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## Five Selected Wild Medicinal Plants and Theirs' Uses

Mya Mya Win<sup>1</sup>, Moet Moet Khine<sup>2</sup>, Win Win Shwe<sup>3</sup>

### ABSTRACT

The study on five genera of growing wild medicinal herbs plants were collected from Budalin Township. Budalin township is located in Sagaing Region, it lies at the point of 22° 22' N and 95° 08' E. The five medicinal wild herbs plants were collected *Amaranthus spinosus* L., (Hin-nu-nwe-su-bauk), *Boerhavia diffusa* L (Payan-nawa), *Clitoria ternatea* L (Aung-me-nyo), *Euphorbia hirta* L (Kywe-kyaung-min-sae), and *Leucascephalotes* (Roth.) Spreng. L (Pinku-hteik-peik). The morphological characters and medicinal uses of these plants were studied by interview methods of local traditional practitioners. The habits of each plants were recorded with the color photographs. Accordingly Family, Scientific Name, English Name, Myanmar Name, parts used and traditional uses were mentioned. This paper are encouraged for further studies by these traditional medicines.

Keywords: Wild medicinal herbs; morphological characters, local traditional practitioners

### INTRODUCTION

Most of the traditional medicines are manufactured by using the flowering plants. The plants parts and raw materials are easily collected and preserved. Moreover, the prices of these medicines are cheaper than western medicines. In the present days, the traditional medicines are produced by using modern techniques such as making capsules and tablets. These medicines are selling widely in our country.

Medicinal plants and plant compound medicines or folk medicines are widely used in traditional cultures all over the world. They are becoming increasingly popular in modern society as natural alternatives to synthetic chemicals. People who use traditional remedies may not understand the scientific rationale behind their medicines, but they know from personal experience that some medicinal plants can be highly effective if used at therapeutic doses (Ben-Erik van Wyk & Michael Wink 2004).

Myanmar traditional medicine originates from those of traditional medicine system of neighboring countries. All Asian countries, there is a resurgence of interest in traditional medicine and many countries now promote research into medicinal plants as potential sources of new remedies. Nowadays, many people are widely practiced by traditional medicine and alternate to modern medicine (Christophe Wiart 2002).

### MATERIALS AND METHODS

Specimens were collected from Budalin Township, during June to August, 2015. The collected specimens were preserved for the morphological studies and identification were conducted by Hooker, 1879, Hundley, H.G & Chit Ko Ko (1961), (Kerss *et al.* 2003), Kyaw Soe & Tin Myo Ngwe, 2002. Flower color, shape and part used were recorded in the field notes and captured by camera. The traditional uses of these plants were taken by various interview methods from Sa-ya-ma-gyi Daw Khin Hnin Wai (Tasa-0693) and Sa-ya-gyi U Thein Hlaing (Tasa-1656). The literature and traditional uses of these plants were reported.

### STUDY AREA

#### Location

Budalin Township is one of the eight townships in Monywa District. It is located in the northern part of the Dry Zone. It lies between the latitude 22°15'N and 22°45'N and longitude 94°55'E and 95°18'E. Located on the east bank of Chindwin River, Budalin is sharing border with Dabayin Township in the north, Ayadaw Township in the east, Monywa Township in the south and Kani Townships in the west.

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## Topography

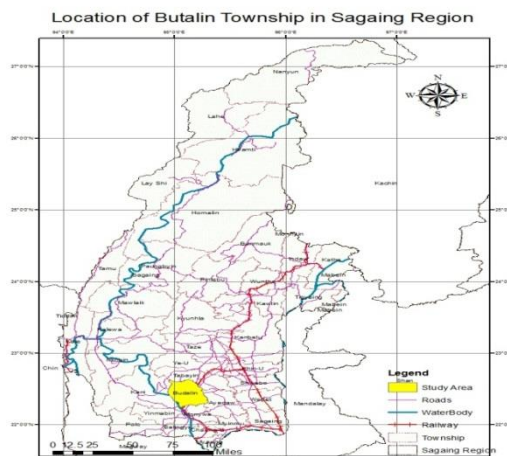
Budalin called Chindwin Valley Basin is also situated at an altitude of 1449 feet at the highest area in east and west part of this region and 300-400 feet at the lowest area. The township has an area of 265,243 square miles. and it is formed with three wards and 188 villages of 54 village-tracts. Chindwin River flows from west to west-south of this region as the useful for main water transport courses.

## Climate

The study area is located within the dry zone. The total annual rainfall has about 550 mm. The mean annual temperature of this area is the highest mean temperature of 41°C in May and the lowest mean temperature of 13°C is in January. According to the Köppen classification, this zone receives Tropical Savanna type of climate (Aw). This area is engaged in the agriculture land and reserved forests are also found along Chindwin River.

## Soil

Yellow brown forest soils develop under the tropical mixed deciduous forest in the highest region of Budalin. Yellow Brown dry and sandy soils are suitable for Ya cultivation and can be utilized for forests in the mountainous region. Meadow alluvial soil can be found in the flood plains of Chindwin Basin. It has the neutral soil reaction and is rich in available plant nutrients. The meadow and meadow alluvial soil widely occurs in different parts in river plains and valleys. They are most suitable for edible oil crops and pulses cultivation.



Source: Department of Geography, Yangon University of Distance Education (2019)

## RESULTS

### 1. *Amaranthus spinosus* L. Sp. Pl. 991. 1753.

English Name	- Prickly amaranth
Myanmar Name	- Hin-nu-nwe-su-bauk
Family	- Amaranthaceae
Part used	- Root, leaves, flowers, fruits and seeds

An annual herb, erect; stems hard, grooved, spines sharp, straight. Leaves alternate, simple, exstipulate; petioles long, equaling the laminae or shorter, laminae ovate or lanceolate or oblong, glabrous. Inflorescences axillary cymose, dense and clustered to terminal and axillary spikes, dense or interrupted; bracts scarious. Flowers small, bracteoles linear, bristle-pointed, sessile, unisexual, monoecious, pentamerous, hypogynous. Staminate flower perianthuniseriate, sepals 5, ovate, acuminate, bristle-pointed. Stamens 5, apposite the sepals; filaments filiform; anthers ditheous, dehiscence longitudinal. Pistillate flower, perianthuniseriate; sepals 5, oblong obtuse. Bicarpellary, syncarpous, ovary ovoid, compressed, unilocular, one ovule in each locule on the basal placentae; style 2, short; stigmas 2. Fruit capsular, ovoid. Seeds endospermic.

### Literature Uses.

*Amaranthus spinosus* L is used as muscle spasticity, dermatitis, haematemesis, menorrhagia, leucorrhoea, heals boils and sores, dysuria, gonorrhoea, urolithiasis, hepatitis, haemorrhoids, stops epistaxis, antidote for spider toxin .

In Cambodia, the roots are used to treat rheumatism. In Indonesia, the roots are used to stimulate menstruation. In Philippines, the crushed leaves are applied to eczema. In India, the roots are specific for gonorrhoea, menorrhagia and eczema (Christophe Wiart 2000).

### Traditional uses

The ash of the whole plant mixed with coconut oil is used for itching, eczema and scabies. The root, stem, leaves, flower and fruit are used for urine infection and hydronephrosis. The juice of the root is used in diarrhea and dysentery.



Closed up view of Habit of *Amaranthus spinosus* L.



Closed up view of Inflorescence of *Amaranthus spinosus* L.

## 2. *Boerhavia diffusa* L.

English Name	Spreading hogweed
Myanmar Name	Payan-nawa
Family	Nyctaginaceae
Part used	Fresh plant, roots, stem and, leaves

Annual decumbent or ascending herbs; stems and branches tumid at the node, terete. Leaves simple, opposite, exstipulate, petiolate; leaf blade ovate, entire with curved hairs along the margin. Inflorescences axillary cymes with 5- to 10-flowers. Flowers purple, apopetalous, bracteate, pedicellate. Calyx 5, plicate lobes, campanulate, constricted at the base, tube green. Stamens 3, free; filaments short, purple; anthers ditheous, basifixed. Ovary inferior, glandular-hairy, unilocular with solitary basal ovule; style filiform; stigma thickened. Anthocarp obovoid, 5-ribbed, vicidly pubescent, 1-seeded. Seed oblogoid.

### Literature Uses

The *Boerhavia diffusa* L was cured the diuretic; edema; ascites; liver complaints; jaundice; chronic ophthalmia; laxative; diaphoretic; scanty urine; enlargement of the liver and spleen. Leaves, stems and roots are used for snake bites.

### Traditional Uses

The roots are used as diuretic. The powder of dry stem is mixed with honey and used for tonic. The powder of dry roots is used for insomnia.



Closed up view of Habit of *Boerhavia diffusa* L.



Closed up view of Inflorescence of *Boerhavia diffusa* L.

### 3. *Clitoria ternatea* L.

English Name	Butterfly pea
Myanmar Name	Aung-me-nyo
Family	Fabaceae
Parts Used	Roots, seeds, leaves and flowers

Annual, scandent or trailing herbs. Leaves unipinnately compound, imparipinnate, alternate, petiolate, stipules subulate, persistent, pubescent; leaflets 5 to 7, entire and shortly ciliate along the margin. Inflorescences axillary solitary cymes; peduncles slightly longer than the pedicels. Flowers bright blue, bracteates, bracteolate, persistent. Calyx tubular-campanulate, 5-lobed; lobes lanceolate, subequal, persistent. Corolla papilionaceous, much-exserted; standard broadly oval-ovate; wings larger than the keel, long-clawed; keel usually smallest. Stamens 10, diadelphous, free parts of filaments filiform; anthers ditheous, uniform. Ovary linear, shortly stipitate, unilocular with few ovules in the locule on the marginal placentae; style filiform, curved; stigma globose, hairy. Pods dehiscent. Seeds compressed, truncate at both ends.

#### Literature Uses

*Clitoria ternatea* L was utilized by hemicrania; gonorrhoea; irritation of the bladder and urethra; tonic; asthma; carminative; lung disorders; tympanites; insanity; whitlow; paronychia; laxative, diuretic; hemicrania and hectic fever.

#### Traditional Uses

The roots are very valuable for tonic. The infusion of the leaves is wash for ulcers. The seeds have powerful cathartic action. Some local people used them as vegetable.



Closed up view of Habit of *Clitoria ternatea* L.



Closed up view of Inflorescence of *Clitoria ternatea* L.

### 4. *Euphorbia hirta* L.

English Name	Milk-weed
Myanmar Name	Kywe-kyauung-min-sae
Family	Euphorbiaceae
Parts Used	The whole plant and latex

Annual, monoecious, herbs with milky juice. Leaves simple, opposite and distichous, stipulate, petiolate, pubescent; leaf-blade rhombic-ovate to rhombic-lanceolate, serrate along the margin, pubescent on both surfaces. Cyathia forming an axillary or terminal, dense, fascicled cyme on a short pubescent stalk with 2 leafy bracts at every node. Flowers unisexual, the pistillate one surrounded by the numerous staminate flowers; each flower with articulate pedicels and minute scales at the base, apetalous. Stamen one, anther ditheous, yellow. Ovary ovoid, stipitate, trilobular, with one ovule in each locule on the axile placenta; styles 3, slightly connate at the base; stigmas 3, bifid. Capsules trigonous. Seed sub-quadrangular, oblongoid.

#### Literature Uses

The habit was used with ulcer, dysentery, healing, eye-related diseases, cough, asthma, gonorrhoea, phlegmon, vomiting, conjunctivitis, corneal ulcers, warts, chronic catarrh and chest complaints.



### Traditional Uses

Juice of the plant is very useful in dysentery and colds. The roots are used for nursing mothers to increase lactation. Latex of the plant is used for warts. The leaves and flowers are boiled with water and used as salad for treatment of dysentery



Closed up view of Habit of  
*Euphorbia hirta* L.



Closed up view of Inflorescence  
of *Euphorbia hirta* L.

### 5. *Leucasephalotes* (Roth.) Spreng.

English Name	Unknown
Myanmar Name	Pinku-hteik-peik
Family	Lamiaceae
Part used	The whole plant

Annual erect herbs. Leaves simple, opposite and decussate, exstipulate, petolate, crenate-serrate along the margin. Inflorescences terminal, globose, verticillaster, with many flowers. Flower white, sessile, bisexual, zygomorphic, tetramerous. Calyx tubular, 10-toothed, persistent; tubes slightly curved, the mouth oblique, villous. Corolla white, lower lip 3-lobed, longer than upper, upper lip erect, bearded. Stamens 4, didynamous, epipetalous; filaments filiform, with flatten base red; anthers dithecous. Ovary ovoid, tetralocular, 4 erect ovules on the basal placenta; style gynobasic, filiform; stigma bifid, disc 4-lobed. Dry nutlet, obovoid enclosed by persistent calyx. Seed oblongoid.

### Literature Uses

The treatment of *Leucasephalotes* (Roth.) Spreng was cathartic; indigestion; expectorant; jaundice; oedema; biliousness; polyuria; pyrexia; cough; asthma; urinary tract infection; pruritis; aspermia; rheumatism; antidote for snake bite; malaria; antipyretic.

### Traditional Uses

The leaves are used as antidote for scorpion bite. The juice of fresh plants is used to cure constipation.



Closed up of Habit of  
*Leucasephalotes* (Roth.) Spreng



Closed up view of Inflorescence of  
*Leucasephalotes* (Roth.) Spreng

### DISCUSSION AND CONCLUSION

The utilization of traditional medicine is growing day by day not only in Myanmar but also in every part of the world including both developing and developed countries.

In this paper, the 5 species of *Amaranthus spinosus* L, *Boerhavia diffusa* L, *Clitoria ternatea* L, *Euphorbia hirta* L, and *Leucasephalotes* (Roth.) Spreng. They grow in wild plants and were studied for their traditional uses.

*Amaranthus spinosus* L is an annual herb, erect; stems hard, grooved, spines sharp, straight. The ash of the whole plant mixed with coconut oil is used for itching. The root is to promote the menstrual flow for women. Leaves are used as an antidote for scorpion-stings in traditional uses. *Boerhavia diffusa* L is an annual ascending herb. Flowers purple, apopetalous, bracteate, pedicellate. In Myanmar Traditional medicine, it is famous for tonic plant. The root is useful in the treatment of diseases of the heart and kidneys. The root is used in the form of a paste; a poultice made of the roots by boiling is applied to cure ulcers and abscesses.

*Clitoriater natea* L is Annual, scandent or trailing herbs. Leaves unipinnately compound. Some local people use them as vegetable. The roots are used for tonic. The leaf juice with common salt is applied as a warm dressing for relief of earache and swollen glands around the ear. The infusion of root bark is useful for gonorrhoea and irritation of the bladder and urethra. Additionally, the flower and the whole plants are used as greentea, shampoo and soap. This is popular among Myanmar people at present. *Euphorbia hirta* L is annual, monoecious, herbs with milky juice. Leaves simple, opposite and distichous. It is also known as asthma plant. The juice of the plants is very useful in dysentery. The plants are used for the treatment of diarrhoea. In traditional Indian medicinal systems, they are also used in the treatment of asthma. *Leucasce phalotes* (Roth.) Spreng is an annual erect herb Annual erect herbs. Leaves simple. Stigma bifid, disc 4-lobed. Dry nutlet, obovoid enclosed by persistent calyx. Seed oblongoid. The plants are grown in field and road side. The leaves are used for cough, dysentery, asthma and oedema and paralysis.

Further study is necessary to expose other species of medicinal plants for gradual fulfillment in preparing the medicinal plants of Budalin Township. In conclusion, we hope that the present study will assist for local people and standardization of these traditional plants.

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## The Comparison of the Yield from Non-Grafted and Grafted of Five Plants of Family Solanaceae

Win Win Shwe<sup>1</sup>, Moet Moet Khine<sup>2</sup>, Mya Mya Win<sup>3</sup>

### ABSTRACT

The family solanaceae is one of the most important vegetable families in most regions of the world as the tropical and temperate regions. They were cultivated as grafted tomato (*Lycopersicon esculentum* Mill.) and eggplant (*Solanum melongena* L. cvs.) in field of Vegetable and Fruits Research Development Center (VFRDC), Hlegu Township, Yangon Division. In this study the four selected plants of the scions plants, three varieties of eggplants as khayay-nyo-shay, htaw-putt-khayay and khayay-padaetha and tomato as *Lycopersicon lycopersicum* L. with the stock plants (local varieties of eggplants as *Solanum melongena* L. cvs. khayay-gyut,) were grafted. The grafted plant and non-grafted plants of rootstock, and scions were cultivated with the comparison of one by one roll in the field and conducted. The microscocial studies were carried out at 21 days after grafted in the microscocial examination. The transverse section of grafted layer of stock and scion of five plants were observed that rootstock and scion were graft union successfully. The survived plants were early fruit in then non-grafted plants of rootstock and scions. The yield of total number and weight of fruits from the grafted plants were also greater than that of non-grafted plants. This paper was conducted by pilot scale production of strongly quality fruits for commercially.

**Keyword:** *Lycopersicon esculentum* Mill., *Solanum melongena* L. cvs.

### INTRODUCTION

The commercial production of horticultural plants is being attempted in the worldwide especially tropics and temperate regions. Vegetable crops are also grown for commercial production in Myanmar. The family Solanaceae (Nightshade family) consists of about 90 genera and 2,000–3,000 species. (Heywood, 1978).

Important vegetable plants in this family are eggplant (*Solanum melongena* L.), tomato (*Lycopersicon esculentum* Mill.), pepper (*Capsicum* spp.) and potato (*Solanum tuberosum* L.). Other important medicinal plants are tobacco and petunia etc. They are warm-season crops. Eggplants are produced in worldwide but to a lesser extent than other Solanaceous vegetable crops such as corn, pepper and tomato (Acquaah, 2002).

To study the morphological characters and germination test, the genus *Solanum* and *Lycopersicon* were selected from the family Solanaceae (Purseglove, 1974). The genus *Solanum* has been known that twenty four species of this genus are growing wild in Myanmar (Hundley, 1978).

The distinctive characters of *Solanum melongena* L. and *Lycopersicon esculentum* Mill. are persistent calyx, the anthers dehisced by terminal pores but lateral slit dehiscence in *Lycopersicon esculentum* Mill., oblique ovary and the fruits are pendent berries (Acquaah, 2002).

Nowadays, grafting technique is a popular technique in the production of nursery plants by using more resistant rootstocks. (Hartmann and Kester, 1983; Grzyb and Starek, 1998; Kankaya *et al.*, 1999).

In successful grafting, a complete union or graft compatibility of grafting plants depend between the stock and scion. The ability of two different plants grafted. They are produce a successful union and develop satisfactorily into one composite plant is called compatibility (Hartmann *et al.*, 1990). If the grafting is successful, formation of callus will be slowly appear during the graft union. For a successful callus formation, very tight contact of rootstock and scion is crucial (Seferoglu *et al.*, 2004). The callus is formed by a proliferation of parenchyma was tissues from both components of the graft. The callus may also produced by cells of the cambial zone and by the other living cells of the vascular region (Kuster, 1925).

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