelina agraria* var. *repens* Seub. (synonym), *Commelina aquatica* J.K.Morton (synonym), *Commelina caespitosa* Roxb. (synonym), *Commelina cajennensis* Kunth, pro syn. (synonym), *Commelina canariensis* C.Sm. (synonym), *Commelina cayennensis* Rich. (synonym), *Commelina communis* Engelm. ex Kunth, nom. illeg. (ambiguous synonym), *Commelina communis* Walter, nom. illeg. (ambiguous synonym), *Commelinadiffusa* subsp. *aquatica* (J.K.Morton) O'Gwal (synonym), *Commelinadiffusa* var. *cordispatha* Rohweder (synonym), *Commelinadiffusa* f. *glabra* (G.Mey.)

Rohweder (synonym), *Commelinadiffusa* var. *major* Kayama (synonym), *Commelina formosa* Graham (synonym), *Commelina glabra* G.Mey. (synonym), *Commelinagracilis* Ruiz & Pav. (synonym), *Commelinagracilis* var. *glabrata* C.Presl (synonym), *Commelinalongicaulis* Jacq. (synonym), *Commelinanudiflora* f. *agraria* (Kunth) C.B. Clarke (synonym), *Commelinanudiflora* var. *glabrata* (G.Mey.) C.B. Clarke (synonym), *Commelinanudiflora* var. *werneana* (Hassk.) C.B. Clarke (synonym), *Commelina obtusifolia* Vahl (synonym), *Commelina ochreate* Schauer (synonym), *Commelinapacifica* Vahl (synonym), *Commelinapilosa* Pers. (synonym), *Commelinapilosula* Rich. (synonym), *Commelinaprostrata* Kunth (ambiguous synonym), *Commelinaprostrata* Poepp. ex Kunth, pro syn. (ambiguous synonym), *Commelinasabatieri* C.B. Clarke (synonym), *Commelinasellowiana* Kunth (synonym), *Commelinawerneana* Hassk. (synonym).



Fig 1: *Commelina diffusa*

Biological source: It consists of a species in the genus *Commelina*.

Family: Commelinaceae

Chemical Constituents: Some anthocyanins and dammaranetriepene have been isolated from the plant.

Description: *Commelinadiffusa* is typically an annual herb, though it may be perennial in the tropics.[2] It spreads diffusely, creeping along the ground, branching heavily and rooting at the nodes, obtaining stem lengths up to 1 metre. Pubescence on the stem is variable and ranges from glabrous to hispidulous, which can occur either in a line or throughout.[3] The leaf blades are relatively variable, ranging from lanceolate to ovate,[2] with proximal leaves tending to be more oblong. They measure 3 to 12 cm in length by 0.8 to 3 cm in width.[3] North American populations tend to have smaller leaf size, typically measuring 1.5 to 5 cm, by 0.5 by 1.8 cm. The leaf apex is acute to acuminate.[2] The leaf surface can be either glabrous (i.e. hairless) or hispid (i.e. bristly). The leaves are subsessile (i.e. having a very small petiole) with a leaf sheath striped with red and covered with hispid pubescence. The flowers are arranged into cincinni (singular: cincinnus), or scorpioid cymes. This is a form of a monochasium where the lateral branches arise alternately on opposite sides of the false axis. There are typically two cincinni present, with the lower cincinnus bearing 2 to 4 flowers, while the upper cincinnus has one to several flowers. The upper cincinnus is generally exerted on specimens with larger spathes, but it may be included in specimens with smaller spathes.[2]

The upper cincinnus bears only male flowers and has a longer peduncle, while the lower cincinnus bears bisexual flowers on a shorter peduncle. The pedicels supporting single flowers, and later the fruits, are thick and curved and measure about 3 to 5 mm. The membranous sepals are inconspicuous at only 3 to 4 mm in length.[3] The petals are blue, though may be lavender in rare cases.[2] The upper two petals measure 4.2 to 6 mm.[3] The anther connective (i.e. the tissue connecting the two halves of the anther) of the centre-most stamen has a broad transverse band of violet. The spathes are solitary, borne on apeduncle and typically falcate (i.e. sickle-shaped) with a cordate (i.e. heart-shaped) to rounded base, acuminate apices and can be either glabrous or hispidulous (i.e. minutely hispid) beneath. They usually measure 0.8 to 2.5 cm long, but may be as short as 0.5 cm and as long as 4 cm. They are typically 0.4 by 1.2 cm wide, but may be up to 1.4 cm long. Their peduncles are

usually 0.5 to 2 cm long and rarely up to 2.9 cm.[2][3] Flowering occurs from May to November.[3] The fruit is a capsule which has three locules and 2 valves. It measures 4 to 6.3 mm long by 3 to 4 mm wide, though it may be as narrow as 2.1 mm. They contain five brown seeds that are 2 to 2.8, rarely up to 3.2 mm long, by 1.4 to 1.8 mm wide. They are deeply reticulate (i.e. net-like). The chromosome number is $2n = 30$.[2]

Distribution and habitat:

The plant is present in tropical and subtropical locations worldwide. It can be found throughout much of southern China, specifically in the provinces of Guangdong, southwestern Guangxi, southwestern Guizhou, Hainan, southeastern Xizang and southeastern Yunnan.[3] In Japan the plant has been reported from Yakushima off Ky sh and is also present in the Ryukyu Islands from Amami shima southwards.[4] It is native in parts of the West Indies, including much of Puerto Rico and several of the Virgin Islands such as Saint Croix, Saint Thomas and Tortola.[5] It has also been introduced to the southeastern United States where it is present from Maryland in the north, west to Missouri and south to Texas and Florida. It has also been introduced to Hawaii, where it is a common and quickly spreading weed. The variety *C. diffusa* var. *gigas* has been introduced to Florida.[2] In China it can be found from sea level up to 2100 metres, and is typically associated with forests, thickets, stream banks and other open and humid habitats.[3] In the West Indies it is a common weed that is especially associated with roadsides, moist ditches and waste places and it can be found from sea level to 1050 metres.[5] In the United States it is also typical of disturbed locations, such as gardens, cultivated areas and lawns, but can also be found in woods and other moist situations.[2]

Uses:

Within China, *Commelinadiffusa* is used as a medicinal herb with febrifugal and diuretic effects. A dye is also obtained from the juice of the petals for use in painting.[3]. Within Hawaii, "honohono grass" was used as medicine to aid with deep cuts. While other Hawaiian herbs just get superficial cuts, honohono grass is an herb to aid with deeper troubling issues. According to a work by Bruce French published on papuaweb.org, the young leaf tips are cooked and eaten in New Guinea.

Kyllingabrevifolia

Synonym:

Chinese: duan ye shuiwu gong, Chuukese: nikémwúr, pwukaringah, English: green kyllinga, green water sedge, Mullumbimby couch, perennial greenhead sedge, short kyllinga, short leaved kyllinga, shortleaf spikesedge, Hawaiian: kaluh , kili'o'opu, manun n , mau'umokae, Japanese: aida-kugu, himekugu, Mangarevan: mutieiwa, Maori (Cook Islands): mauku ' ni ni, tumu 'enua, Palauan: deus, eschesiding, Samoan: tuis , tuis , tuse, Satawalese: fithinnar, Spanish: fosforito, junciacorta, Tahitian: mo'uupo'lo, Tongan: pakopako, Yapese: bwogorewau, nikamoyr.

Biological source: It consists of a species in the genus *Kyllinga*. (family Cyperaceae).

Chemical Constituents:

The essential oil from the leaf of *Kyllingabrevifolia* Rottb.,

collected from Biratnagar, Nepal, was obtained by hydrodistillation and analyzed by GC-MS. A total of 22 compounds were identified in the oil accounting for 96.1 % of the oil composition. The majority of the essential oil was identified to be occadinol (40.3 %), L- α -muurolol (19.5%), and germacrene D-4-ol (12.5 %). The oil also contained smaller amounts of α -cadinene (2.9 %), and germacrene D (4.0 %). Reports on the essential oil composition of *K. brevifolia* from Nepal were compared with a sample from Brazil, which showed that 13-epi-manoyl oxide (26.1 %) and manoyl oxide derivatives constituted the majority of composition with α -cadinol comprising only 0.4 %. However germacrene D was found in similar percentages between Nepal and Brazil samples (4.0 % and 4.2 %, respectively).

Description:

"Perennials with slender rhizomes; culms tufted or closely to widely spaced in a single row along the rhizome, slender, 7-30 cm tall. Leaves few, basal or nearly so, blades herbaceous, linear, shorter than or occasionally as long as the culm, 2-3 mm wide; sheaths brown or purplish brown, membranous. Inflorescence a single terminal spike or sometimes 2-3 together, these pale green, more or less becoming yellowish green at maturity, globose or broadly ovoid-globose, 5-10 mm long and as wide; involucre bracts 3, leaf-like, unequal in length; spikelets oblong-lanceolate, compressed, 3-3.5 mm long, ca. 1 mm wide, jointed at base; glumes 4, pale green, membranous, the first one elliptic-lanceolate, the second ovate, and the third and fourth boat-shaped, folded, the keel acute, sometimes with resinous spots, 7-nerved including midnerve, the keel sparsely spinulose toward apex, apex mucronate, the mucro straight or slightly recurved. Achenes brown, obovate, lenticular, ca. 1.5 mm long, punctulate"

Medical Use:

Marijuana, or cannabis, as it is more appropriately called, has been part of humanity's medicine chest for almost as long as history has been recorded. Of all the negative consequences of marijuana prohibition, none is as tragic as the denial of medicinal cannabis to the tens of thousands of patients who could benefit from its therapeutic use. Modern research suggests that cannabis is a valuable aid in the treatment of a wide range of clinical applications. These include pain relief -- particularly of neuropathic pain (pain from nerve damage) -- nausea, spasticity, glaucoma, and movement disorders. Marijuana is also a powerful appetite stimulant, specifically for patients suffering from HIV, the AIDS wasting syndrome, or dementia. Emerging research suggests that marijuana's medicinal properties may protect the body against some types of malignant tumors and are neuro protective. Currently, more than 60 U.S. and international health organizations support granting patients immediate legal access to medicinal marijuana under a physician's supervision.

VIGNA MARINA

Synonyms:

Dolichos luteus S., *Phaseolus marinus*, *Scytalis anomala* Scytalis retusa E. Mey.

Biological source: *Vignacarcalla* has the most complex flower among asymmetrical Papilionoideae. The objective

of this study was to understand the relationships among floral characteristics, specialization, mating system and the role of floral visitors under different ecological contexts.

Chemical Constituents:

Phytochemical investigation was carried out on the seeds of *Vigna umbellata*. The 70% ethanol extract of the seeds of *V. umbellata* was subjected to silica gel, Sephadex LH-20, ODS column chromatographies and preparative HPLC. The structures of the isolated compounds were elucidated on the basis of NMR and ESI-MS spectroscopic data. Eight compounds were obtained and identified as carboxyatractyligenin (1), 2 β -O- β -D-glucopyranosyl-15 α -hydroxy-kaur-16-ene-18,19-dicarboxylic acid (2), 2 β -O-(β -D-glucopyranosyl) atractyligenin (3), 3R-O-[β -L-arabinopyranosyl-(1-6) - β -D-glucopyranosyl] oct-1-ene-3-ol (4), (6S, 7E, 9R) -roseoside (5), lirioidendrin (6), resveratrol (7) and maltol (8). Compounds 1-7 were isolated from *Vigna* genus for the first time, and compound 8 was isolated from *V. umbellata* for the first time.

Description

Stem: The stems grow up to 3 metres long, and often have purplish stripes.

Leaves: The leaves are trifoliate and are light green in colour. They grow from the stems, each on a stalk of about 2 to 5 cm long, and are arranged alternately. Small, triangular leaf-like stipules are located at the junction where the leaf stalk meets the stem. Three triple-nerved leaflets comprise each leaf. These are smooth-edged, and broadly oval to oblong in shape, with a pointed tip. They grow from 4 to 10 cm in length, and 2 to 5 cm in width.

Flower:

The flowers are yellow in colour, and are pea-type in shape. They grow from stalks which have a maximum length of approximately 10 cm. The flowers are between 15 and 18 mm long, and grow in clusters around the tip of the stalk. These flowers occur year round,^[2] but mostly in the autumn and early winter.^[2] The flowers have no fragrance.^[4]



Fig 2: *Vigna marina* Flower

Fruit: The peas are circular to oblong in shape, and have a greyish-brown colour. They grow within rounded pods in groups of 4 to 9. The pods are up to 8 cm in length and 6 mm wide. The ripened peas are released when the pod opens and then twists.

Uses: *V. marina* occurs as a natural sand binder on sea shores and coastal sand dunes. It is also cultivated as a cover

crop. In the Maldives it is grown for its edible seeds, while in Australia its thicker roots are eaten after roasting. After thorough cooking, the leaves can be eaten as a vegetable. Livestock will eat the plant when cut as green forage. As a treatment to help heal wounds such as boils, running sore, or ulcers (known locally as h h), early Hawaiians ground the leaves, stalks, midribs (kua), and stems of the plant, and applied the softened materials directly onto the affected area.[4] As is the case in many pea species, *Vigna marina* is able to fix nitrogen from the air around its roots. This is done by microorganisms on the nodules of the roots. The resultant nitrogen is used by the plant, and also increases the nitrogen content in the surrounding sand. This helps other plants in the vicinity to grow.[2] *Vigna marina* can prevent coastal erosion.

DAVALLIA

Common name: Rabbit's Foot Fern.

Biological source: *Davallia* (deersfoot fern, hare's foot fern, shinobu fern, rabbit foot fern, ball fern) is a genus of about 40 species of ferns in the family Davalliaceae. They are epiphytic ferns, with fronds arising from long aerial rhizomes which grow on and over thick bark on trees or on rock crevices.

Description:

Small to rather large epiphytic or epilithic ferns with creeping rhizomes, roots restricted to the ventral side of lateral buds. Rhizomes fleshy, usually long and somewhat flattened, densely covered with scales; scales peltate or basifixed with cordate base and overlapping lobes, variously shaped. Leaves alternate, arranged in 2 rows; petiole usually well-developed, articulated to the rhizome, sulcate adaxially; lamina triangular-oblong, pentagonal or lanceolate in outline, usually firm in texture, simple, trifoliate or 2-5-pinnately compound with the pinnae further pinnatifid, usually with glandular hairs when young; veins distinct; "false veins" (bands of regularly arranged short cells without stomata) sometimes present between the veins. Fertile leaves often with leaflets or segments narrower than the sterile ones; sori commonly borne separately on small oblique lobes, terminal on the veins, close to the margin; indusia attached by their base and sides, only the upper edge free, forming a cup-shaped structure. Spores bilateral, monoletic, ellipsoid, 25-60 μm long, light brown and translucent, densely subverrucate-areolate.

D. denticulata

Rhizome without scales 3-15 mm in diameter; scales peltate, 4-8 mm \times 0.5-1.5 mm, narrowing evenly towards the apex or narrowing abruptly from a broad base, toothed, red-brown to black. Petiole 4-50 cm long, green or more or less dark brown, with two pale green longitudinal lines near the adaxial surface, glabrous or with few deciduous scales at the base; lamina broadly triangular in outline, (16-)30-60(-90) cm \times 13-50 cm, bipinnate to quadripinnate, leathery, shiny; petiolules 4-35 mm long; pinnae broadly deltoid, largest ones 8-45 cm \times 5-30 cm, often tapering into a long point; largest pinnules triangular, 0.7-20 cm \times 0.4-11 cm; ultimate segments linear or narrowly ovate, 5-27 mm \times 2-6 mm, with very oblique, rounded, shallow or deep lobes, the fertile lobes with somewhat narrower segments than those of the sterile ones; veins free, mostly forked, raised on the lower

surface, with false veins between the outer branches, reaching almost to the vein junctions. Sori separate, several borne on a segment at the forking point of veins; indusium pouch-shaped, truncate to slightly rounded, 1-1.3 mm \times 0.5-1 mm, extending to lamina margin or not; lamina usually extending into a small, incurved tooth at one or both sides of a sorus. Spores shallowly verrucate with a short aperture.

D. falcinella

Rhizome without scales up to 3 mm in diameter; scales peltate, acicular, 6-10 mm \times 2 mm, nearly black, at distal part with marginal setae. Petiole 4-9 cm long, dark brown; lamina deltoid, 7-14 cm \times 6-14 cm, 3-4-pinnate; petiolules 1-7 mm long, pinnae linear-triangular, 4-7 cm \times 2-7 cm; pinnules linear-oblong, 15-25 mm \times 7-12 mm; ultimate segments without a tooth, 1-2 mm long and wide (in sterile leaves up to 4 mm long); veins in sterile ultimate lobes frequently simple, not reaching the margin, false veins absent. Sori separate, often single on a segment, at the forking point of veins; indusium attached at base and only part of the sides, semicircular, about 1 mm in diameter; lamina not extending into teeth beyond a sorus. Spores irregularly verrucate.

D. parvula

Rhizome without scales 0.5-1.2 mm in diameter, white waxy; scales peltate, narrowed evenly towards the apex, 2.5-6 mm \times 0.3-0.6 mm, red-brown, in distal part with marginal setae. Petiole (0.1-)1-5 cm long; lamina deltoid, 0.6-4 cm \times 0.5-3.5 cm, entirely divided into fine linear segments without obvious rachis; longest petiolules 1-2 mm long; ultimate segments 0.5-4 mm \times 0.2-0.4 mm, obtuse or acute without a tooth with simple veins reaching the margin, false veins absent. Sori separate, often single on a segment at the forking point of veins; indusium only attached at the base, semicircular to subtriangular, 0.3-0.8 mm in diameter, upper margin not elongated; lamina usually extending beyond it at either side for 1-1.5 mm into two unequal arms.

D. solida

Rhizome without scales 4-14 mm in diameter; scales peltate, narrowing evenly towards the apex, 5-10 mm \times 1-1.2 mm, red-brown to black, when young bearing woolly, multiseptate hairs but when old covered with appressed bases of scales only, the distal parts of scales being deciduous. Leaves dimorphic; petiole 9-35 cm long, distinctly grooved adaxially; lamina broadly deltoid, 15-90 cm \times 21-40 cm, 2-3-pinnately compound; petiolules 5-25 mm long; longest pinnae deltoid, 11-28 cm \times 6-15 cm; longest pinnules triangular, 4-10 cm \times 1.5-8 cm; ultimate segments 10-40 mm \times 3-17 mm, usually lobed, with pinnate veins, false veins absent. Sori separate, several borne on a segment at the forking point of veins; indusium also attached along the sides, 1.2-2 mm \times 0.5-1 mm, upper margin not elongated; lamina not extending into teeth beyond a sorus. Spores prominently verrucate.

D. trichomanoides

Rhizome without the scales 3-8 mm in diameter; scales peltate, nearly acicular above a broad base, 4-8 mm \times 1-1.5 mm, brown to red-brown, toothed or with marginal setae in distal part. Petiole 4-20 cm long; lamina deltoid, 10-35 cm \times 9-25 cm; petiolules 1-6 mm long; pinnae 5-19 cm \times 3-12 cm, pinnules 2-7 cm \times 1-3 cm, ultimate segments 5-27 mm

× 2-6 mm; veins in ultimate lobes simple or forked but not reaching the margin; false veins are usually present; indusium also attached along the sides, 1.2-2 mm × 0.5-1 mm, upper margin not elongated; lamina usually extending into a tooth at either side of a sorus, teeth equal in size. Spores verrucate, aperture nearly equal to their length.

Uses:

Most Davallia species are epiphytes and several are grown for their creeping surface rhizomes, densely covered with red-brown scales and sometimes hairs, overall resembling various animal feet. They are often attractive indoor ornamental plants, grown in pots or in hanging baskets. The leaves are used fresh or dried in floral arrangements. The term ball ferns originates from Japan, where the flexible rhizomes of *D. trichomanoides* are tied into balls and other figures; when these figures are hung and watered, new leaves will subsequently appear on the surfaces, and they become self-contained hanging baskets. The leaf and rhizome of *D. solida* are popular ingredients in mixed medicines of Polynesian local healers.

Ageratum Conyzoides

Synonym: *A. conyzoides* L.; *A. obtusifolium* Lam.; *Cacaliamentrasto* Vell.

Description: *A. conyzoides* is an erect, branching, annual herb with shallow, fibrous roots. It may, depending upon environmental conditions, reach 50-1500 mm tall at flowering. The stems, which may root where the bases touch the ground, are cylindrical, and become strong and woody with age; nodes and young parts of the stem are covered with short, white hairs. Leaves are opposite, 20-100 mm long, 5-50 mm wide, on hairy petioles 5-75 mm long, broadly ovate, with a rounded or narrowed acute base and an acute or obtuse or sometimes acuminate tip and toothed margins. Both leaf surfaces are sparsely hairy, rough with prominent veins and when crushed the leaves have a characteristic odour which is reminiscent of the male goat. The branched, terminal or axillary inflorescence bears 4-18 flower heads arranged in showy, flat-topped clusters. Individual flower heads are light blue, white or violet, are carried on 50-150 mm long peduncles and are 5 mm across, 4-6 mm long with 60-75 tubular flowers. The flower head is surrounded by two or three rows of oblong bracts which are green with pale or reddish-violet tops. The bracts are 3-5 mm high, outer ones 0.5-1.75 mm wide, sparsely hairy, evenly toothed in the upper part, with an abruptly acuminate, acute tip. Flowers are 1.5-3 mm long and scarcely protrude above the bracts. The fruit is a ribbed or angled, black achene, 1.25-2 mm long, roughly hairy, with a pappus of 5, rarely 6, rough bristles, white to cream coloured, 1.5-3 mm long with upward turning spines.

3. References

[1] Butler J, Forman DE and Abraham WT; A relationship between heart failure treatment and development of worsening renal function among hospitalized patients. *Am Heart J.*, 2004; 147: 331-338
 [2] Ellison DH; The Physiological basis of diuretic synergism; its role in treating diuretic resistance. *Ann Intern Med*, 1991; 114: 886- 894.

[3] Chopra RN and Chopra IC; A review of work on Indian medicinal Plants including indigenous drugs and poisonous plants-30. *Indian Council of Medicinal Research, Special research series*, 1955: 27.
 [4] Nadkarni KM and Nadkarni AK; *Indian Materia Medica-2*. 3rd edition, Popular Prakashan, Bombay; 2000: 37-39.
 [5] Agharkar SP; *Medicinal Plants of Bombay Presidency*. FBI Science Publication, Jodhpur, 1991: 230. 6. Ahmad SA; Taxonomic and Pharmacognostic studies of some local Unani medicinal plants. Ph.D Thesis, Sant Gadge Baba Amravati University, Amravati, 2003.
 [6] Shrivani P, Laxmi M and Kumar S; Evaluation of diuretic activity of *Xanthium Strumarium*. *International Journal of Preclinical and Pharmaceutical Research*, 2010; 1 (1): 31 -34.
 [7] Suresh A, Senthil Velan S, Suresh V, Senthil kumar N and Phani kumar A; Evaluation of Diuretic Activity of *Samanea saman* (Jacq) Merr bark in albino rats. *Journal of Global trends in Pharmaceutical science*, 2010; 1(1): 61-67.
 [8] Kokate CK, Purohirt AR and Gokhale CB; *Pharmacognosy*. 27 th edition, Nirali Prakashan, 2004: 344.
 [9] Finar IL; *Organic chemistry stereochemistry and the chemistry of natural products*. 5th edition, Singapore: Pearson Education Ltd; 1975: 518.
 [10] Swanholm CE, St John H and Scheuer PJ; A survey of alkaloids in Hawaiian plants. *Pacific Science*, 1959; 13: 295 305.
 [11] Hirazumi A and Furusawa E; An immune modulatory polysaccharide rich substance from the fruit juice of Noni with antitumour activity. *Phytother Res*, 1999; 13: 380–387.
 [12] Whistler W; *Tongan herbal medicine*. Isle Botanica, Honolulu, Hawaii, 1992: 89 90.
 [13] Hiramatsu T, Imoto M, Koyano T and Umezawa K; Induction of normal phenotypes in ras transformed cells by damnacanthol from *Morinda citrifolia*. *Cancer Lett*, 1993; 73:161–166.
 [14] Ayanblu F, Wang MY, Peng L, Nowicki J, Anderson G and Nowiciki D; Antithrombotic effect of *Morinda citrifolia* (Noni) fruit juice on the jugular vein thrombosis induced by ferric chloride in male adult SD rats. *Arteriosclerosis Thrombosis and Vascular Biology*, 2006; 26: E104.
 [15] Zin ZM, Abdul Hamid A and Osman A. Antioxidative activity of extracts from Menkudu (*Morinda citrifolia*) root, fruit and leaf. *Food Chemistry*, 2002; 78: 227 233.
 [16] 17. Basar S, Uhlenhut K, Hogger P, Schone F and Westendorf J; Analgesic and antiinflammatory activity of *Morinda citrifolia* L. (Noni) fruit. *Phytother Res*, 2010; 24(1):38 42.
 [17] Palu A, Deng S, West B and Jensen J; Xanthine oxidase inhibiting effects of noni Mishra Snigdha et al., *Sch. J. App. Med. Sci.*, 2013; 1(3):209-214

- [18] Dang Van Ho; Treatment and prevention of hypertension and its cerebral complications by total root extracts of *Morinda citrifolia*. *Presse Med.*1955; 63(72):1478.
- [19] Shenoy JP, Pai PG, Shoeb A, Gokul P, Kulkarni A and Kotian MS; An Evaluation of Diuretic Activity of *Morinda Citrifolia* (Linn) (Noni) Fruit Juice in Normal Rats. *International Journal of Pharmacy and Pharmaceutical Sciences*, 2011; 3 (2): 119-121.