

P.K.M COLLEGE OF EDUCATION, MADAMAPAM

**PROJECT WOK ON “A STUDY ON DIVERSITY OF HERBS
AND SHRUBS OF MADAMPAM LOCALITY”**

CERTIFICATE

This is to certify that the project entitled “A study on diversity of herbs and shrubs of Madampam locality” is a bonafied work carried out by the Natural Science Optional Students (2016 -2018) of PKM College of Education, Mdampam under my supervision and guidance.

Jomol Jose

Optional teacher

Madampam

16/03/2017

DECLARATION

This is to declare that the subject matter of this report entitled “A study on the diversity of herbs and shrubs of Madampam locality” is the outcome of the project work carried out by us under the guidance and supervision of Mrs. Jomol Jose optional teacher Natural Science, PKM College of Education, Madampam.

Natural Science Optional Students (2022 –
2024)

ACKNOWLEDGEMENT

We take this opportunity to express our sincere gratitude to Mrs. Jomol Jose for rendering valuable support for the completion of this project. We also take this opportunity to thank our parents, friends, non-teaching staff, well-wishers and above all, the Almighty for their support and wishes, which were most needful during this project.

Natural Science Optional Students (2022 –
2024)

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INTRODUCTION

India, with its diverse agro-climatic conditions and regional topography, has been considered as the treasure house or botanical garden of plant genetic resources. Hence, India is recognized as one of the world's top 12 mega diversity nations. Our herbal wealth constitutes more than 8,000 species and accounts for around 50 % of all higher flowering plant species of India; around 70 % of the medicinal plants in the country are spread across the tropical forests of Western Ghats. Usage of herbs as a source of food, medicine, fragrance, flavour, dyes and other items in Indian systems of medicine is in increasing trend.

The origins of the therapeutic use of herbal medicine can be traced back to China about 5000 years ago. The extracts of several plants have been used as therapeutic agents. Many drugs presently prescribed by physicians are either directly isolated from plants or are artificially modified versions of natural products. These medicines are safe and environment friendly. According to the WHO about 80% of the world's population relies on traditional medicine for their primary health care. Herbalists and indigenous healers have used botanical medicines traditionally worldwide for the prevention and treatment of different pathologies.

With the increase in population, rapid expansion of area under food and commercial crops, deforestation, extension of urban area, establishment of industries in rural areas, etc., there is considerable depletion of plant genetic resources wealth, many of them being in the process of extinction day by day.

Our study aims at identifying the common herbs and shrubs in the Madampam locality, specifies their economic and medicinal importance and provide the need of conserving and preserving our diversity.

OBJECTIVES

- 1)To identify common herbs and shrubs in Madampam locality
- 2)To classify plants based on different criteria
- 3)To find economic importance of identified plants
- 4)To create herbarium booklet

REVIEW OF LITERATURE

Effective utilisation of biodiversity determines prosperity. This is so because of the limitless potential for application of biodiversity for human welfare. Biodiversity is the most significant of the resources available to man.

Sreedharan, T. P. (2004) found that biodiversity encompasses the limitless array of organisms from microbes to large life forms. We owe our achievements for the past 500 years to biodiversity. Tropical regions where light and water are available in plenty are the abodes of biodiversity. India and Latin America are important examples. Sixty-five thousand species of flowering plants have been recorded from Latin American countries. Fifteen thousand species of flowering plants have been

Corlett, R. T. (2016) in his study stated conservation of plants has not generated the sense of urgency—or the funding—that drives the conservation of animals, although plants are far more important for us. There are an estimated 500,000 species of land plants (angiosperms, gymnosperms, ferns, lycophytes, and bryophytes), with diversity strongly concentrated in the humid tropics. Many species are still unknown to science. Perhaps a third of all land plants are at risk of extinction, including many that are undescribed, or are described but otherwise data deficient. There have been few known global extinctions so far, but many additional species have not been recorded recently and may be extinct. Although only a minority of plant species have a specific human use, many more play important roles in natural ecosystems and the services they provide, and rare species are more likely to have unusual traits that could be useful in the future. The major threats to plant diversity include habitat loss, fragmentation, and degradation, overexploitation, invasive species, pollution, and anthropogenic climate change. Conservation of plant diversity is a massive task if viewed globally, but the combination of a well-designed and well-managed protected area system and ex situ gap-filling and back-up should work anywhere. The most urgent needs are for the completion of the global botanical inventory and an assessment of the conservation status of the 94% of plant species not yet evaluated, so that both in and ex situ conservation can be targeted efficiently. Globally, the biggest conservation gap is in the hyper diverse lowland tropics and this is where attention needs to be focused.

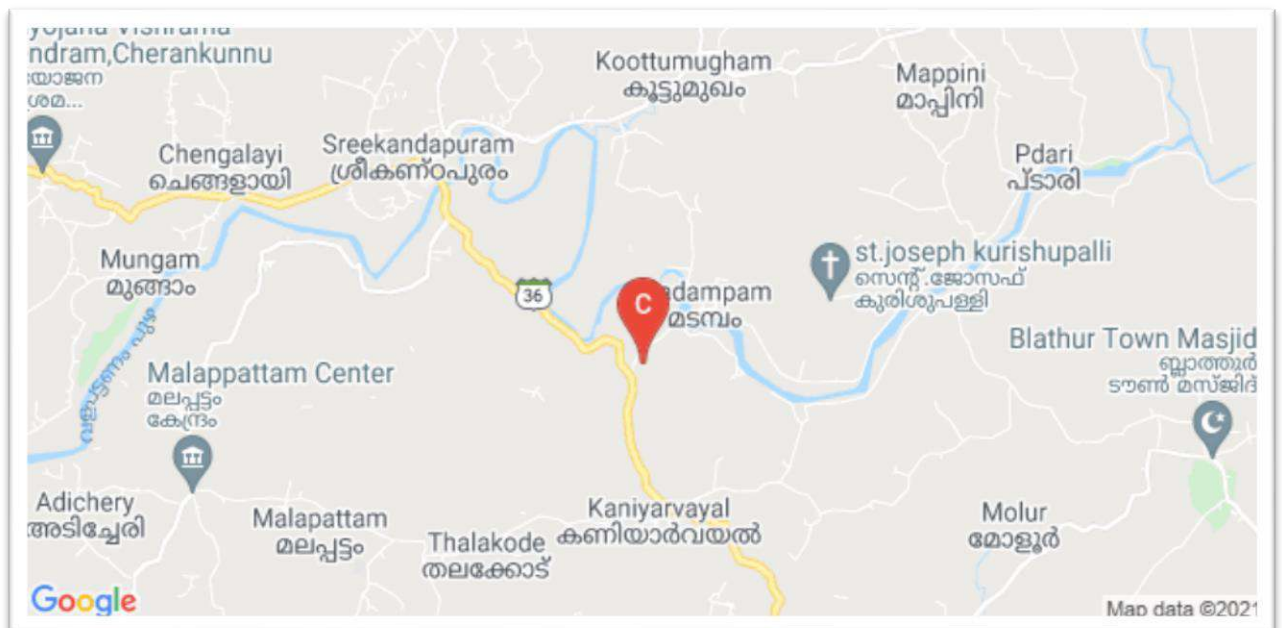
MATERIALS & METHODS

The present study was conducted on 3rd December 2022, based on an extensive survey and field observations. In this study, attempts were made to document the common herb & shrub species of Madampam locality. The documentation was mainly based on collection, field observation, photographs, internet sources as well as scrutinizing the literature review. During the field visit, observations were made based on collecting specimens and photographs are taken. The collected plant materials were identified taxonomically with the help of available literature and online sources.

On the day, student teachers of P K M College, Madampam were distributed into three equal groups. Each group has one or two members from Department of Natural Science to elaborate and to create awareness about the procedure of collection of specimens. For collection, the tools mainly used were secateurs and knives. Collected plants were carried to the college and from there, repeated plants were avoided and the rest is sorted and identified. Then documentation was done.

STUDY AREA

Madampam town is located about 3Km from Sreekandapuram. About 20Km from Taliparamba and 35Km from Kannur. The area is itself famous by the name of P K M College, Madampam. The locality chosen for collection of materials was from the compound of P K M College along the road side to Madampam town. About 2-3 Km of distance from institution was covered. The area was chosen because of the wide distribution of different kinds herbs and shrubs. The ecology of Madampam locality is suitable for Rubber plantations and heavy and consistent rainfall during monsoon helps the speedy growth of Tapioca, Rice, Coconut etc.



RESULTS

The studied plants are given according to Bentham & Hooker classification;

MALVACEAE

1. *Hibiscus rosa-sinensis*

Family :Malvaceae

Common name: Chinese hibiscus

Description : Shrubs, about 2-4 m tall. Stems woody, glabrous, branchlets, sparsely pubescent with simple and stellate hairs. Leaves simple, alternate or rarely lobed, 3-5 veined, midrib usually with obscure nectarines, membranous, glabrous above and with sparse stellate hairs beneath, petiole with sparse stellate hairs. Inflorescence usually axillary, solitary, by the reduction of the upper leaves. Flowers bisexual, pedicel slender, jointed towards the apex, pubescent with hairs beneath, about 1-1.5 cm long, epicalyx 5-8, base connate, apex forked with one leaf lobe, about 0.5-1 cm long, calyx 5 lobed, distinctly nerved, campanulate, lobes broadly lanceolate, base connate, valvate, sometimes with nectarines, persistent, with stellate and glandular hairs outside, about 1-2 cm long, corolla showy and large, yellow, white, orange, and purple at the base, campanulate. Staminal column about 4-9 cm long, filaments about 3-9 mm long, anthers basifixed, throughout. Ovary superior, 5 locular, axile placentation, style about 5-5 mm long, stigma discoid, capitate, reddish or orange. Fruit capsule, globose, are formed rarely, about 2.5-3 cm across, apex beaked or rounded, seeds reniform, about 5 mm across, dark brown *tsinensis*



Economic importance

Most of the hibiscus plant's economic value, particularly as an ingredient in herbal teas, comes from the red calyx, although the leaves, seeds, and flowers are also used in local forms of traditional medicine.

2. *Hibiscus vitifolius L.*

Common name: Kaattu vellooram

Family: Malvaceae

Description: Grape Leaved Mallow is a herb, almost a shrub, up to 2.5 m tall, usually densely velvet-hairy all over. Leaves 2.5-6 cm long, 2-5 cm broad, subcordate-rounded at base, acute at apex, serrate to crenate, not lobed or shallowly 3 to 7-lobed, broadly ovate to orbicular, densely pubescent on both surfaces; stalk 1-5 cm long. They do look like grape leaves, hence the species name vitifolia. Flowers occur singly in leaf axils. Flower stalk is 1.5-3 cm long, in fruit up to 5 cm. Sepals fused below the middle, 1.5-2 cm long. Flowers are 4-6 cm across, pale yellow to yellow with a large, purple centre. Petals are 3-5 cm long, 2-3 cm broad, outside with simple and 2 rayed hairs towards the top, glabrescent, obovate. Staminal column 1-2 cm long, regularly antheriferous all over, glabrous.



Economic importance: The bark yields a fibre used in West Africa, DR Congo and Kenya for making rope. In Madagascar women use the fibre in handicrafts. The plant is grazed by livestock in Kenya and Tanzania. Mucilage from the roots is applied to hair and skin to kill parasites. In Kenya the root is used for killing lice. In South Africa Venda people take a root decoction to treat vaginal discharge. In Asia aqueous extracts of the root bark are traditionally used for the treatment of jaundice, inflammation and diabetes. Hibiscus vitifolius has ornamental value.

3. *Sida acuta*

Family: Malvaceae

Common name: common wireweed

Description: a small, erect, perennial shrub, branching profusely from the base. It usually ranges from 30-150 cm in height, but grows to 3 m in favourable conditions in northern Australia (Lonsdale et al., 1995). The stems are fibrous to almost woody, with a tough stringy bark. There is a deep, tough taproot. The leaves are alternate, lanceolate, acute, tapering towards both ends, and on a short, hairy petiole 3-6 mm long. The leaves have toothed margins, are smooth or have sparse stellate hairs and have prominent veins on the under surface. The leaves are quite variable in size, from 2-9 cm long and 0.5-4 cm wide. The



pair of stipules at the base of each leaf are not equal, with one frequently much narrower than the other. The flowers are yellow, solitary, 1-2 cm in diameter and on a short stalk 0.3-0.8 cm long. There are five petals, joined at the base and with a shallow notch at the apex. The fruit is a hard, brown capsule, 3-5 mm in diameter, breaking into 5-8 triangular segments. Each segment contains one seed and has a pair of sharp awns or 'beaks' 1-1.5 mm long which attach readily to animal fur or clothing. The seeds are small, reddish-brown to black, wedge-shaped, deeply indented on both sides, rounded on the back and about 1.5 mm long.

Economic importance

Different parts of *Sida acuta* have been used for various purposes such as neurological disorders, headache, leucorrhoea, tuberculosis, diabetes, malarial and other fevers, uterine disorders, rheumatic problem, renal inflammation, asthma, ulcers, childbirth and worms, etc

4. *Sida rhombifolia*

Family: Malvaceae (Mallow family)

Common name: Cuban jute, Jelly leaf, Queensland hemp

Description: This is a weed very common in India and Sri Lanka in the dry country. A summer annual with yellow flowers and very small spines at the base of each leaf and branch. This plant most often occurs as a weed of peanuts, cotton, and soybeans. Leaves: Arranged alternately along the stem, approximately 3/4 to inches long, with petioles that are less than 1/3 the length of the leaves. Leaves are widest at or above the middle and taper toward the leaf bases (rhombic) The upper 1/2 of the leaves have toothed or serrated margins while the remainder of the leaves are untoothed. Flowers: Occur singly on flower stalks (peduncles) that arise from the area between the stems and leaf petioles. Flowers consist of 5 yellow petals that are 4 to 8 mm long. The seedlings with 2 heart-shaped cotyledons, the small spines that occur at the base of each leaf petiole, and the 'rhombic' leaves are all characteristics that help in the identification of jelly leaf.



Economic importance

The plant has been widely used as traditional remedies for diarrhea, malarial, gastrointestinal dysentery, fevers, asthma and inflammation. *Sida* spp. have been proven scientifically to exhibit antibacterial, antioxidant .

5. *Urena lobata* L.

Common name: Caesar weed or Congo jute

Family: Malvaceae

Description: Erect branched subshrubs to 2m tall; stems densely stellate-pubescent. Leaves simple to 3 - 5 shallowly lobed, alternate, 3-10 x 3-9 cm, broadly to narrowly ovate, upper most leaves sometimes lanceolate, 3-5 angular to shallowly lobulate, truncate or cordate at base, margin obscurely crenate-serrate; 5-7-nerved from base, sparsely stellate-pubescent above, densely stellate-pubescent below, with 1-3 elliptic nectaries on principal nerves, lobes generally acute or acuminate, varying in size; petioles 3-8 cm long, stellate-pubescent; stipules up to 4 mm long, linear to subulate. Flowers axillary, usually solitary, sometimes 2 or 3 in a cluster; pedicels 3-8 mm long. Involucral bracts 5, 5-6 x 1.5-2 mm, spatulate, connate at base, clothed with rigid hairs. Calyx 5-9 mm long, campanulate, 5-parted; lobes ovate-elliptic, margins pubescent. Corolla pink with dark center; petals to 15 x 9 mm, obovate with rounded apex, stellate-hairy without. Staminal column 8-10 mm long, pinkish; anthers pale pink. Ovary to 4 mm across, subglobose, stiff-hirsute; Stigmas capitate. Schizocarp 10-12 mm across, globose; mericarps 5, to 8 x 5 mm, trigonous, densely stellate-pubescent, also with many glochidate spines; seeds to 4 mm long, reniform, angular.



Economic importance : commonly used in the treatment of diabetes, gonorrhoea, malaria, dysentery, abdominal colic, nausea, rheumatism, and edema in folk medicines.

OXALIDACEAE

6. *Biophytum sensitivum*

Family : Oxalidaceae

Common name : Mukkutti, tropical little tree

Description: It is an annual herb 5-25 cm tall, base woody. Flowers are borne in several flowered umbels carried on flower-cluster-stalks 2-7 cm, nearly equal to leaf length. Petals are yellow, longer than sepals. Sepals are 5-6 mm, with glandular septate trichomes. Stem is simple, slender to robust, bristly especially apically. Leaves are 3-13 cm; axis slender, moderately bristly; leaflets 6-14 pairs; leaflet blades oblong to obovate-oblong, usually hairless, occasionally sparsely covered with trichomes, base almost symmetric. Leaves are sensitive to touch, and fold up on being disturbed. Capsule ellipsoid-obovoid, velvet-hairy. Flowering: July-December.



Economic importance

Used as a traditional folk medicine in ailments such as inflammation, arthritis, wounds, tumors and burns, gonorrhea, stomach ache, asthma, cough, degenerative joint disease, urinary calculi, diabetes, snake bite, amenorrhea and dysmenorrhea.

SAPINDACEAE

7. *Cardiospermum halicacabum*

Family: Sapindaceae

Common name: Balloon vine, Heart seed.

Description: Climbing or trailing herbs. Leaves alternate, bi-ternate; leaflets 2-4 x 1-2.5 cm, ovate-lanceolate, deeply dentate or lobed, apex acute to acuminate, membranous; petiole to 3 cm long. Flowers white, polygamous in 3-7-flowered axillary tendril-bearing peduncles; peduncle up to 5 cm long. Sepals 4, in 2-pairs, outer pair smaller.



Petals 4, white, unequal, with basal scales. Stamens 8; filaments unequal, pilose. Ovary 3-locular; ovule 1-per locule; stigma 3-fid. Capsule papery, inflated, 3-lobed, winged. Seeds one in each chamber, black with a white eye.

Economic importance: This plant is used for the treatment of rheumatism, abdominal pain, orchitis, dropsy, lumbago, skin diseases, cough, nervous disorders, and hyperthermia.

MORINGACEAE

8. *Moringa oleifera*

Common name :moringa,drumstick tree

Family :Moringaceae

Moringa oleifera is a fast-growing, deciduous tree that can reach a height of 10–12 metres and trunk diameter of 45 centimetres. The bark has a whitish-gray color and is surrounded by thick cork. Young shoots have purplish or greenish-white, hairy bark. The tree has an open crown of drooping, fragile branches, and the leaves build up a feathery foliage of tripinnate leaves. The



flowers are fragrant and hermaphroditic, surrounded by five unequal, thinly veined, yellowish-white petals. The flowers are about 1–1.5 cm long and 2 cm broad. They grow on slender, hairy stalks in spreading or drooping flower clusters, which have a length of 10–25 cm. Flowering begins within the first six months after planting. In seasonally cool regions, flowering only occurs once a year in late Spring and early Summer (northern hemisphere between April and June, southern hemisphere between October and December).

Economic importance

Moringa has the potential for commercial production, either as a cash crop or as a component of agro forestry systems. The introduction of Moringa into the existing production systems will enhance food production and biodiversity and industry development from its products and by-products.

FABACEAE

9. *Aeschynomene americana* L.



Common name: Shyleaf, forage aeschynomene.

Family: Fabaceae

Description: Erect or decumbent herbs, to about 2 m tall; stems glandular-hispid to subglabrous. Leaves 2-7 cm long, about 20-60 foliolate, the petiole and rachis hispidulous; leaflets glabrous, subfalcate, 2-several-costate, 4-15 mm long, 1-2 mm wide, ciliate, apiculate, the base asymmetrically rounded; stipules peltate-appendiculate, glabrous or somewhat hispid at the point of attachment, striate, usually ciliate, 10-25 x 1-4 mm, the upper portion attenuate, 2-3 times longer than the lower, acute, or erose portion. Inflorescence axillary, racemose, few-flowered, the axes hispidulous; bracts cordate, acuminate or, sometimes, truncate-flabelliform, about 2-4 mm long, 2-3 mm wide, glabrous, ciliate; bracteoles linear to linear-ovate, 2-4 mm long, 1-1.5 mm wide, acute to acuminate, serrate-ciliate. Flowers about 5-10 mm long. Calyx glabrous to hispidulous, bilabiate, 3-6 mm long;. Petals yellowish to tan, usually with red or purplish lines, glabrous. Fruit 2-3 cm long, 3-9 articulate, the stipe about 2 mm long, the articles semicircular, the upper margin essentially straight, the lower curved, 3-6 mm long, 2.5-5 mm wide, glandular-hispidulous, usually muricate, the margins thickened, reticulate-veiny; seeds dark brown, 2-3 mm long, 1.5-2 mm wide.

Economic importance : This species is widely used as a green manure or pasture plant throughout the tropical world. It is grazed by livestock and may be cut for hay. Cattle readily eat the plant and spread the seeds on their coats and in manure. Available cultivars include 'Glenn'.

10. *Centrosema molle*

Common name: Spurred Butterfly Pea, Large Butterfly Pea

Family: Fabaceae

Description: Spurred Butterfly Pea is a perennial twining herb, sometimes forming mats. Leaves are 3-foliolate, leaflets up to 6.5 cm long, elliptic or oblong-lance shaped, more or less velvety on both surfaces; leaf-stalk 1-5.5 cm long. Inflorescences several-flowered, in leaf-axils; flower-cluster-stalk 2.5-5.5 cm long. Standard petal is up to 4 × 3.5 cm, mauve-



purple with a white or yellowish central band, often flanked by darker purple lines, velvet-hairy outside, with a short spur outside just above the claw. Pods are linear, 5-17 cm long with 2 raised ribs along the edges of the valves, velvety when young, becoming hairless. Spurred Butterfly Pea is native to Central America, cultivated and now naturalized widely in India.

Economic importance: Like other N fixing legumes, centrocema is a soil improver. Its association with grass is beneficial to grass yields making Nitrogen fertilizer unnecessary. Centrosema is also used as green manure crop in rubber, coconut and oil-palm plantations.

11. Name: *Crotalaria pallida* Aiton.

Common name: kilukilukki

Family: Fabaceae

Description: Smooth Rattlepod is a perennial herb or subshrub, with stems ascending or erect, 1-2 m tall. Leaves are trifoliolate, leaflets elliptic, ovate. Leaf base is wedge-shaped or rounded, with leaf stalk mediately long. Flowers are long, terminal, somewhat lax inflorescences about 15-40 cm long. Petals are yellow with lines near base, standard petal, striate keel petals, with non twisted prolonged beak. Pods brown at maturity.



Economic importance: *C. pallida* is used as a ground cover and a green manure crop throughout the humid tropics, though on a limited scale. In tea, rubber and coconut plantations in Sri Lanka and South-East Asia, and in cocoa plantations in West Africa, it is used as a green manure and planted in the inter-rows to reduce erosion.

12. *Desmodium hirtum*

Family: fabaceae

Description: *Desmodium hirtum* is an annual or perennial prostrate herb of short lifespan, reaching more than 1 m in length. The pubescent stems are branched and spread on the ground, more or less rooted at the nodes. The leaves are alternate, compound trifoliolate, with largely obovate leaflets, 7 to 24 mm long and 7 to 20 mm wide, with rounded, truncate or notched apex. Small flowers, about 4.5 mm, pale pink, are arranged in terminal or axillary, loose, more or less erect racemes. The fruits are articulated pods, with 3 to 6 segments, curved, covered with hooked hairs.



13. *Desmodium paniculatum*

Common name: Panicked-leaf ticktrefoil, narrow-leaf tick-trefoil or panicked tickclover

Family: Fabaceae

Description: *Desmodium paniculatum* grows to 3 feet tall in an erect and spreading habit with alternate, pinnately-trifoliolate leaves. The leaves are lanceolate to oblong and are usually 2 to 10 times as long as wide. The pedicels are around 1 cm. The flowers of the paniculate inflorescence are light pinkish to lavender and appear June through



September. The sticky lomenta that many people find attached to their shoes and pants are arranged in a row of 2-6 superiorly sinuate and inferiorly triangular segments and appear August–October.

Economic importance: While this species hasn't been tested for medically or commercially beneficial compounds like other species of *Desmodium*, studies have shown the value of this species, as well as other legumes, as a native forage for pasture use. While not as easily digestible and protein-rich as some non-native legumes and grasses, the panicle-leaf ticktrefoil can be a good source of protein-based fodder for livestock during the warmer months of the year.

14. *Grona triflora*

Family: Fabaceae

Common name : black clover, creeping tick trefoil, three-flower beggarweed, lesser clover-leaved desmodium, matty desmodium, tropical trefoil



Description: Prostrate, mainly perennial herb, forming mat 3–5 (–50) cm tall, strong, woody taproot. Stems slender, reddish, white or cream pubescent, much branched, extending to 50 cm, frequently rooting at the nodes. Leaves pinnately trifoliolate (lower leaves sometimes unifoliolate), leaflets 3–10 (–15) mm long and 3–9 (–14) mm wide, obovate to obcordate, base cuneate, apex truncate or emarginate, glabrous above, finely pubescent below; lateral leaflets smaller than terminal leaflet; petiole 4–8 (–15) mm long, pubescent; stipule c. 5 mm long, ovate-lanceolate; rachis 3–6 mm long; petiolules 2–3 mm long. Flowers 5 mm long, in short axillary racemes of 1–3 (–5); corolla pink to purple, rarely white; pedicel puberulent, 3–8 mm long, to 13 mm at fruiting. Pods flat, segmented, 5–12 (–18) mm long and 2–3.5 mm wide, comprising 3–5 (–7) articles, covered with minute hooked hairs; upper suture straight, lower suture constricted between the articles; articles nearly quadrate, reticulately veined, separating when ripe. Seed yellow, reniform to orbicular c. 1.2 × 1.7 mm

Economic importance

Known substances found in trefoils include alkaloids and flavonoids. The entire plant is used in human nutritional treatment. Creeping tick trefoil has been utilized in folk medicine.

Conditions it has been used for include wounds, diarrhea, rheumatism, dysentery, and skin diseases.

15. *Mimosa pudica*

Family: Fabaceae

Common name: Thottavadi

Description : *Mimosa pudica* is an herbaceous to woody plant, often spread on the ground but sometimes erect, reaching 20 to 50 cm, sometimes up to 1 m high. It is hairy to glabrous, with scattered curved spines. The leaves are compound, alternate,



on the top of a petiole, 2 to 6 cm long. 2 to 4 principal leaflets arranged in finger like shape, which are in turn composed of 10 to 28 pairs of linear to oblong divisions of the leaflets. The leaves are sensitive and close when touched. The flowers are grouped in pink balls at the end of a stalk at the base of the leaves. The fruits are agglomerated flat pods, composed of 3 to 4 articles and with long stiff hairs on the edge.

Economic importance

It majorly possesses antibacterial, antivenom, antifertility, anticonvulsant, antidepressant, aphrodisiac, and various other pharmacological activities. The herb has been used traditionally for ages, in the treatment of urogenital disorders, piles, dysentery, sinus, and also applied on wounds.

CAESALPINACEAE

16. *Bauhinia accuminata* L.

Common name: Mandaaram

Family: Caesalpiniaceae



Description: The dwarf white bauhinia is native to Asia. This is a perfect little tree for places where you don't want anything wild to take over. It will grow no more than two or three meters, and won't take up much space or get in anyone's way. It really is quite inoffensive. Beautiful white flowers cover this tree in spring and fill the air with a sweet clean fragrance. The white flowers look like snowflakes hanging on the branches. Sometimes it is called Snowy Orchid Tree. The leaves are shaped a little like a cow's hoof.

Economic importance: Used mainly for heavy packing cases, agricultural implements, posts, scantlings, rafters and inferior construction, besides it is used for fuel. The leaves give a fodder of medium quality. Flowers are cooked as vegetable and pickles. The bark is used as a cheap tan, dye and in indigenous medicine.

MELASTOMACEAE

17. *Osbeckia aspera*

Common name: rough small leaved spider flower, kaattukadali

Family: Melastomataceae

Description: Flowers are pink in color, show terminal cymes inflorescence. Fruits are single seeded capsule. Erect shrubs; branchlets more or less pubescent with appressed to spreading hairs. Leaves elliptic-lanceolate, base attenuate, acute to shortly acuminate at apex, basally 5-ribbed, more or less pubescent with appressed short hairs on both sides, drying yellowish-green; petiole to 1 cm long. Flowers c. 2 cm across, in terminal cymes, sometimes elongated clusters, pentamerous. Calyx tube 6-8 mm long, c. 5 mm wide, cupular, with dense short bristle-like hairs; lobes 5, oblong, obtuse. Petals 5, pink, ovate, apex rounded. Stamens 10. Ovary hairy at apex; style exserted, stigma curved, papillate. Capsules ovoid, ribbed. Seeds many.



PASSIFLORACEAE

18. *Turnera subuleta* Sm.

Common name: Butter cup plant

Family: Passifloraceae

Description: White Alder is a perennial herb, often woody at the base, 30-80 cm high, with a frequently very strong taproot. Native to West Indies, Brazil, and Central America, White Alder sports white flowers with yellow halo around black centers, and is naturalized in the Indian subcontinent. Stems cylindrical, leafy over a considerable length, densely hairy.



Leaves not crowded, ovate-elliptic or ovate-oblong, very distinctly dentate-serrate. Flowers in the higher leaf-axils. Petals with a slightly hairy, 3-4 mm long claw, blade obovate, broadly rounded, entire, above the claw glabrous, finally above the base much spreading or subreflexed.

Economic importance: Turnera Subulata is able to improve the ecological balance in the company's plantation area and the community, reducing the need for pesticide usage.

MOLLUGINACEAE

19. *Mollugo pentaphylla*

Common name: Five Leaved Carpetweed, Mollugo, Parpaadagam

Family: molluginaceae

Description: Ascending herbs. Leaves in whorls of 2-6, unequal, 1.5-3.5 x 0.6-1.2 cm, obovate to oblong-lanceolate, base attenuate, apex subacute or obtuse, glabrous. Cymes axillary and terminal. Pedicels filiform, 5-8 mm long. Tepals 5, 2-3 mm long, elliptic-oblong, obtuse, green with white scarious margins, somewhat accrescent in fruit. Stamens 3-5. Ovary ovoid, c. 2 mm long, 3-5-celled; ovules many; styles 3-5. Capsules 2-2.5 mm across, ovoid, membranous. Seeds many, reniform, areolate, reddish brown.



Economic importance

Has analgesics, anti-inflammatory, antidiabetic, antioxidant, antipyretic effects. Leaves cooked and eaten as a pot herb.

APIACEAE

20. Centella asiatica

Family: apiacea

Common name: gotu kola, kodavan, Indian pennywort and Asiatic pennywort,

Description Centella grows in temperate and tropical swampy areas in many regions of the world. The stems are slender, creeping stolons, green to reddish-green in Color, connecting plants to each other. It has



long-stalked, green, rounded apices which have smooth texture with palmately netted veins. The leaves are borne on pericladial petioles, around 2 cm (0.79 in). The rootstock consists of rhizomes, growing vertically down. They are creamish in color and covered with root hairs. The flowers are white or crimson in color, born in small, rounded bunches (umbels) near the surface of the soil. Each flower is partly enclosed in two green bracts. The hermaphrodite flowers are minute in size, less than 3 mm (0.12 in), with five to six corolla lobes per flower.

Economic importance

Centella asiatica has been used to treat many conditions for thousands of years in India, China, and Indonesia. It was used to heal wounds, improve mental clarity, and treat skin conditions such as leprosy and psoriasis.

RUBIACEAE

21. *Morinda citrifolia*

Common name: Indian mulberry

Family : Rubiaceae

Description : Great morinda is a shrub or small tree that grows well on sandy or rocky shores. Apart from saline conditions, the plant also can withstand drought and grows in secondary soils. It can grow up to 9 m tall, and has large, simple, dark green, shiny and deeply veined leaves. The plant flowers and fruits all year round. The flowers are small and white. The fruit is a multiple fruit that has a pungent odour when ripening, and is hence also known as cheese fruit or even vomit fruit. It



is oval and reaches 4-7 cm in size. At first green, the fruit turns yellow then almost white as it ripens. It contains many seeds. It is sometimes called starvation fruit. Despite its strong smell and bitter taste, the fruit is nevertheless eaten as a famine food. Great morinda is native to Tropical & Subtropical Asia, including India.

Economic importance

It is well suited for inter- cropping within traditional agroforestry subsistence farming systems or as a monocrop in full sun. It has attained significant economic importance worldwide in recent years through a variety of health and cosmetic products made from leaves and fruits.

22. *Pentas lanceolata* (Forssk.) Deflers.

Common name: Star cluster

Family: Rubiaceae

Description: Dark green, lance-shaped, somewhat furry and deeply veined leaves provide a lush backdrop for prolific clusters of never-ending, five-petaled flowers. These may be red, white, lavender, purple, or shades of pink. Some are two-toned. All are extremely attractive to butterflies, and the red and dark pink varieties delight hummingbirds. Depending on the variety,



the habit of growth may be upright to about 3', or low and mounding. Full sized pentas are often sprawling, as tall stems will topple over. The flowers are held in terminal clusters and self-deadhead. In warm weather the plant grows fast and stays in bloom constantly. Where winters are not too severe, pentas are perennial. They may always be treated as an annual and replanted after danger of frost for long-lasting summer colour. Africa is probably the original home of pentas.

Economic importance: Conventional medicinal treatment will include the use of antibiotics, painkillers, and anti-inflammatory medicines. If there is an abscess, surgery will be carried out to drain it. In Ethiopia, Pentas leaves and roots are used as the herbal treatment (used topically and orally) to treat lymphadenitis.

23. *Spermacoe ocymoides*

Family; Rubiaceae

Common name: Purple-leaved Button Weed, Purple Leaved Button Weed

Description: Pubescent, erect herbs. Leaves decussate, elliptic-oblong, to 3.5 x 1.5 cm, sparsely scabrous, nerves 3 or 4 pairs, base cuneate to attenuate, apex acute, (sub)sessile; stipules 1 x 0.8 cm. Flowers 40-50 per node. Calyx truncate, strigose



without; lobes 4, unequal, linear-lanceolate, 2 short and 2 long. Corolla white, 2 mm wide;

tube 2 mm, glabrous within; lobes 4. Stamens 4. Capsule truncate, 1.5 x 1 mm, dehiscing transversely.

Economic importance

The leaves are applied in a poultice as a treatment for headache. The finely crushed leaves are applied to wounds. The sap is used to treat eczema, worms and ringworm.

ASTERACEAE

24. *Acmella radicans*

Family: Asteraceae

Common name: White Spot-Flower

Description: White Spot-Flower is an annual herb native to parts of Africa. It has become naturalized in parts of India, and is believed to be invasive. It is an erect to prostrate herb up to 1 m high, lower nodes often without roots. Stalks with internodes 0.5 to 13 cm in length. Leaves have stalks 0.2-2 cm long, blade 1-9 cm long and 0.3-5.5 cm wide, ovate to ovate-lance-shaped, base broad, pointed to long-pointed at the tip, margin entire or with short teeth. Inflorescence is terminal or in leaf axils, solitary or paired cones. Disc-shaped flower-heads are carried on stalks up to 7 cm long, with spindle-shaped receptacle, up to 1.5 mm in diameter and 6 mm in height. Flowers are up to 2 mm long, 5 lobed. Achenes are up to 1.5 mm long, hairless to hairy spread distally, the margins ciliate, pappus consisting of 2 fine bristles.



Economic importance:

Acmella radicans produces at least seven alkaloids. The uses of the *Acmella radicans* in traditional medicine are, relieve toothache and affections of throat and gums as well as to paralyse the tongue, flower heads are known as a popular remedy for stammering children. A tincture made from the flower heads is also substituted for a tincture of pyrethrum for the treatment of inflammation in the jaw-bone; seeds are regarded as a stimulant and sialagogue

common cold, fever, and cough; whole plant is boiled in water and the liquid as well as the solid are administered against dysentery; a decoction is used as a diuretic and lithotriptist agent and employed as a bath against rheumatism, but also as a lotion against scabies and psoriasis.

25. *Ageratum conyzoides*

Common name: Appa grass, Goat Weed

Family: Asteraceae

Description: Herbs, viscid hairy. Leaves 5-7 x 3-5 cm, ovate, apex acute, crenate, base rounded; petiole 1-3 cm long. Heads white, to 7 mm across, in terminal corymbose panicle; bracts 1-3-seriate, 3-4 mm long, elliptic, toothed at apex, 3-ribbed. Flowers all similar, bisexual; corolla 2.5 mm long, tubular, white, glabrous, 5-lobed at apex; **stamens** 5, anthers linear. Achenes 2 mm long, linear, 5-angled, hirsute along the angles; pappus 3-4 mm long, many, setaceous.



Economic importance

Used to treat burns and wounds. Has antibacterial effects. A decoction of the fresh plant is used as a hair wash, leaving the hair soft, fragrant and dandruff free. The leaves and the flowers yield 0.2% essential oil with a powerful nauseating odour.

26. *Centrantherum punctuatum*

Family: Asteraceae

Common name: Brazil Button Flower, *Larkdaisy*

Description : Brazil Button Flower is a tender perennial that typically grows to 12-18" tall. It is a spreading ground cover which is highlighted by a long continuous June-September bloom of fluffy, button-shaped, lavender-blue flowers (to 1" wide). It



is native to Brazil. Perennial plants will spread in the garden to 2-4' wide or more. Annual

plants will spread to 2' wide. Stems are clad with simple, coarsely-toothed, oval to elliptic, olive green to pale green leaves (each to 2-3" long) with depressed veins. Leaves are pleasantly fragrant.

Economic importance

traditionally used as a curative against diverse disorders like inflammation, tumor, depression, and hypertension.

27. *Crassocephalum crepidioides*

Common name: Ebolo, thickhead, redflower ragleaf, or fireweed

Family: Asteraceae

Description: Thickhead is an erect little-branched herb to 1 m tall, smooth or finely hairy. Leaves with lamina elliptic to ovate in outline; lowest leaves lyrate-pinnately cut, up to 20 cm long and 10 cm wide, base often with a pair of stipule-like lobes, margins coarsely toothed; upper leaves smaller, not lobed or with a lobe each side towards base; petiole up to 4 cm long. Heads in cymes, few to many, nodding at first, later erect; heads 4 mm diameter. Flowerheads are cylindrical, green, with red florets visible on top. Seeds are floating balls of numerous silky white hair,



Economic importance :The species is invasive.contains the hepatotoxic and tumorigenic pyrrolizidine alkaloid, jacobine. However, in another study, it is shown that the antitumor activity and macrophage nitric oxide produce action.

28. *Cyanthillium cinereum*

Family : Asteraceae

Common name: little ironweed

Description: *Cyanthillium cinereum* is an annual herb up to 120 cm (4 feet) tall. It produces flat-topped arrays of numerous flower heads, each with pinkish or purplish disc florets but no ray florets. The species can be confused with



Emilia sonchifolia, but the flower bracts of the latter are much longer and vase-shaped. *Cyanthillium cinereum* has been used for smoking cessation in Thailand and other countries, and as relief for the common cold

Economic importance

Cyanthillium cinereum has been used for smoking cessation in Thailand and other countries, and as relief for the common cold. It has therapeutic potentials against asthma, cancer, cholera, colic pain, cough, diarrhea, dysentery, impotency and night-blindness. The seeds are used as a source of alexipharmic and anthelmintic drugs, and as an alterative in leprosy and chronic skin diseases.

29. *Eleuthera ruderalis*

Family: Asteraceae

Common name : Ogiera

Description: *Ogiera* is an annual herb with stem becoming hairless. Leaves are ovate or ovate-oblong, base wedge-shaped, sometimes oblique, tip pointed or nearly blunt, velvet-hairy on both surfaces, 3-nerved from base; leaf-stalk up to 1 cm long. Flowers-heads are 6-12-flowered, in leaf-axils, homogamous, non-rayed; flower-cluster-stalk 0.2-1 cm long, erect at first, becomes curved in fruit. Involucral bracts are in 2 series, outer leafy, 5-8 x 2-3 mm. Flowers are bisexual. Flower are yellow, tubular, 3-4 mm long, 5-lobed. Anthers are arrow shaped at base. Seedpods are 3-3.5 mm long, obovoid, slightly angled, tubercled, finely velvet-hairy.



Economic importance

Whole plant decoction enhance the production of milk in lactating/nursing mothers, also taken for high blood pressure. Leaf paste applied on cuts and wounds, warmed and applied in rheumatic pain.

30. *Emilia sonchifolia*

Family; Asteraceae (Sunflower family)



Common name; Purple Sow Thistle, Cupid's shaving-brush, emilia, Flora's paint brush, red tassel-flower

Description; Purple Sow Thistle is an annual herb with a branched taproot. Stems are weak, erect or often branched at the base, smooth or sparingly hairy, 10 to 60 cm tall. This species is recognized by the sow-thistle like leaves. Lower leaves are deeply and irregularly toothed, kidney-shaped, ovate, triangular-ovate or obovate, 4-16 cm long, 1-8 cm wide with narrowly winged stalks. Upper leaves are smaller, alternately arranged, usually entire, sometimes coarsely toothed, stalkless and somewhat clasping the main stem. Inflorescence is an involucrate flower head resembling a single flower, 1.2-1.4 cm long, 4-5 mm wide, urn-shaped, long-stalked, at the end of branches. Flowering branches usually dichotomously branched with 3-6 heads, each head or capitulum a composite of numerous florets. The cup of the flower-head is green, cylindrical, somewhat inflated below. Florets are 30-60 per head, purple, scarlet, red, pink, orange, white or lilac. Purple Sow Thistle is found in the Himalayas, up to altitudes of 2100 m.

Economic importance

It is one of the most commonly used plants in Manipur. Its main uses are in stomach complaints. Fresh leaves are eaten raw with Ametpa (alocal delicacy prepared with chilies and fermented small fishes called Ngari) for 5-6 days. Three or four leaves are eaten daily in this manner.

31. *Eupatorium odorata*

Family: Asteraceae

Common name: Siam weed, Christmas bush, jack in the box, devil weed,

Description: *Chromolaena odorata* is a rapidly growing perennial herb. It is a multi-stemmed shrub which grows up to 2.5 m (100 inches) tall in open areas. It has soft stems but the base of the shrub is woody. In shady areas it becomes etiolated and behaves as a creeper, growing on other vegetation. It can then become up to 10 m (33 feet) tall. The plant is hairy and glandular and the leaves give off a pungent, aromatic odour when crushed. The leaves are opposite, triangular to elliptical with serrated edges. Leaves are 4–10 cm long by



1–5 cm wide (up to 4 x 2 inches). Leaf petioles are 1–4 cm long. The white to pale pink tubular flowers are in panicles of 10 to 35 flowers that form at the ends of branches. The seeds are achenes and are somewhat hairy. They are mostly spread by the wind, but can also cling to fur, clothes and machinery, enabling long distance dispersal. Seed production is about 80,000 to 90,000 per plant. Seeds need light to germinate. The plant can regenerate from the roots. In favorable conditions the plant can grow more than 3 cm per day .

Economic importance

It is used as a traditional medicine in Indonesia. The young leaves are crushed, and the resulting liquid can be used to treat skin wounds.

32. *Mikania micrantha*

Family :Asteraceae

Common name :Bitter vine, American rope

Description: A perennial herbaceous vine, climbing, sparse pubescence nearly hairless. The stems are slender, hexagonal, often highly branched and intertwined, yellowish to brown. The leaves are simple, opposite, petiole long and hairy. The leaf blade is broadly ovate or triangular, with acute apex and deeply cordate



base and attenuated, virtually glabrous or underside with sparse hairs. The flowers are grouped by 4 small heads whitish to greenish white, arranged in inflorescences repeatedly branched, carried by a long stalk. Dry fruits are black, oblong with 4-5 ribs and truncated at the top.

Economic importance

In Africa, leaves are used as a vegetable for making soups. The weed is used as a cover crop in rubber plantations in Malaysia. It is also planted on slopes to prevent soil erosion. Mikania green manure has been reported to increase the yield of rice in Mizoram, India

33. *Synedrella nodiflora* (L.) Gaertn.

Common name: Cinderella Weed

Family: Asteraceace

Description: A tall herb. Leaves ovate-lanceolate, hispidly hairy. Inflorescence capitulum (Head). Flowers Heads axillary or between forks of branches, pale yellow. Achenes of ray florets prominently ribbed, lacerate, those of disc florets compressed, subtrigonal, minutely tuberculate.



Economic importance : used for the treatment of inflammatory diseases, including liver disease, asthma, rheumatism and earache, in tropical countries throughout America, Asia and Africa.

34. Name: *Tridax procumbens* L.

Common name: Coat buttons

Family: Asteraceae

Description: A slender, branched, low, Straggling Herb, up to 50cm. Procumbent herbs. Leaves, simple, lanceolate-ovate, apex acute, serrate, bulbous-based, entire, rarely pinnatisect, opposite, . Peduncle very long, strigose.; petiole 5-10 mm long. Flower in solitary or at the forks of dichotomy; cream to yellow. Flowering throughout the year. Peduncles thin, involucre 5-6mm diameter; outer phyllaries ovate to obovate, acuminate, herbaceous, hirsute; inner phyllaries oblong. Paleae narrow oblong-lanceolate. Ray flower corolla tubes, pilose; ligules yellowish-white, oblong, 2-3-lobed. Disc corollas, partly pubescent. Fruits are achenes longest pappus bristles subequal to tube of ray flower and whole disc flower.



Economic importance: Used as Oil plants, high Medicinal properties, used as Dye, Pesticides.

35. *Vernonia cinerea*

Common name: Ash colored fleabane, Puvankurunal

Family: Asteraceae

Description: Annuals or perennial herbs, stem ribbed, smooth or puberulus. Leaves variable, 2-8 x 1-3 cm, ovate, acute at both ends, thinly hairy below; petiole 1-2 cm long, slender. Heads 5 x 3 mm, in terminal corymbose cymes, peduncled; outer bracts minute, inner oblong, acute, cuspidate, hairy. Flowers 5-10, similar; corolla 3 mm long, glabrous. Achenes 1.5 mm long, hairy; outer pappus 1 mm long, setaceous, inner 3 mm long.

Economic importance

It is used for the treatment of inflammation, diarrhoea, cough, smoking cessation, asthma, Parkinson's disorder and leprosy.

36. Name: *Wedelia chinensis* (Osbeck) Merr.

Common name: Aswagandhi, Kadal kayyonni, Manjakanjuni.

Family: Asteraceae

Description: Herbs, procumbent or ascending, rooting at the lower nodes; stems reddish, glabrous. Leaves spatulate-oblong, acute, trinerved, attenuate margins flat or slightly in rolled, entire or feebly serrate, shortly appressed hairy on both the surfaces, subpetiolate. Heads yellow, solitary on terminal peduncles; peduncles thin. Involucral bracts in 2

series; outer oblong, acute or obtuse at the apex, appressed pubescent; inner lanceolate. Ray florets few; corolla. Achenes dark brown, rugulose, glabrous; those of ray florets triquetrous; those of disc florets compressed. Pappus a minute, irregularly margined, withered cup at maturity.

Economic importance: *Wedelia chinensis* are applied as hepatoprotection and a cholagogue and as folk medicine to treat various diseases such as diarrhea, jaundice, cough, diphtheria, headache, and pertussis; to help relieve mental stress; and to promote sleep.



APOCYNACEAE

37. Name: *Allamanda cathartica* L.

Common name: Golden trumpet

Family: Apocynaceae

Description: A tropical twining vine with deeply veined, whorled leaves and large, trumpet shaped bright yellow flowers. Leaves are long, narrow, opposite, simple, glossy, and leathery. This vigorous climbing plant has leathery evergreen leaves arranged in whorls of 4 at intervals along the stem and bright yellow flowers. Stem green, round, hairless. Flowers are



tubular, yellow, and in clusters at ends of branches from summer to fall. Flowers up to around 3 1/2 inches are held in groups of 12 on short branches at the ends of shoots or in the leaf axils. It's rounded fruit capsules (about 4 cm across) are densely covered with soft spines. The seeds are somewhat flattened.

Economic importance: Allamanda species have been used in systems of traditional medicine for various purposes. *A. cathartica* has been used to treat liver tumors, jaundice, splenomegaly, and malaria. In analyses, some species have shown some activity against carcinoma cells, pathogenic fungi, and HIV.

GENTIANACEAE

38. *Canscora diffusa*

Family: Gentianaceae

Common name: Spreading Canscora, Jeerakapullu

Description: Spreading Canscora is a diffuse annual herb, growing up to 15-50 cm high. It has many slender



branches. Stalkless leaves are oppositely arranged on the branches. The leaves are ovate, rounded at the base, 1-2 cm long. Flowers occur in lax cymes at the end of branches. Rosy pink flowers are 1-1.5 cm across with three visible petals. Actually, there are 4 petals. Two of them merge to form a single notched petal. Four stamens emerge out of the flower. Spreading Canscora is found in Flowering: October-November.

Economic importance: The plant possesses immunomodulatory, analgesic, anticonvulsant, antitubercular, anti-inflammatory, spermicidal, central nervous system–depressive, and cardio stimulant properties. Clinical trials of marketed formulation showed very encouraging results.

BORAGINACEAE

39. Cordia currasavica

Family; Boraginaceae

Common name; black sage or wild sage

Description: Black sage is a many-branched shrub growing up to 3 m in height and smelling strongly of sage. Its leaves are lanceolate to ovate in shape, 40–100 mm long and 15–60 mm wide. The small white flowers grow in clusters at the ends of the branches; they have a funnel-shaped corolla, 4–6 mm long. The small, fleshy red fruits each contain a single 4–5 mm long seed.



Economic importance

In traditional Mexican medicine *Cordia curassavica* is used to treat gastrointestinal, respiratory and dermatological disorders in Zapotitlán de las Salinas, Puebla (México).

.CONVOLVULACEAE

40. Ipomoea batatus

Family :Convolvulaceae

Common name :Sweet potato

Description:A vine whose large, starchy, sweet-tasting tuberous roots are an important root vegetable. The young leaves and shoots are sometimes eaten as greens. It is a perennial vine, bearing alternate heart-shaped or palmately lobed leaves and medium-sized morning-glory like flowers that are white in color with a purple throat. The edible tuberous root is long and tapered, with a smooth skin whose color ranges between red, purple, brown and white. Its flesh ranges between white, yellow, orange, and purple.



Economic importance

Sweet potato is ranked seventh in global food crop production and is the third most important root crop.

SOLANACEAE

41. *Capsicum frutescens* L.

Common name: Kanthari mulaku, Bird chilly

Family: Solanaceae

Description: Shrubby perennials. Leaves c. 10 x 5.2 cm, ovate-lanceolate, base obliquely rounded to acute, apex gradually acuminate; petiole to 2.6 cm long. Flowers usually 2-3 per node. Calyx cupular, lobes 5, triangular, acute. Corolla white, lobes 5, triangular-ovate, puberulous without. Stamens 5, exserted; filaments to 1.5 mm long; anthers oblong. Stigma capitate. Fruit green or white, gradually tapering towards apex, erect. Seeds many, compressed, circular.



Economic importance Fruit – raw or cooked are edible. The dried fruit is a powerful local stimulant with no narcotic effect, it is most useful in atony of the intestines and stomach.

ACANTHACEAE

42. *Asystasia gangetica*

Common name :Chinese violet

Family :Acanthaceae



Asystasia gangetica is a species of plant in the family Acanthaceae. It is commonly known as the Chinese violet, coromandel[2] or creeping foxglove. Perennial herb, with usually ascending, branched, quadrangular stem up to 2 m long, often rooting at the lower nodes. Leaves opposite, simple; stipules absent; petiole 0.5–6 cm long; blade ovate to lanceolate, 3–8(–13) cm × 1.5–4.5(–7) cm, base cuneate to cordate, apex acuminate or acute, margin entire, glabrous to sparsely pubescent, with 4–6 lateral veins at each side of the midrib, provided with cystoliths. Inflorescence a terminal raceme up to 25 cm long, with flowers directed to one side. Flowers bisexual, slightly zygomorphic, 5-merous; pedicel up to 3 mm long; calyx with lanceolate lobes 4–10 mm long; corolla funnel-shaped, up to about 2.5(–4) cm long, usually white with purplish spots inside lower lobe, with rounded lobes c. 1 cm wide, lower lobe slightly longer; stamens 4, 2 shorter and 2 longer; ovary superior, densely pubescent, 2-celled, style up to 1.5(–2) cm long, stigma with 2 short lobes. Fruit a club-shaped capsule 2–3 cm long, pubescent and glandular, usually 4-seeded. Seeds ovoid, flattened, 4–5 mm long, grey to brown, with crenate margins, tuberculate, supported by retinacula.

Economic importance

Asystasia gangetica is locally used as a potherb and leafy vegetable, mainly in times of scarcity. In Africa an infusion of the plant is used to ease pain during childbirth, and the sap is applied to sores, wounds and piles, and in embrocations to treat stiff neck and enlarged spleen in children. Powdered roots are considered analgesic and used in treating stomach-ache and snakebites.

43. *Asystasia crispate*

Family: Acanthaceae

Description: Small shrubs. Leaves opposite, 6-9 x 3-5 cm, elliptic-ovate, apex shortly acuminate, base rounded to broadly acute, margin crenulate or crispate, thinly scabrous or puberulous along nerves; lateral nerves ca. 6 pairs; petiole to 2 cm.



Racemes terminal, usually paired, to 8 cm; lower flowers 0.5 cm apart, subsessile; bracts lanceolate, 2 cm. Calyx-lobes 5, lanceolate, 6 x 1 mm, thinly pubescent, acute. Corolla purple, violet to pink, 3 cm across; tube 2 cm, sparsely hairy without; lobes 5, ca. 1 cm. Stamens 2; filaments pairs 7 and 10 mm long; anthers 2.5 mm. Ovary 2.5 mm; style 2 cm. Capsule 1.5 x 0.6 cm, pubescent, beak 1.5 cm; seeds angular, 0.6 cm across.

44. *Justicia procumbens* L.

Common name: Water willow

Family: Acanthaceae

Description: Diffuse herbs, 20-25 cm high, profusely branched.

Leaves 4-6 x 2-3 cm, ovate, acute at either ends, hispid; nerves 5-6



pairs; petioles ca. 1 cm long, hirtus. Spikes 1-2.5 x 0.8-1 cm, terminal, oblong; bracts oblanceolate, cuspidate, ciliate, with green midrib; bracteoles linear. Flowers many; calyx lobes lanceolate, ciliate. Corolla 6-8 mm long, hairy with pink lines; upper lip broadly ovate, narrowly subquadrate; lower slightly 3-lobed. Staminal filaments glabrous. Ovary glabrous. Capsule glabrous; seeds orbicular, brown, striately rugose.

Economic importance : The juice of leaves is squeezed in the eyes in case of ophthalmia.

45. *Thunbergia erecta* (Benth.) T. Anderson

Common name: King's mantle, Bush Clock Vine

Family: Acanthaceae

Description: A small erect shrub with a square stem. Leaves are opposite, ovate-elliptic, acute, with a blunt tooth on either side above the middle, wavy. Inflorescence; Axillary solitary or in pairs. Flowers; Blue purple, bracteate, bracts greenish-white, spathe-like. Calyx very short, cup-like, with 15-teeth, hairy. Corolla curved, funnel-shaped with 5 unequal lobes, yellowish-white at base, central portion cream shading into dense violet lobes and mouth. Stamens 4, didynamous, anthers hairy. Ovary 2-celled, on a disk, style long, stigma bilobed. Fruit; Capsule 4-seeded.



Economic importance : It has been used as traditional medicine for insomnia, depression and anxiety management..

46. *Thunbergia grandiflora*

Family : Acanthaceae

Common name : Bengal clock wine

Description

It is a perennial semi-evergreen flowering vine & it requires trelling or chain-like fencing or arbors for growing over it and it twines around it in a clockwise direction. From the rope-like stems, emerge the dark green leaves that are leathery and have a distinctive elongated heart shape, 4-5 inches long and often have a slightly toothed margin. The 3 inch wide pale blue or white flowers are cup-like with pale yellow to cream blue striped centers. This plant can be in bloom at nearly any time of year but will sulk during cold months.

Economic importance

Used as a medicinal plant, a green manure, for poles, hedges and for fuelwood. It is widely grown as a garden ornamental and wall covering in Kenya. Regarded as a significant environmental weed.



LAMIACEAE

47. *Leucas aspera*

Family: Lamiaceae

Common name: Common Leucas, Thumba

Description: Common Leucas is an erect and diffusely branched annual herb. Flower are borne in distant spherical whorls, in uppermost leaf axils, 1-4, about 2.5 cm in diameter, about 16-20-flowered. Flowers are 8-10 mm white; upper lip short, densely bearded; lower lip clearly longer than upper and projecting forward. Sepal-cup is 7-9 mm, scarcely elongating in fruit, pale green, scarcely curved, with a prominently oblique mouth. Sepal teeth are 8-10, irregular in size, triangular, 2-3 mm long with short spinulose tips. Bracts narrow linear, about 1/2 length of calyces, long-fringed with hairs at margins. Stems are 15-30 cm with spreading short hairs. Leaves linear to linear lanceshaped, weakly rounded toothed to subentire at margins, wedge-shaped above and below; up to 5 x 1.5 cm with adpressed hairs on upper surface and a denser indumentum of short spreading hairs below especially on nerves; leaf-stalk subabsent to about 5 mm on lower leaves. Common Leucas is found in India, Himalayas, and broadly in Subtropical Asia.



Economic importance: The plant is used traditionally as an antipyretic and insecticide. Medicinally, it has been proven to possess various pharmacological activities like antifungal, antioxidant, antimicrobial, antinociceptive and cytotoxic activity.

PLANTAGINACEAE

48. *Scoparia dulcis*

Family: Plantaginaceae

Common name: Sweet Broom Weed, Sweet Broom



Description: Erect annual or perennial herbs. Leaves decussate to whorled, 1-3 x 0.5-1.5 cm, obovate-oblong, base attenuate, margin crenate-serrate, apex acute, penninerved, punctate, chartaceous; petiole to 0.7 cm long. Flowers axillary, solitary or 2; pedicels slender 4-7 mm long. Calyx lobes 2-3 mm, ovate-oblong, ciliate along margin. Corolla white 4-6 mm long, rotate, throat densely hairy, lobes spatulate. Stamens 4, subequal, 3-4 mm long. Ovary globose, 2-celled; ovules many; stigma truncate. Capsules 1-2 mm across, globose. Seeds 4-angled, reticulate.

Economic importance

It is an annual erect herb distributed throughout tropical and subtropical regions of India, America, Brazil, West Indies, and Myanmar. The whole plant is used for ailments like diarrhea, stomach-ache, kidney stones, kidney problems, and fever.

AMARANTHACEAE

49. *Achyranthes aspera*

Family : Amaranthaceae

Common name : kadaladi, prickly chaff flower, devil's horsehip.

Description

It is an erect, long-lived (perennial) herb that grow upto 2 m tall. Stems woody at the base, short-stalked leaves are opposite, simple and egg-shaped with broad end at base (ovate) up to 10 cm long by 8 cm wide, densely to sparsely hairy (pubescent) tapering to a point at both ends and shortly stalked. The small greenish-white flowers form narrow, elongated terminal spikes up to 60 cm long. The bracts surrounding the flowers in the fruiting stage have sharp, pointed tips making the heads spiny to the touch. The sharp-pointed fruits are orange to reddish purple or straw-brown capsules.



Economic importance

Achyranthes aspera is a medicinal plant used as a diuretic for goats and for other veterinary purposes. It is also a weed species

50. *Aerva lanata*

Family: Amaranthaceae

Common name: Gorakhdi, Sani Bur, Kapurimadhuri

Description: Mountain knotgrass is an annual with a branching, somewhat woody root system. The stems are mostly straggling and sprawling and spread widely, sometimes as much as 6 feet (1.8 m) in length. The often stalkless leaves are alternate, oval and 0.5 to 1.5 in (13 to 38 mm) long. They grow from whitish papery stipules with two lobes and red bases. The tiny clusters of two or three flowers grow in the leaf axils. The flowers are about 0.1 in (2.5 mm) long, pink, green or dull white. The flowers are normally self-pollinated. Flowering time is from May to October



Economic importance

This plant is used for food for people and animals. The whole plant, especially the leaves, is edible. The leaves are put into soup or eaten as a spinach or as a vegetable. The plant provides grazing for stock, game and chickens. The plant is used as a traditional medicine . *Aerva lanata* is commonly described in Ayurveda as a diuretic with anti-inflammatory, antihelmintic, anti-bacterial and mild analgesic effects. It is used in the treatment of lithiasis, cough, asthma, and headache and as an antidote for rat poisoning.snakebites.

51. *Alternanthera brasiliana* (L. Kuntz)

Common name: Brazilian Joyweed, Purple Joyweed

Family: AMARANTHACEAE

Description: It is an erect, sprawling, herbaceous plant that may grow up to 3 metres tall, though it is usually less than 1 metre as a cultivated plant. The plant's stems, which range between red, green and purple, are delicately hirsute when juvenile, though they'd become glabrescent as they get older. Its opposite leaves, which are 1–10 cm long and 0.7–5 cm wide, are usually coloured



purple-specked or luminous reddish-purple.^[2] It may lose some of its leaves in winter, making it partially "deciduous" in places that have slightly cool winters.

Its vanilla-coloured, pom-pom flowers are ordered in compact clusters (7–20 mm long) in the top leaf branching and are small in shape. These clusters are rounded to slightly lengthened in shape and are foaled on stalks which are normally 3–10 cm long. It can flower any time of the year, but in temperate and cooler subtropical climates it flowers more often in winter.^[3] Its very small brown fruit (1.5–2 mm long) contains one seed that's generally hidden within the older flower parts.

Economic importance : The plant is used against inflammation, cough, and diarrhea in Brazilian popular medicine. The extracts of *A. brasiliana* exhibited antinociceptive effects in mice, antimicrobial effect, and also anti-herpes-simplex-virus activity

52. *Alternanthera sessilis*

Family: Amaranthaceae

Common name: Sissoo spinach, Brazilian spinach, sessile joyweed and dwarf copperleaf.

Description : This is a perennial herb with prostrate stems, rarely ascending, often rooting at the nodes. Leaves obovate to broadly elliptic, occasionally linear-lanceolate, 1–15 cm long, 0.3–3 cm wide, glabrous to sparsely villous, petioles 1–5 mm long. Flowers in sessile spikes, bract and bracteoles shiny white, 0.7–1.5 mm long, glabrous; sepals equal, 2.5–3 mm long, outer ones 1-nerved or indistinctly 3-nerved toward base; stamens 5, 2 sterile. In the wild it flowers from December until March.



Economic importance

It is used as a local medicine often in mixtures with other medicinal plants, to treat hepatitis, tight chest, bronchitis, asthma and other lung troubles. The leaves and shoots boiled and drunk as antihypertensive remedy

PIPERACEAE

53. *Peperomia pellucida*

Family :Piperaceae (Pepper family):

Common name: Shiny Bush, Slate pencil plant, pepper elder, rat's ear, shiny bush, silverbush

Description:Shiny bush is a common fleshy annual herb, growing by roadside and in wasteland. Stems are translucent pale green, erect or ascending, usually 15-45 cm long, internodes usually 3-8 cm long, hairless. Fleshy leaves are heart shaped, shiny light green, 1.5-4 cm long, 1-3.3 cm wide. It has very small bi-sexual flowers growing in the form of cord-like spikes, 3-6 cm long, arising from the leaf axils. The fruits are also very small, round to



oblong, ridged, first green later black. They have one single seed. Shiny bush has a mustard like odor. The plant can be utilized as a vegetable and in salads. Shiny Bush is native to south America, but widely naturalized and cultivated.

Economic importance

In South America, Shiny Bush is used medicinally. A solution of the fresh juice of stem and leaves is used against eye inflammation. It is also been applied against coughing, fever, common cold, headache, sore throat, diarrhea, against kidney - and prostate problems and against high blood pressure. Shiny bush is also used in Ayurvedic medicine.

UTRICACEAE

54. *Pilea microphylla*

Common name: Gunpowder Plant, Rockweed

Family: urticaceae

Description: Slender succulent herbs; branches and leaves bifarious; stem transparent. Leaves to 4 x 3 mm, ovate-orbicular, base attenuate, apex obtuse, subsucculent, 1-nerved; raphides

transverse; petiole to 1 mm long. Flowers monoecious in small umbellate clusters, 1-1.5 mm across. Male flowers: tepals 4, free, concave, obtuse; stamens 4. Female flowers: tepals connate, 2-4-toothed; ovary c. 0.5 mm long, ovoid, 1-celled; ovule 1. Achene c. 1 mm long, ellipsoid.

Economic importance

Pilea helps in digestion, has analgesic and antibacterial properties and help with high blood pressure. people choose this plant for its curious round shaped leaves, and its also considered a lucky, wealth-attracting plant.

COMMELINACEAE

55. *Commelina communis*

Family Commelinaceae

Common name: Asiatic dayflower

Description: Asiatic dayflower is a strikingly beautiful creeper that grows to approximately 30-90 cm in length. It is easily recognizable by its distinctive, bilaterally symmetrical, deep blue flowers. The leaves are long and fleshy and are densely arranged along the length of a red-hued, robust, stem. The stems of this plant are reclining yet have erect branches atop which the flowers are positioned.



Economic importance: *Commelina communis* has caused serious damage in the orchards of northeastern China. *C. communis* is used in Chinese herbal medicine.

ARACEAE

56. *Pothos scandens*

Common name: Climbing Aroid, Paruvam Valli

Family: Araceae

Description: Stem angled. Leaf 5-9 x 3 cm, lanceolate, apex acuminate, nerves many, united to form 2-3 narrow ribs, glabrous; petiole 3-6 cm long, broadly winged, wing broaden above. Inflorescence axillary; peduncle to 0.5 cm long; spathe 5 mm across, orbicular, obtuse, concave, brown; spadix 3-5 mm across, globose. Flowers densely packed; bracts 3-5, orbicular; stamens 6, free; ovary obovoid, stigma 3-toothed.

Economic importance

Crushed leaves and stem are effective in snake bites. Crushed leaves are used as dressings for wounds and ulcers, internally used as a cholagogue, diaphoretic and a diuretic.

CYPERACEAE

57. *Cyperus rotundus*

Family Cyperaceae

Common name: Common Nut Sedge, coco grass, nutgrass

Description: Common Nut Sedge is a perennial plant, that may reach a height of up to 40 cm. The names "nut grass" and "nut sedge" (shared with the related species *Cyperus esculentus*) are derived from its tubers, that somewhat resemble nuts, although botanically they have nothing to do with nuts. Leaves sprout in ranks of three



from the base of the plant. The flower stems have a triangular cross-section. The flower is bisexual and has three stamina and a three-stigma carpel. The fruit is a three-angled achene. The root system of a young plant initially forms white, fleshy rhizomes. Some rhizomes grow upward in the soil, then form a bulb-like structure from which new shoots and roots grow, and from the new roots, new rhizomes grow. Other rhizomes grow horizontally or downward, and form dark reddish-brown tubers or chains of tubers.

Economic importance: *Cyperus rotundus* L. (Cyperaceae) is a medicinal herb traditionally used to treat various clinical conditions at home such as diarrhea, diabetes, pyresis, inflammation, malaria, and stomach and bowel disorders.

PTERIDOPHYTES

PTERIDACEAE

58. *Pityrogramma calomelanos* (Fern)

Family Pteridaceae

Common name: Silver Fern, Silverback Fern

Description: Terrestrial herb with erect, densely scaly rhizome 4 x 2 cm. Scales 2-6 x 0.2-0.5 mm, brownish, linear, entire. Fronds 80-100 x 20-22 cm, bipinnate; stipe 40-50 cm, dark-pinkish brown, polished; lamina triangular in outline; pinnae 11 x 2.5 cm, lanceolate, acuminate in outline, pinnules



1.5 x 0.7 cm, rhomboidal to lanceolate, acute, lobed to serrate, pinnae and pinnules progressively reduced to apex, rachis and costa grooved above, raised below; lower surface of pinnules white crusted. Sori acrostichoid. Sporangial capsule 275-312.5 x 250 μ m, globose, stalk 250 μ m long. Spores 50 x 50 μ m, triangular in outline, yellowish with pinkish thickenings.

Economic importance: In some countries, a decoction of the leaves of *P. calomelanos*, with the roots of *Cynodon dactylon* (L.) Pers. and styles of *Zea mays* L., is considered an effective remedy for kidney trouble. A decoction of the roots of *P. calomelanos* is drunk to treat dysentery. To cure malaria, the leaves are pounded and rubbed on the back and placed under a sleeping mat.

59. *Pteris quadriaurita* (Fern)

Family: Pteridaceae



Common name: striped brake

Description: Terrestrial herb with erect rhizome 2 x 2.5 cm. Scales 4-4.5 x 0.2-0.5 mm, linear acuminate, dark brownish to black along the middle, pale brownish, translucent, fimbriate along margins. Fronds 80-110 x 25 cm, simply pinnate; stipe 30-35 cm long, scaly beneath, glabrous, polished above, greyish; pinnae 15 x 4 cm, lanceolate, acuminate, deeply divided; basal pinnae unequally bipartite; pinnules 1.5-2.2 x 0.3-0.4 cm, lobed up to costa, oblong, rounded to acute, entire. Veins divided, prominent above and below; spinules present on the costa and costules above. Sori 1-1.5 cm long, yellowish or brown, along the basal margins except at the apex and base. Sporangial capsule 400 x 375 μ m, ellipsoid, stalk 450 μ m long. Spores 40 x 35 μ m, yellowish brown, reticulate.

Economic importance: The greatest economic value of ferns has been in horticulture, with large nurseries supplying millions of plants annually for both indoor decoration and outdoor gardens and landscaping.

LYGODIACEAE

60. *Lygodium flexuosum*

Common name: maidenhair creeper

Family: lygodiaceae

Description : Rhizomatous perennial fern, with climbing rachis up to 2.5 mm thick, slightly pubescent, subterete, flattened on one side, narrowly winged or tetragonous. Primary rachis branches 2–16 mm long. Secondary pinnae narrowly ovate to oblong or rarely palmate, 7–30 cm long, 4.5–12 cm wide, 1–2-pinnate. Stalks of the leaflets (pinnules) are shorter in length towards pinna apex. Ultimate pinnules are 1.5–10 cm long, 5–16 mm wide; sterile ones sometimes fused basally and palmately-lobed, membranous, glabrous or sparsely pubescent; base truncate; margins serrulate; veins free. Fertile pinnules similar in length or shorter than sterile ones. Sporogenous lobes 1.5–8 mm long. Spores finely verrucose.



Economic importance

L. flexuosum is used as an ornamental, being available in nurseries and on Internet websites. The stems are used in the production of different articles such as baskets, boxes, hats and bags. Some of the medicinal uses reported for *L. flexuosum* are to treat female infertility, gonorrhoea, herpes, ringworm, loss of appetite, sleeplessness, chills, night sweats

CONCLUSION

The study was conducted for the identification and documentation of plant materials, especially common herbs and shrubs of the madampam locality. The study was based on an extensive survey and field observation. We found more than 60 plant materials of common herbs and shrubs. The collected materials were identified taxonomically with the help of the literature and online resources. Then each identified plant material is classified based on the Family they belong. The medicinal and economic importance of each plant is analyzed . The documentation was made by creating a herbarium booklet for the future study of plants.

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CONCLUSION

