# STUDY ON SOME MEDICINAL PLANTS GROWN IN TAUNGGOKE DEGREE COLLEGE CAMPUS

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## ABSTRACT

In this paper, some medicinal plants grown in Taunggoke Degree College Campus were studied and recorded with color photographs. A total of 10 species belong to 10 genera of 9 families were collected, identified and described with Family, Scientific Name, Myanmar Name, English Name, Flowering Period, Morphological Characters, Part Used and Literature Used.

**Key words**: Medicinal plants, morphological characters, part used, identified

## INTRODUCTION

The study area. Taunggoke Degree College Campus is situated between 18.52'25.577"N and 18.52'56.165"N latitude and between 94. 13'19.817"E and 94.14'25.725"E longitude. The total studied area is 212.20 acres.

Human beings mainly depend on plants for food and also for medicine. Most of the drugs are obtained from wild plants growing in all parts of the world, especially in tropical regions (Lawrence, 1964) .

Medicinal plants are great importance for health care. They are used as raw materials for the extraction of active constituents in pure form as precursors for synthetic vitamins and steroids and as preparation for herbal and indigenous medicines. Plants are not only the major source of energy- rich food in most societies, but also an indispensable source of vitamins and other substances promoting healthy growth.

Health is the main important factor for human beings. Human search plants and their parts that could be relieved their illness from his early history to present time. Health is the level of functional and metabolic efficiency of a living organism. In human, it is the ability of individuals or communities to adapt and self- manage.

World Health Organization defined health in it's broader sense in it's 1948 constitution as a stable of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

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In 1984, World Health Organization revised definition of health defined as‘’the extent to which an individual or group is able to realize aspirations and satisfy needs, and to change or cope with the environment. Health is a resource for everyday life, not the objective of living; it is a positive concept, emphasizing social and personal resources, as well as physical capacities (World Health Organization, 2000).

Today, Myanmar Government has been giving encouragement and flourishing of the highly valued traditional medicine by helding conferences on traditional medicine yearly, showing that the best and exact period for the emergence of traditional medicine.

The aim of this paper is to study the morphological characters, to get the information about the medicinal plants, , to identify the reputed indigenous plants grown in Taunggoke Degree College Campus.

## MATERIALS AND METHODS

The specimens were collected from Taunggoke Degree College Campus during July 2017 to July 2018. The collected specimens were studied and identified in the Department of Botany, Taunggoke Degree College with the help of literature such as Hooker (1875-1885), Backer ( 1963-1968) and Dassanayake (1980-2001). The collected specimens were recorded by colored photographs while flowering. Medicinal uses of these plants were studied by the literature of Lemmens *et. al* (2003), Padua *et. al* (1999), Ministery of Health (2003), Mohamad (2002), Prajapati *et. al,* (2003), Valkenburg *et.al,* (2002) and World Health Organization (1998).

## RESULTS

**1.Scientific Name - *Catharanthus roseus* (L.) G. Don, Gen. Hist. 4:95. 1837.**

Family - Apocynaceae

Myanmar Name - Thinbaw manyo

English Name - Madagascar Periwrinkle

Flowering Period - Nearly throughout the year

Morphological Characters

Annual or perennial procumbent herbs or undershrubs with watery juice; stems and branches reddish brown, glabrous. Leaves simple, opposite and decussate, exstipulate; blades elliptic- obovate, cuneate at the base, entire along the margin, rounded or acute at the apex, glabrous on both surfaces. Inflorescences axillary solitary or geminate cymes. Flowers bisexual, actinomorphic, pentamerous, hypogynous, purple, pink or white. Calyx 5-lobed..Corolla 5-lobed, salverform. Stamens 5, free, included ; filaments short; anthers dithecous, basifixed. Ovaries two, superior, oblongoid, two large glands of disk present, unilocular, many ovules in the locule on the parietal placentae; style filiform; stigma annulate, viscid. Fruits follicular, pairwise. Seeds many.

Part Used - The whole plant, roots and leaves

Literature Used - Malays are believed to have taken a decoction of this plant to treat diabetes, hypertension, dysentery, enteritis, menstrual pains, insomnia and cancer **.**The roots and leaves are useful in hypertension, purified alkaloid, leukaemia and the roots are used to induce cerebrovascular dilatation and for hypertension ( Mohamad, 2002 & Prajapati *et. al*, 2003 ).

Specimen Examined - Taunggoke Township, Taunggoke Degree College Campus, Khin Moe Moe Khine and Than Than Htet, July 19, 2017, Coll. No. 2

**2. Scientific Name - *Eclipta prostrata* L., Mant. 2:286. 1771.**

Family - Asteraceae

Myanmar Name - Kyeik hman

English Name - Trailing Eclipta

Flowering Period - May to October

Morphological Characters

Perennial erect herbs; stem solid,reddish, appressed pilose. Leaves simple, opposite and decussate, exstipulate; blades elliptic-lanceolate, obtuse at the base, slightly undulate along the margin, acute at the apex,appressed pubescent on both surfaces; sessile. Inflorescences terminal solitary heterogamous head.. Involucre campanulate, involucral bracts two series,elliptic, appressed pubescent; receptacle flat; paleaceous linear,bristle-like. Ray florets numerous,white, zygomorphic;ligules 2-lobed, white; tube short, hairy at the apex. Disc florets 10-15, white. Stamens 4, epipetalous, inserted; filaments filiform; anthers syngenesious; pappus 2, scaly; style filiform; stylar arms clavate. Fruits achenes, pubescent at the tip.

Part Used - The whole plant

Literature Used - The plant is used in anti-inflammatory, carminative, diuretic, digestive, hypertension, jaundice, good for blackening and strengthening of the hair (Prajapati *et al*. 2003).

Specimen Examined – Taunggoke Degree College Campus, Khin Moe Moe Khine and Than Than Htet, July 20, 2017, Coll. No. 12.

**3. Scientific Name - *Eupatorium odoratum* L., Syst. 10: 1205. 1759.**

Family - Asteraceae

Myanmar Name - Bezat

English Name - Bitter bush

Flowering Period - November to March

Morphological Characters

Perennial shrubs; stems solid, cylindrical, pubescent. Leaves simple, opposite and decussate, exstipulate; blades deltoid, cuneate at the base, dentate along the margin, hairy on both surfaces, gland dotted; petioles slender, pubescent. Inflorescences terminal or axillary homogamous , disciform; involucral bracts 3 to 5 seriate, scarious with green striate, glabrous; receptacle convex, naked. Disc florets 20-35, bisexual; pappus 1-seriate, filiform, unequal in length, grayish white,

spinulose.Corolla funne-shaped, with 5 dentate lobed. Stamens 5, exserted; filaments filiform; anther dithecous, oblong, obtuse at the base, glabrous. Carpels 2, fused; ovary inferior, unilocular, elliptic- lanceolate, 5-angled,pubescent; style cylindrical, glabrous; stylar arms 2, linear, obtuse at the apex. Fruits achene5-angled, elliptic-lanceolate, brown, crowned with the pappus hairs.

Part Used - Leaves

Literature Used - In Indonesia, the young leaves are crushed and the resulting liquid can be used to treat skin wounds, used as tea to break up the common cold and for intermittent fever and influenza(Mohamad, 2002).

Specimen Examined - Taunggoke Degree College, Khin Moe Moe Khine and Than Than Htet, February 10, 2018, Coll. No. 30.

**4.Scientific Name - *Heliotropium indicum* L., Sp.Pl.130. 1753.**

Family - Boraginaceae

Myanmar Name - Sin hna maung gyi

English Name - Indian heliotrope

Flowering Period - April to September

Morphological Characters

Annual, erect or diffuse herbs; stems terete, fleshy, hirsute. Leaves simple, alternate at the upper and opposite at the lower portion, exstipulate ; petioles winged, indistinct; blades ovate,rounded to obtuse and long attenuate at the base, undulate along the margin, acute at theapex, sparsely pubescent on both surfaces.Inflorescences terminal or axillary scorpoid cymes. Flowers bisexual, actinomorphic, pentamerouswhite or pale purple. orange at the throat of corolla tube, Calyx 5-lobed, campanulate. Corolla 5-lobed, salverform;.. Stamens 5, free, included, adnate above the base of corolla tube; filaments short; anthers dithecous,oblong. Carpels 2, fused, ovary superior, bilocular, 4-ovules in each locule on the axile placentat; style terminal stout; stigma conical. Fruits deeply 4-lobed, angular.

Part Used - The whole plant

Literature Used -The whole plant is used as oliguria, haematuriaas anti-inflammatoryagent and oedemadue to renal disease (Mohamad,2002).

Specimen Examined - Taunggoke Degree College Campus, Khin Moe Moe Khine and San San Aye, May 28,2018, Coll. No. 20.

**5. Scientific Name - *Momordica charantia* L., Sp. Pl. 1009. 1753.**

Family - Cucurbitaceae

Myanmar Name - Kyet hin khar

English Name - Bitter gourd; Carilla fruit

Flowering Period - July to December

Morphological Characters

Annual, monoecious, tendrillar climbing herbs; stems and branches obtusely 4-to5 angled, pubescent. Leaves simple, alternate, exstipulate; blades

orbicular, deeply 5-7 lobed, cordate at the base, coarsely dentate along the margin, acute at the apex, glabrous or sparsely pubescent. Inflorescences axillary and solitary in pistillate, subraceme in staminate flowers. Flowers unisexual, actinomorphic, hypogynous, yellow.Calyx 5-lobed,campanulate.Corolla 5-lobed, rotate- campanulate, Stamens 3, free, included; filaments short; anthers dithecous, one of them monothecous, conduplicate; stamonodes 3 to 5, scale-like, inside the calyx tube, absent in pistillate flowers. Ovary inferior, muricate, unilocular, many ovules in the locule on the parietal placentae; style slender, thickened; stigmas 3, pistillode absent in staminate flowers. Fruits oblong- fusiform, longitudinal ribbed, tubercles between ridges. Seeds many.

Part Used - Fruits

Literature Used - In Philippines, the fruits are macerated in oil, is used as a vulnerary. It is used to treat fever, leprosy, malignant ulcers, hypertension, dysentery and diabetes. In Pacific, the fruits are used to treat leprosy, malignant ulcers, stomach worms, fever, hypertension, dysentery and diabetes (Mohamad, 2002).

Specimen Examined - Taunggoke Degree College Campus, Khin Moe Moe Khine and Than Than Htet, September 7, 2017, Coll.No. 15.

**6. Scientific Name - *Moringa olerifera* Lam., Enc. 1:398. 1785.**

Family - Moringaceae

Myanmar Name - Dan da lun

English Name - Horse Radish; Drum stick

Flowering Period - Throughout the year

Morphological Characters

Perennial, small trees; stems and branches terete, glabrous. Leaves tripinnately compound, alternate, exstipulate; leaflets elliptic or ovate. sparsely hairy on both surfaces. Inflorescences axillary or terminal panicles. Flowers bisexual, zygomorphic, creamy- white, fragrant. Calyx 5- partite, petaloid.. Petals 5, free, linear-spathulate, creamy white. Stamens 10, in two whorls, inserted on the edge of the disk; filaments declinate; anthers dithecous, dorsifixed. Ovary superior, slender, stipitate, trilocular, many ovules in each locule on the parietal placentae; style slender; stigma perforated. Fruits cylindrical, longitudinally ribbed, pendulous,. Seeds trigonous, winged at the angle.

Part Used - Leaves, fruits and roots

Literature Used - The leaves and fruits are used as soup for daily vegetables to relieve hypertension . The leaves are anti-inflamatory, anodyne, diuretic, anthelmintic and ophthalmic . The roots are bitter and used as digestive, carminative, anthelmintic, diuretic, cardiac stimulant and asthma ( Prajapati *et. al*, 2003 ).

Specimen Examined - Taunggoke Degree College Campus, Khin Moe Moe Khine and Than Than Htet, August 8, 2017. Coll. No. 13

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**7. Scientific Name - *Musa sapientum* var. hpi gyan L. Syst. Nat. Ed. 2:1303. 1759.**

Family - Musaceae
Myanmar Name - Hpi gyan nget pyaw
English Name - Apple plantain
Flowering Period - Throughout the year
Morphological Characters

Perennial, rhizomatous tree-like herbs; aerial pseudo stem is composed of long stiff leafsheaths rolled round each other. Leaves simple, alternate, exstipulate; blades elliptic, leafsheath at the base, entire along the margin, obtuse at the apex, glabrous on both surfaces; petioles long and thick. Inflorescences terminal spikes or panicle covered with large violet spathe. Flowers bisexual or unisexual, zygomorphic, trimerous, epigynous, creamy white. Tepals 6, in two of 3 each, gamophyllous, only one posterior tepal of the inner whorl is free and boat-shaped, the rest tepal are united forming a tube, creamy white. Stamens 6 ( 5 fertile and 1 staminode) , in two whorls of 3 each; filaments slender; anthers dithecous, basifixed. Ovary inferior, trilocular, many ovules in each locule on the axile placentae ; style filiform; stigma 3- branched. Fruits berry.

Part Used - Fruits
Literature Used - The fruits are prescribed in China medicine to treat constipation, fever, dysphagia, haemorrhoid, hypertension, swelling and abscesses (Mohamad, 2002 ).
Specimen Examined -Taunggoke Degree College Campus, Khin Moe Moe Khine and Than Than Htet, August 25, 2017, Coll. No. 14.

**8. Scientific Name - *Phyllanthus amarus* Schum., Kongl. Dansbe Vidensk. Selsk. Skrir.4: 195. 1829.**

Family - Phyllanthaceae
Myanmar Name - Myae zi phyu
English Name - Sleeping plant
Flowering Period - Almost throughout the year
Morphological Characters

Annual, monoecious herbs; stems and branches slender, glabrous. Leaves simple, alternate, stipulate; blades oblong or suborbicular, rounded at the base, entire along the margin, obtuse at the apex. Inflorescences axillary, clustered cymes of 2 to 3 staminate and solitary pistillate flower. Flowers unisexual, actinomorphic, apetalous; pedicels short in staminate flower, long in pistillate flower. Calyx 5- partite, persistent.. Disk glandular. Stamens 3, free,; filaments very short; anthers dithecous, basifixed. Ovary superior, ovoid, 3-lobed, trilocular, one ovule in each locule on the axile placentae; styles 3, basally connate; stigmas 3,each bifid**,** recurved. Fruits drupaceous, globoid, depressed. Seeds trigonous.

Part Used - Leaves and stems
Literature Used - A decoction of leaves and stems are used to cure jaundice,

hypertension, asthma, liver disease, carminative, itchness, and digestive (Padua *et. al*, 1999 ).

Specimen Examined - Taunggoke Degree College Campus, Khin Moe Moe Khine and Than Than Htet, August 15, 2017, Coll. No.19.

**9.Scientific Name - *Morinda citrifolia* L., Sp. Pl. 176. 1753.**

Family - Rubiaceae

Myanmar Name - Ye yo

English Name - Indian mulberry

Flowering Period - Throughout the year

Morphological Characters

Perennial, small trees; stems and branches terete, glabrous. Leaves simple, opposite and decussate, stipulate; blades elliptic or obovate, attenuate at the base, entire along the margin, acuminate at the apex, glabrous on both surfaces. Inflorescences terminal or axillary globose heads. Flowers bisexual, actinomorphic, white, fragrant. Calyx 5-teeth. green. Corolla 5-lobed, rotate. Stamens 5, free, exserted; filaments filiform; anthers dithecous, dorsifixed. Ovary inferior, ovoid, bilocular, one or more ovules in each locule on the axile placentae; style simple; stigma bifid. Fruit berry, strongly odorous. Seeds obovoid or globoid.

Part Used - Leaves ,fruits, roots and barks

Literature Used - The leaves are fried with meat or salad to decrease hypertension. The ripened fruits mixed with sugar are edible to cure hypertension. In Indonesia, the baked fruits are given in dysentery and asthma. The roots and bark have a beneficial effect in hypertension, lumbago and rheumatism. An infusion of the root is used in treating urinary disorder and young fruits are used to treat high blood pressure (Mohamad, 2002).

Specimen Examined - Taunggoke Degree College Campus, Khin Moe Moe Khine and group, July 19, 2017, Coll. No. 4.

**10. Scientific Name - *Hedychium coronarium* Koen. in Retz. Obs. Bot. 3: 73. 1783.**

Family - Zingiberaceae

Myanmar Name - Ngwe pan

English Name - White butterfly ginger

Flowering Period - July to November

Morphological Characters

Perennial, rhizomatous plants; aerial stem terete, glabrous. Leaves simple, alternate, distichous, exstipulate; blades elliptic - oblong or lanceolate, thick and coriaceous, cuneate at the base, more or less undulate along the margin, acuminate at the apex, glabrous on both surfaces. Inflorescences terminal spike. Flowers bisexual, zygomorphic, white, sessile; bracts numerous. Calyx tubular, greenish white, split down on one side, glabrous.Corolla infundibuliform, white.. Fertile stamen erect, filamenst slender, flattened; anthers ellipsoid; basal staminodes

linear-oblong,. Ovary oblongoid, trilocular, many ovules in each locule on the axile placentae; style long; stigma capitate to subglobiod.

Part Used - Anthers, rhizomes, flowers

Literature Used - In Brazil, the aromatic flowers and anthers are used for diuretic, hypertension, antidiabetes, and antisyphilic. The rhizomes are stomachic, carminative, stimulant and tonic (Valkenburg & Bunyapraphatsara, 2002 ).

Specien Examined - Taunggoke Degree College Campus, Khin Moe Moe Khine and Than Than Htet, October 5, 2017, Coll. No, 27.

## DISCUSSION AND CONCLUSION

Medicinal plants have played an important role in traditional medicine since ancient time and the knowledgement of the uses of plants or medicine have been handed down orally from generation to generation.

An ancient time, men studied the available plant material, particularly as a source of food and distinguished between poisonous and non-poisoous plants. While many plants have been used for medicinal purposes, comparatively few of them are cultivated. Most of the plants used for long time in traditional medicines.

A total of 10 species belong to 10 genera of 9 families were recorded to be useful in the treatment of diseases. Most plants are used as decoction alone or with other ingredients. Different parts of the plant such as leaves, flowers, fruits, roots, barks, rhizomes and anthers are used as medicine.

The whole plant of Eclipta prostrate L. is used to anti-inflammatory, jaundice, good forblackening and strengthening hairsThe leaves of *Moringa olifera* Lamk., *Catharanthus roseus* (L.) G. Don, and *Morinda citr*ifolia L., are used for curing hypertension. The leaves of Eupatorium odoratum L.are used for skin wounds, common cold, fever and influenza.

The flowers of *Hedychium coronarium* Koen. are aromatic and used for blood purifying. The decoction of leaves and stems of *Phyllanthus amarus* Schum. are used to treat high blood pressure .

The fruits of *Momordica charantia* L. are used to treat hypertension, liver disease and asthma. The fruit of *Musa sapientum* var. hpi gyan L. is used for fever, hypertension and haemorrhoid. The fruits of *Moringa olerifera* Lamk.,and *Morinda citrifolia* L. are used for curing hypertension and urinary disorder.

The roots of *Morinda citrifolia* L., *Catharanthus roseus*(L.)G.Don. are used for leukaemia and cerebrovascular dilation. The bark of *Morinda citrifolia* L. are used for hypertension.. The anthers and rhizomes of *Hedychium coronarium* Koen. are used for curing hypertension.

It is expected that this results will provide useful information and their effective utilization in the treatment of traditional medicines. It is hoped that this results will partially inform and record the medicinal plants grown in Taunggoke Degree College Campus.

A

B

C

D

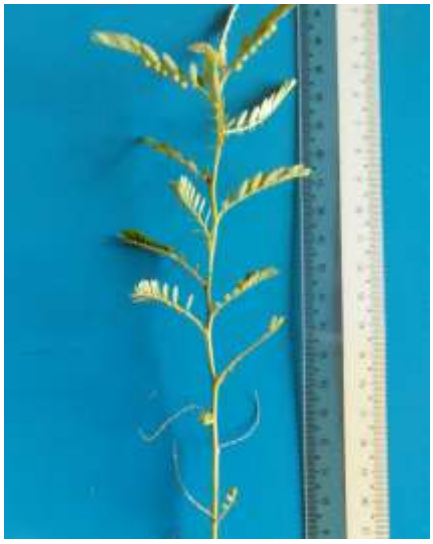
E

Figure 1. A. *Catharanthus roseus* (L.) G.Don. D. *Heliotropium indicum* L.
B. *Eclipta prostrata* L. E. *Momordica charantia* L.
C. *Eupatorium odoratum* L.

A

B

C



D

E

Figure 2. A. *Moringa olerifera* Lam
B. *Musa sapientum* var. hpi gyan L.
C. *Morinda citrifolia* L.
D. *Phyllanthus amarus* Schum.
E. *Hedychium coronarium* Koen.

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