

**The Republic of the Union of Myanmar
Ministry of Environmental Conservation and Forestry
Forest Department**



**Study on Distribution and Medicinal Uses of Some Plant Species in Natma
Taung National Park, Southern Chin State**



**Myint Myint San, Assistant Research Officer
Nway Mon Mon Aung, Range Officer
Htike San Soe, Range Officer
Yunn Mi Mi Kyaw, Research Assistant-3
Forest Research Institute**

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ချင်းပြည်နယ်၊ နတ်မတောင်အမျိုးသားဥယျာဉ်အတွင်းရှိ အပင်မျိုးစိတ်များပျံ့နှံ့ပေါက်ရောက်ပုံနှင့် ဆေးဖက်အသုံးဝင်ပုံများကိုလေ့လာခြင်း

မြင့်မြင့်စန်း၊ လက်ထောက်သုတေသနအရာရှိ
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ယွန်းမိမိကျော်၊ သုတေသနလက်ထောက်- ၃
သစ်တောသုတေသနဌာန

စာတမ်းအကျဉ်း

နတ်မတောင် အမျိုးသားဥယျာဉ်အတွင်းရှိ အမြင့်ပင်ပေမတူညီသောနေရာ(၃)နေရာမှ စုစုပေါင်း မျိုးရင်း(၄၂)မျိုး၊ မျိုးစု(၈၃)မျိုး၊ မျိုးစိတ်(၁၀၂) မျိုးတို့ကို စုဆောင်းခဲ့ပါသည်။ ၎င်းတို့အနက် မျိုးစိတ်(၇၆)မျိုးမှာ ဆေးဖက်အသုံးဝင်ကြောင်း တွေ့ရှိရပါသည်။ အများဆုံးမျိုးရင်းမှာ Asteraceae(11) ဖြစ်ပြီး အနည်းဆုံးမှာ Araceae, Alliaceae, Aristolochiaceae, Fagaceae, Geraniaceae, တို့ဖြစ်ပါသည်။ အသုံးပြုသောအပင်အစိတ်အပိုင်းများတွင် အမြစ် (၂၇)ပင်၊ အရွက်(၂၆)ပင်နှင့် တပင်လုံး(၁၉)ပင်ကို အသုံးပြုနိုင်ကြောင်းတွေ့ရှိရပါသည်။ ထို့အပြင် အပင်များတွင်လည်း ပင်ပျော့ (၆၂)%၊ ခြံပင်(၁၂)%၊ သစ်ပင်ငယ် (၇)%၊ သစ်ကပ် ပင်(၇)%၊ သစ်ပင်ကြီး(၇)% နှင့် နွယ်ပင်(၆)%တို့ကို အသုံးပြုနိုင်ကြောင်းတွေ့ ရပါသည်။ အပင်များ၏ အစိတ်အပိုင်း အသီးသီးကို အသုံးပြုရာမှ ပျောက်ကင်းနိုင်သော ရောဂါများအနက် အများဆုံးမှာ ချောင်းဆိုးရောဂါ၊ အဖျားနှင့် ဝမ်းကိုက်ရောဂါတို့ ဖြစ်ကြောင်း ကိုလေ့လာ တင်ပြထားပါသည်။

**Study on Distribution and, Medicinal Uses of Some Plant Species in Natma Taung National Park,
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Myint Myint San, Assistant Research Officer
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Forest Research Institute

Abstract

A total of 102 plant species, belonging to 83 genera and 42 families were observed in study area. Among them, 76 species have medicinal value. The largest number of medicinal species came from Asteraceae (11), which was followed by Orchidaceae (8), Fabaceae and Ranunculaceae (5) and, (3) species of, Rosaceae, Rubiaceae, Gentianaceae, Zingibraceae, (2) species of, Eriaceae, Violaceae, Scrophulariaceae, Smilacaceae, Apiaceae, Buddlejaceae, Myricaceae, each species of Dipsacaceae, Juglandaceae, Oleaceae, Symplocaceae, Plantaginaceae, Taxaceae, Proteaceae, Acanthaceae, Amaranthaceae, Araceae, Alliaceae, Aristolochiaceae, Fagaceae, and Geraniaceae, etc.

Among the parts utilized for medicinal purposes roots(27), followed by leaves (26), the whole plant(19), flowers(8), Pseudo bulb(3), Rhizome(3) tuber (2)Bark (2), Stem(2), Young root(2), others are (1) etc. etc. were utilized. Herbs dominated the study area with herbs (62)%, shrubs (12)%, small tree(7)%, Epiphyte(7)%, tree (6)%, climbers (6)%. Various parts were used for the treatments of diseases/ailments such as cough (10) Fever (9), dysentery(8), followed by (7) species of inflammatory, diarrhoea. (6) species of skin, (5) species of stomachache, tonic, ulcer, (4) species of febrifuge, diabetes, indigestion, toothache, cut& wound. Moreover, (3) species of influenza, jaundice, malaria, cholera, expectorant, headache, and rheumatism are presented.

Key Words: Plant species, Medicinal uses

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Study on Distribution and, Medicinal Uses of Some Plant Species in Natma Taung National Park, Southern Chin State

1. Introduction

In worldwide, millions of people rely on medicinal plants for primary health care, and income generation for them livelihood. The properties of medicinal plants cover a marvelous involvement in the origin and advancement of many conventional herbal therapies. Asia has a long history of medicinal plant use in primary health care arrangements. Codified systems such as traditional Chinese medicine, Ayurveda, Siddha, Unani and Tibetan medicines are known to exist from time immemorial.

Some of the Asian plant species in the wild have been utilized in modern health care system. Reserpine from the roots of *Rauwolfia serpentina* or taxel from Himalayan yew (*Taxus wallichiana*) have important pharmaceutical uses in Europe, North America and others. Due to overexploitation, some of the species in the wild are now considered as threatened / endangered and some of the nations are trying to control such action by imposing regulatory measures. Member countries of the Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES) have also established international trade controls for some Asian medicinal species.

Distribution and spread of many species is quite wide and the bioactive ingredients of medicinal value often vary under different agro-climate situations. Research efforts in many of the Asian plant species have made it possible to stabilize production base towards commercialization. (Ghoh, 2005)

Myanmar is still endowed with diverse forest resources. More than half of the country is covered with forests. Although a checklist by Kress et al. (2003) reported 11,800 species that spermatophytes, it is still far away to understand the flora of Myanmar because of the lack of specimens collected by national and international botanists throughout the country. Accordingly, the Ministry of Environmental Conservation and Forestry established the protected area systems (PAS including national parks and wildlife sanctuaries, and altogether 39 protected areas have been notified (NBSAP, 2011). Natma Taung (NMT) National Park as one of PAS and was founded in 1994 encompasses a well-preserved biota characterized by a range of forest communities and high plant species endemism (Mill, 1995).

It is very well known National park in Myanmar because of its diverse floristic composition and ample sources of habitats for wild animals as bird watching. The scenery of the park attracts people for recreation; anthropology can study the Chins' culture and trekking to Mount Victoria, provide substantial opportunities for eco-tourism development.

Moreover, the majority of protected areas in NMT, is being situated in remote areas, where local communities living in or nearby are relatively poor and highly dependent on forest resources for their livelihood (Bryant, 1994). And the local households in these regions are relatively poor due to low return from poorly productive agricultural land, limited access to markets and low social services provided. Accordingly, forest products from surrounding forest areas and nearby protected area have become major livelihood sources providing subsistence and cash income for the households (Vedeld et al., 2004).

Therefore, the sustainability of the forest resources of the NMT national park is of crucial important and the documentation of the study of plant species diversity of the park is inevitable needed.

2. Objectives

The objectives of the study are:

- To collect, identify and document the plant species as permanent specimen for herbarium
- Development of information on uses and medicinal value of plant species

3. Literature review

Plant based herbal medicines have been used for thousands of years in many parts of the world. The therapeutic use of herbal medicines is gaining considerable momentum in the world during the past decade. Plant parts of medicinal plants include -whole plant, roots, leaves, flowers, fruits, seeds, stem, bark and wood. Destructive harvest of the species in which whole plant and roots are mainly used is an ecological concern, particularly when collected from wild.

In Natma Taung National park and its surrounding areas, it is reported that there are about 2,500 species of vascular plants (Mill, 1995). The vegetation distribution pattern along altitudinal gradient is quite unique, as a wide vertical range allows tropical and sub tropical plants to grow in lower areas and temperate plants to grow in higher areas. Different flora is observed in each altitudinal range, and making Natma Taung a virtual island and separating it from surrounding

areas, which is thought to be giving rise to endemic species (Kingdon- ward. 1954, Tanaka 2005).

According to (Wood and Finn, 1902), the Chin hills were first explored ornithological by Lieutenant H. Wood, who visited Mount Victoria and nearby areas during the winter of 1901–1902. Following Wood’s initial findings, Colonel G. Rippon spent several months on Mount Victoria in 1904 collecting a large number of specimens (Robson *et al.* 1998). A German team spent six months on Mount Victoria and collected 6,000 specimens in 1937 (Stresemann and Heinrich 1940).

Out of the many mountains named as Mt. Victoria by nineteenth century Englishmen, this one NMT, in the southern Chin Hills must be the least spectacular. It is merely the highest point (just over 10,000 ft.) in a broad undulating ridge. Ascending into the pine forest of the middle slopes the Kingdon-Wards noted many ornamentals including *Lilium wallichianum*, *Hedychium gardnerianum*, three different species of *Iris* and a climbers and orchids. Above 6,500 feet sea level, mist is almost constantly present during the seven month rainy season and epiphytes become common. On the open slopes 1,000 feet above sea level of three woody plants are dominant namely *Quercus semecarpifolia*, *Pinus insularis*, and a magnificent red-flowered rhododendron related to *Rhododendron arboreum*. (www.Rhododendron.html)

From 2000 to 2013, Investigation and research in botany and pharmacy of industrial resource plants, currently identifying and analyzing the components of the 7,000 sample plants collected by the Makino Botanic Kochi has already been implemented (Fujikawa K, A. Maeda 2007). Moreover, according to reported from (Fujikawa K,et.al. 2009) they collected a dozen of species, and among them *Panax pseudoginseng* Wall. (*Araliaceae*), *Bupleurum candollei* Wall. ex DC. (*Umbelliferae*), *Gentiana sino-ornata* Balf. f. (*Gentianaceae*) and *Zingiber officinale* Roscoe (*Zingiberaceae*) were analyzed with thin layer chromatography and high performance liquid chromatography analysis. They found that Myanmar *Panax pseudoginseng* is good qualities more than other countries.

4. Materials and methods

In this study, tape, taxonomy references, herbarium specimen, compass, GPS were used for systematic botanical studies in survey. Systematic botanical studies, identification and number of plant species occurring in the established (20m x 20m) square sample plots were

conducted according to the above sea level (2250-2350), (2350- 2450), (2450-2550) m at National Park. Collections were made from August to February, 2012-2013, field observations on each plant species were made and samples of plant with high medicinal value were collected from the each level. Herbarium specimens were critically examined and identified with help of the relevant literatures (Hooker, 1897 and kress *et al.*, 2003). Ethno medicinal information was gathered from experienced persons, local healers. Voucher specimens have been deposited in herbarium of Tree Improvement & Botany Section, Forest Research Institute, Yezin.

4.1 Study area

4.1.1. Location

Natma Taung National Park is located at $21^{\circ}12' N$, $93^{\circ}35'E$, close to the border with India and Bangladesh. Three different names: Natma Taung, Mt. Victoria and Khaw nau sone, stands 3053 m above sea level, the highest mountain in the so-called Chin Hill, in Chin State, west-central Myanmar. The national park encompasses 722.6 km² of rugged and verdant mountainous terrain (Fig. 1).

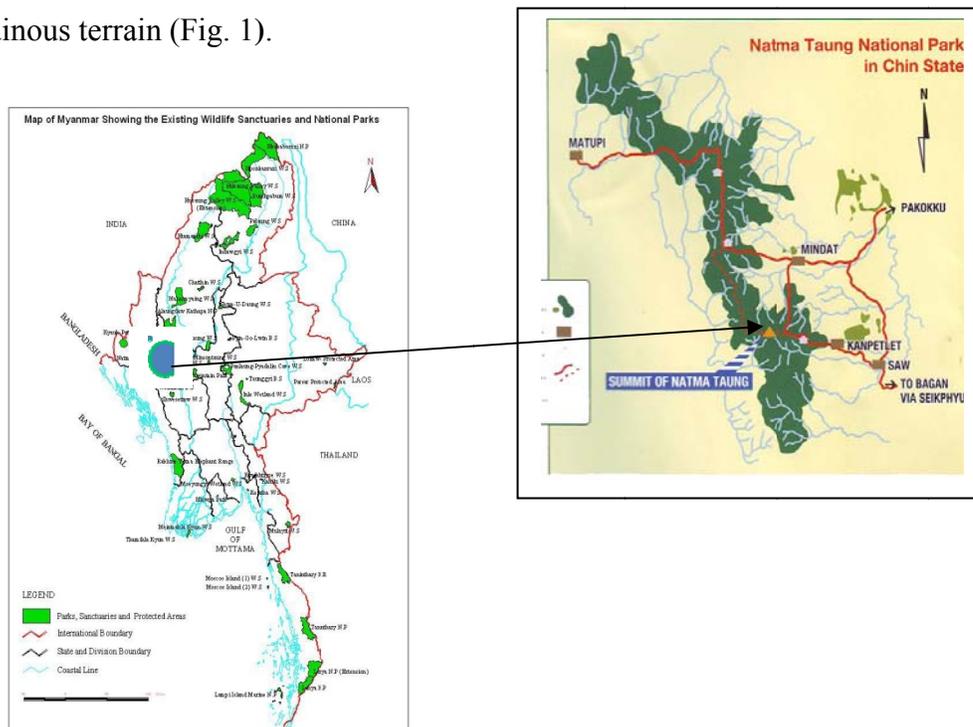


Figure1. Map of Natma Taung National Park

4.1.2 Vegetation

Natma Taung has diverse vegetation resulting from the combined effects of geography, elevation, and human activities, whose vegetation types are roughly. The ridge around the Kanpetlet Township at an altitude of 1200 m mostly, support the local human population and a secondary forest consisting mainly of fast growing trees with wind-dispersed seeds such as pine and alder.

Slopes lower than 1000 m are dominated by species of *Dipterocarpus* and *Shorea* in a so-called *Dipterocarp* forest. Extensive pines forests appear on dry ridges up to about 1800 m. Oak forests occupy moist valleys on the southern slopes further up. As the stature of the oak forest diminishes above 2700 m, the canopy thins and *Rhododendron* becomes increasingly prominent. The northern slopes up to about 2500 m are dominated by laurel and stone oak forest.

The summit of Natma Taung itself is clothed in open meadow (Fujikawa et al. 2009). The Chin state is a mountainous region, and source of water for many river streams that wet the valleys of the mountain ranges, and flow down to the plain in the east and south. They are watershed areas of Lemro River, Myitha River, Saw Chaung, Maw Chaung, Salin Chuaung, Che Chaung, Yow Chaung, Mon Chaung, etc.

4.1.3. Climatic condition

The climatic of the Kanpetlet Township in the southern part of Chin State is characterized by its mild temperatures, high rainfall and humidity. From May to November are the rainy months, with this area getting more rain than other due to the monsoon storms that come in from the Bay of Bengal. The park has three seasons: a long rainy season with an annual rainfall >1,000 mm; a cold dry season, maximum temperature varies between 4°C (December- January) and a hot dry season with temperatures up to 20°C.

5. Results & Discussions

5.1. Distribution patterns:

During the survey, the research activities were implemented in the three site base on sea level (2250-2350), (2350- 2450), (2450-2550)m in the each sample plot of the National Park

respectively. The total of belonging to 42 families, 83 genera and 102 species of trees, shrubs and herbs are found in the established sample plots. (Figure.2)

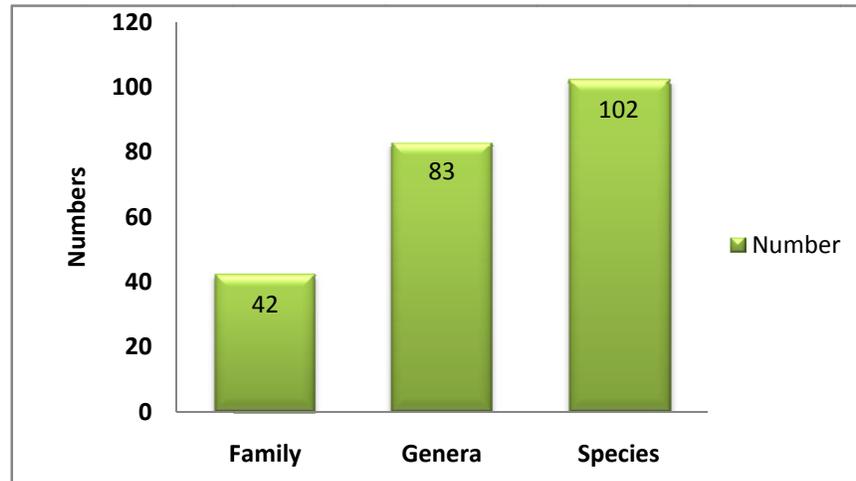


Figure2. Growth forms of plant species

Natma Taung belongs to the Sino- Himalayan region, therefore, around (2250- 2350)m, *Pinus kaysia* and *Rhododendron arboreum* Sm. are dominant trees and in grasslands around *Swertia* spp, *Satyrium nepalense*, *Roscoea australis*, *Dendrobium longicornu*, *Geranium pratense*, and other Himalayan plants can be found.

In (2350- 2450) m, *Pinus kaysia*, *Cedrus deodara*; and *Rhododendron arboreum* Sm, are dominant trees and in grasslands *Swertia* spp, *Satyrium nepalense*, *Allium* species, *Bistort* spp, *Agapetes moorei*, some epiphyte and ground orchid species, and around (2450-2550) m, *Pinus kaysia*, *Quercus semicarpifolious* and *Rhododendron arboreum* are dominant trees and in grasslands around *Anaphalis margaritacea*, *Gnaphalium affine*, *Satyrium nepalense*, *Roscoea australis*, *Bistort* spp, *Peristylus constrictus*, epiphytic orchid species, and other plants can be found. Most of the plant species had multiple uses which were used in the treatment of diseases and other conditions. (sources; Author's survey,2013)

Among then, 76 species have medicinal value. The largest number of medicinal species came from Asteraceae (11), which was followed by Orchidaceae (8), Fabaceae and Ranunculaceae (5) and, (3) species of, Rosaceae, Rubiaceae, Gentianaceae, Zingibraceae, (2) species of, Eriaceae, Violaceae, Scrophulariaceae, Smilaceae, Apiaceae, Buddlejaceae, Myricaceae, (1) species of Dipsaceae, Juglandaceae, Oleaceae, Symplocaceae, Plantaginaceae Taxaceae, Proteaceae, Acanthaceae, Amaranthaceae, Araceae, Alliaceae, Aristolochiaceae,

Fagaceae, Geraniaceae, Hypericaceae, Labiatae, Saxifragaceae, Polygonaceae, Proteaceae, Pinaceae, Rutaceae, Myrsinaceae, and Premulaceae. (sources; Author's survey,2013))

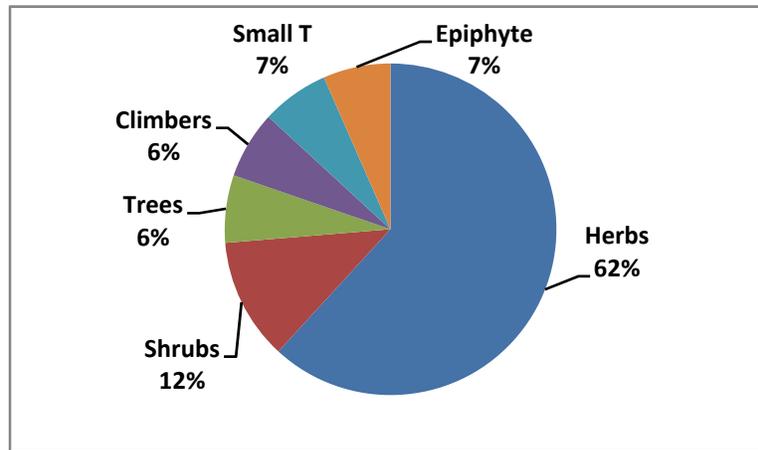


Figure.3. Distribution of Medicinal Plant

These 76 species were found to treat (50) ailments, (33) of which were used to treat more than one disease and the remaining was used to treat only one disease. The study of the represented(76) species medicinal plants revealed that herbs made up the highest proportion of followed by herbs (47), shrubs (9), trees (5), small tree(5), epiphyte (5) and Climbers(5). The distribution pattern of life form of medicinal plants species in NMT area that naturally growing are long- lived herbaceous perennials followed by herbs (62)%, shrubs (12)%, small tree(7)%, epiphyte(7)% ,tree (6)% and, climbers (6)% (Figure.3).

5.2. Utilization : This study recorded the uses of several parts of individual plant species as medicine. The most commonly used medicinal plant parts was the natural roots(27), followed by leaves (26), the whole plant(19), flowers(8), Pseudo bulb(3), Rhizome(3) tuber (2)Bark (2),Stem(2), Young root(2),others are (1) etc. (Figure 4.)

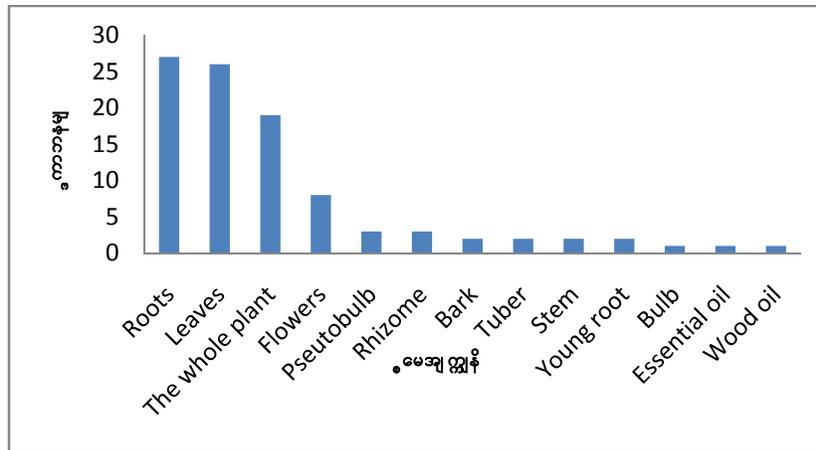


Figure.4. Plant parts used in the preparation of medicine

Various parts were used for the treatments of diseases/ailments such as, cough (10), Fever (9), dysentery(8), followed by (7) species of inflammatory, diarrhoea. (6) species of skin, (5) species of stomachache, tonic, ulcer, (4) species of febrifuge, diabetes, indigestion, toothache, cut& wound. Moreover, (3) species of influenza, jaundice, malaria, cholera(Fig 5.) expectorant, headache, and rheumatism and others. (Figure 6.)

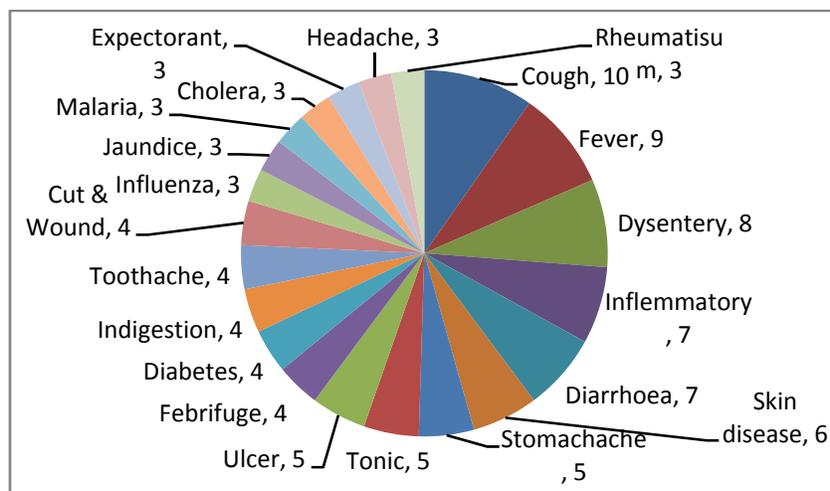


Figure 5. Different types of diseases

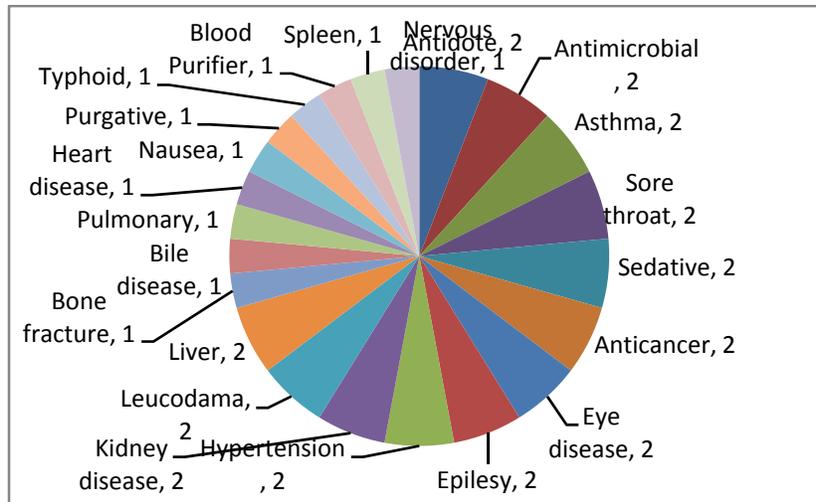


Figure6. Different types of diseases

This forest is ecologically, socially, economically and culturally very important for the inhabitants residing near by who are mostly dependent on forest product to make their living. Loss of such a forest and the various threatened species would have great implications for the environment, biodiversity and socio-economic set up of the communities. Such species requires urgent conservation measures that will enhance healthy regeneration and guarantee sustainable uses of these species. It is therefore mandatory to implement conservation measures (both in-situ and ex-situ) for such species of the forest. Although, *Pinus kaysia*, *Quercus semicarpifolious* and *Rhododendron arboreum* are common in forest.

The large scale exploitation of forests both in legally and illegally and the encroachment of forest land for the settlement, agricultural products use, forest fire and others due to the area under forest is decreasing and degrading at an alarming rate in Chin state. Many dense forest area of the state have already come to the list of degraded forest. Another important cause of forest degradation in the state is the shifting agricultural practices. Many of the environmental problems facing are directly related to the reckless exploitation of forest resources by the people such as flood, soil erosion etc in the state. It also leads to the serious ecological crisis in the state. Cultivation periods have been reduced to 3-4 years resulting in erosion, landslides, loss of land fertility and productivity.

The best way to conserve the medicinal plants as in the case of any other taxa is *in situ* conservation and in some rare cases if the habitat is threatened, selected species can be saved by

ex situ method. A lot of tribal communities depend upon the wild plants (medicine, orchid, food and fodder) sources for their livelihood. Therefore, collection of medicinal plants can not be avoided and collections are also seen as a source of availability of raw drugs in the market. Besides these, mass reproduction using multiplication methods, establishment and maintenance of herbal gardens and medicinal plant nurseries for *ex situ* conservation and ensuring the availability of quality planting material for cultivation, together with education and awareness programmes for the conservation and sustainable utilization of medicinal plants are suggested by (Pankaj Sharma, 2014).

6. Conclusion

In Myanmar, Medicinal Plants and Aromatic Plants (MAPs) of annual, biennial and perennial nature have significant contribution to livelihood improvement of rural communities. They have unique characteristics, high medicinal values. Species having high demand and value in the international market are over exploited and vulnerable in NMT areas. Based on the result of MAPs study of some plant species in the NMT following conclusion could be drawn: Sustaining the natural resource base is the must, but is a great challenge for Myanmar, especially in the highland areas where alternate opportunities of livelihood and income generation for the communities is less and agriculture production situation is poor.

7. Recommendations

In situ and *ex situ* conservation of endangered or likely to be endangered (rare) species should immediately be started in the appropriate districts of the state. Wild collected plants must be limited as far as possible and replaced step by step by cultivation. Rural people should be encouraged to raise their own ethno medicinal gardens or herb gardens in their vicinity to ensure conservation of the depleting biodiversity in medicinal plants.

Research priority should be given to develop appropriate technology for propagation, cultivation, processing, chemical characterization and marketing of endangered medicinal plant species.

Local people should be trained how to propagate, preserve and collect the medicinal plants as a part of extension. They should be educated and provided with the proper guide lines, so that there is a continuous regeneration of wild flora. It is again important that we should not disturb

the local forest flora, which is generally susceptible to environmental changes which may lead to extinction of natural species. Also the genetic diversity in medicinal plants has diminished due to shifting cultivation and large scale destruction of their natural location.

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27. <http://www.flowers.org.uk/flower>
28. Plants for Use - Search.html
29. Himalayan Thorowax.html
29. *Gnaphalium affine* 2.html
30. *Geranium pratense*.html
31. *Senecio scandens*.html
32. Saqib, Z1 and Sultan, 2010, Ethnobotany of Palas Valley, Pakistan
33. Grieve, (1930) A Modern Herbal.
34. *Quercus semicarpifolia*.html

No.	Plant species	Family	Major Habitat	Part Uses	Uses
1.	<i>Aristolochia wardiana</i> Ma.	Aristolochiaceae	Climber	Leave	Snake bite(Antidote)
2.	<i>Anaphalis margaritacea</i> (L.) Benth. & Hook.f.	Asteraceae	H	Leaves& head paste The whole plant	Cuts, wounds, boils. The rubbed and rolled dry leaves were used in intestinal disorder. By keeping the flame of rubbed and rolled leaves on the top of the head, the heat passes slowly .is anodyne, antiseptic, astringent, expectorant and sedative, Used internally, it is a good remedy for pile, dysentery and pulmonary affections, the whole plant is applied to burns, sores, ulcers, and rheumatic joints. An infusion of the plant is steamed and inhaled in the treatment of headaches.
3.	<i>Anisliaea latifolia</i> (D.Don)	Asteraceae	H	Root	Colic, fever ,cholera
4.	<i>Allium wallichii</i> Kunth	Alliaceae	H	Bulb	Boiled then fried in ghee, are eaten in the treatment of cholera and dysentery. The raw bulb is chewed to treat coughs and colds. It is said that eating the bulbs can ease the symptoms of altitude sickness.
5.	<i>Arisaema wattii</i> Hook.f	Araceae	H	Tuber	Colic, fever ,cholera
6.	<i>Agapetes moorei</i> Hemsl	Ericaceae	Shrub	Rhizome	Used for stomach
7.	<i>Astragalus chlorostachys</i> Royle ex	Fabaceae	Shrub	Arial Root	Tonic, febrifuge, tuberculosis
8.	<i>Artemisia indica</i> Willd.	Asteraceae	H	W Plant Root	The juice of the plant is used in Nepal to treat diarrhoea, dysentery and abdominal pains.. A paste of the plant externally to treat wounds. a tonic for the kidneys.
9.	<i>Aconitum heterophyllum</i> Wall. exRoyle	Ranunculaceae	H	Root	Root Paste of dried root mixed with water and sugar is taken orally for treating Dirrahoea,Fever, cough, stomachache
10.	<i>Achyranthes bidentata</i> Blume	Amaranthaceae	H	W Plant	is taken internally to treat hypertension, back pains, urine in the blood, menstrual pain, bleeding .
11.	<i>Ageratum conyzoides</i> L.	Asteraceae	H	Leaves	Paste are used for Cut& wound, ulcer , Cough

12.	<i>Alpinia nigra</i> (Gaertn.)	Zingiberaceae	H	Rhizome w	is used as an Tonic, diuretic, expectorant .It is also used in the treatment of impotenceand bronchitis the <u>root</u> pounded and mixed with rice whisky is applied to skin for ringworm.. The boiled green root is a reduce <u>flatulence</u> . A root extract is taken thrice daily for the treatment of <u>gastric ulcers</u> , and Its use as an <u>antiinflammatory</u> .
13.	<i>Blumea fistulosa</i> (Roxb.) Kurz	Asteraceae	H	Leaf	Skin
14.	<i>Bupleurum candollei</i> Wall	Apiaceae	H	Roots	Treatment of coughs, fevers, and influenza.
15.	<i>Buddleja asiatica</i> Lour	Buddlejaceae	H	Root decoction	Tuberculosis
16.	<i>Buddleja macrostachya</i> Benth	Buddlejaceae	H	leaves	Leaves are used for venereal disease.
17.	<i>Bulbophyllum odoratissimum</i>	Orchidaceae	Epiphyte	Wp	Treat tuberculosis and fracture
18.	<i>Bistorta yunnanen</i> H. Dross.	Polygonaceae	H	Leaves rhizome	Dried leaves are used, both internally and externally, in the treatment of internal and external bleeding, diarrhoea, dysentery, cholera. is used for: epilepsy, fever, tetanus, carbuncles, snake bites, and diabetes .
19.	<i>Cicerbita alpine</i> (L.) Waller.	Asteraceae	H	leaves	diuretic and applied externally to inflammations
20.	<i>Clematis montana</i>	Ranculaceae	Climber	stem	Antiviral activity
21.	<i>Cyananthus lobatus</i>	Campanulaceae	H	Flower Root	a sweet, astringent and acrid taste with a cooling potency ^l . Various serous disorders and constipation The juice of the root, used in the treatment of peptic ulcers
22.	<i>Coelogyne nitida</i>	Orchidaceae	Epiphyte	Pseudobulb	Paste & juice are applied in headache and fever and burn.
23.	<i>Cleimatis bucharaniana</i> DC	Ranculaceae	Climber	Root Stem Wp Leaf pasate	^ A paste swellings caused by inflammation. The juice of the root is used in the treatment of peptic ulcers, coughs and colds. A paste of the stem is used toothache. The juice of the plant is applied externally to cuts and wounds, indigestion. The leaf juice is taken internally, and

					is also applied externally to the forehead, in the treatment of coughs and colds. Skin
24.	<i>Dipsacus inermis</i> Wall.	Dipsacaceae	H	Root paste leaves	Leucoderma Boiled in water and the resulting extract is used by ladies for taking bath after delivery.
25.	<i>Dendrobium longicornu</i> Lindl.	Orchidaceae	epiphyte	Plant juice	fever
26.	<i>Eriosema chinense</i> Vogel	Fabaceae	Shrub	Grain	Decoction, with powdered pepper added, is given for diarrhea.
27.	<i>Engelhardtia spicata</i> Blume	Juglandaceae	Tree	young leaves	Scabies and skin
28.	<i>Gnaphalium affine</i> D.Don. D.Don	Asteraceae	H	whole plant	Expectorant and febrifuge. A decoction is used in the treatment of influenza, sore throat, productive coughing, rheumatoid, rheumatic injuries, leucorrhoea and skin
29.	<i>Geranium pretense</i> L.	Geraniaceae	H	wplants Roots	vulnerary. Analgesic, anti-inflammatory and febrifuge, cures from influenza, inflammation of the lungs, pain and swellings of the limbs. Cough cold, lung disease, eye disease, fever, lymph fluid disorder, back ache, bile disease and stomach disease. (Medicinal Plants of Dolpo)
30.	<i>Gentiana sino.ornata</i> Balf.f.	Gentianaceae	H	Roots	The roots are used medicinally to treat weak or underactive digestive systems and also as anti-inflammatory medicine
31.	<i>Galium asperifolium</i> Wall.	Rubiaceae	H	Plant waste Whole plant	Skin ailments is grinded in water, used in worm infestation.
32.	<i>Hypericum perforatum</i> L.	Hypericaceae	H	whole plant	Cuts, malarial, antidepressant, anti cancerous,
33.	<i>Helicia nilagirica</i> Bedd.	Proteaceae	S. Tree	Leaves	a decoction prepared by boiling the leaves is used for various stomach ailments including peptic ulcer and indigestion.I

34.	<i>Hedyotis corymbosa</i> (L.) Lam	Rubiaceae	H	wp	Hepatoprotective agent.
35.	<i>Hedychium gardnerianum</i>	Zingiberaceae	H	Rhizome	digestive, stomachic, nausea, vomiting, inflammation., asthma and internal injuries, pains. liver complaints, indigestion .
36.	Indigofera australis	Fabaceae	Shrub	Root	toothache
37.	<i>Indigofera tinctoria</i>	Fabaceae	Shrub	leaves and twigs	Dye, leaf extracts (sometimes taken with honey or milk) are used to treat epilepsy, nervous disorders, asthma, bronchitis, fever, complaints of stomach, liver, kidney and spleen.
38.	<i>Isodon coetsa</i> spp	Libiateae	H	Aerial shoot	Anti cancer-
39.	<i>Inula cappa</i> (Buch.Ham)	Asteraceae	H	Root	juice is used in the treatment of peptic ulcers, indigestion and other gastric disorders and fevers.
40.	<i>Listea cubeba</i> (Lour). Per.	Lauraceae	S.Tree	Essential oil	Indigestion, cough
41.	<i>Myrica esculenta</i> Buch- Ham.	Myricaceae	S.Tree	Bark, Leaves Fruit	Vit. C, Asthma, Bronchitis, Diarrhoea & tooth ache Skin diseases & wounds
42.	<i>Myrsine semiserrata</i> - Wall.	Myricaceae	S.Tree	Gum Leaf	Used as a warming remedy in the treatment of diarrhoea. A decoction of the leaf is used as a blood purifier
43.	<i>Mazus pumilus</i> (Burm.f.)	Scrophulariaceae	H	the whole plant	is febrifuge and tonic. The juice of the plant is used in the treatment of typhoid.
44.	<i>Pleione praecox</i>	Orchidaceae	Epiphyte	Pseudobulb	Dried powder is tonic, paste is used in cut & wound.
45.	<i>Parochetus communis</i> Buch.- Ham.	Fabaceae	Shrub	Flowers, leaves	Antimicrobial
46.	<i>Peristylus constrictus</i> (Lindl.) Lindl.	Orchidaceae	H	Root	Paste applied to boil for skin
47.	<i>Pholidota articulata</i> Lindl.	Orchidaceae	epiphyte	wp Root	Wp used as tonic. Root powder is treat cancer.
48.	<i>Plantago major</i> L.	Plantaginaceae	H	Seed Leaves	Powder is useful in dysentery. Hypertension, Diabetes

49.	<i>Primula denticulata</i>	Primulaceae	H	F & Root paste	Digestive disorder, diabetes, Urine, lice killing
50.	<i>Potentilla montisvictoriae</i> H. Ikeda & H. Ohba	Rosaceae	H	Leaves	People take potentilla as a tea for diarrhea menstruation, sore throat, oral and skin ulcerations, bleeding, and diarrhea.
51.	<i>Pedicularis rex</i> C.B. Clarke	Scrophulariaceae	H	Leaves	a folk medicine for the treatment of measles, chronic hepatitis and rheumatism paralysis
52.	<i>Pinus khasya</i> (Royle. ex. Parl)	Pinaceae	Tree	Wood oil	Piles, Cough in children.
53.	<i>Quercus semicarpifolia</i>	Fagaceae	Tree	Galls Bark	can be used in the treatment of chronic diarrhea, dysentery etc. The juice of the bark is applied externally to treat muscular pains.
54.	<i>Rhododendron arboreum</i> .Sm.	Ericaceae	Tree	Flower Leaves	Dried flower powder is effective in checking diarrhea and blood dysentery. , Tonic for heart, Digestive and respiratory disorder A decoction of the flowers is used to check a tendency to vomit, The petals are eaten to assist the removal of any animal bones that have become stuck in the throat The young leaves are made into a paste and then applied to the forehead in the treatment of headaches
55.	<i>Rubus ellipticus</i> Sm.	Rosaceae	Shrub	Root Fruit	Extract of root mixed with water is consumed twice in a day for curing diarrhea and stomachache The fruits and crushed roots are used to cure dysentery Juice of fruits is administered orally in cholera.
56.	<i>Rubus niveus</i> Wall.	Rosaceae	Shrub	Leaves	Menorrhoea & Antidote of snake bite
57.	<i>Rubia cordifolia</i> L.	Rubiaceae	Climber	Paste of leaves Whole plant	is applied for ulcer and Diabetes, astringent, and dysenteric, antiseptic .
58.	<i>Roscoea australis</i> E.J Cowley	Zingiberaceae	H	Root	Cure to used rheumatism
59.	<i>Strobilanthes dasyphylla</i>	Acanthaceae	H	Wplant	anti inflammatory and anti microbial

	Kung				
60.	<i>Selinum wallichianum</i>	Apiaceae	H	Wp, Root	Nerving, sedative,
61.	<i>Scenecio scandens</i> D.Don	Asteraceae	H	Leaves Flowers / Essential Oil	Eye diseases. Treatment of bacterial infections, inflammation, arthritis, and rheumatic diseases and Antimicrobial and Inflammatory:
62.	<i>Senecio chrysanthemoides</i> DC.	Asteraceae	H	Whole plant	Used as skin
63.	<i>Spilanthes paniculata</i> Wall ex. DC	Asteraceae	H	Leaves, Root, Flowers and Fruits	Used to relieve toothache and infections of throat and gum, arthritis, ulcer
64.	<i>Spiranthes sinensis</i> (Pers) Ames	Orchidaceae	H	root	Aphrodisiac, meningitis, dysentery, headache
65.	<i>Satyrium nepalense</i> D.Don	Orchidaceae	H	Tubers	Tonic and used in diarrhea and malaria, juice is used externally in cut and wound.
66.	<i>Swertia chirayita</i>	Gentianaceae	H	Leaves Wp	Blood diseases, Malaria, cough, cold, and fever
67.	<i>Swertia ciliate</i> CD.	Gentianaceae	H	wP	Blood diseases, purifier
68.	<i>Symplocos theaeifolia</i> D.Dom	Symplocaeeae	Tree	Leaf	Extract of and twig shows activity against human epidermoid
69.	<i>Smilax lanceifolia</i>	Smilaceae	climber	Root	boiled extract of the root
70.	<i>Smilax geylamica</i>	Smilaceae	climber	Root	burns and boils, back pains, stomach aches, lung disorders, and kidney problems
71.	Ta <i>Taxus wallichiana</i> Zucc.	Taxaceae	S.tree	Bark, Leaves	Tea, , Cancer , Lung and Diabetes, epilepsy
72.	<i>Thalictrum reniforme</i> Wall.	Ranunculaceae	H	Root	Jaundice
73.	<i>Thalictrum foliolosum</i> D.C.	Ranunculaceae	H	Root	Fever, leucoderma, toothache, diuretic, Febrifuge, putgative, tonic, Stomach
74.	<i>Viola arcuata</i> Blume.	Violaceae	H	whole plant	Infusion of the taken for heart disease.
75.	<i>Viloa pilosa</i>	Violaceae	H	Flower	Decoction of flowers is useful in coughs and colds.

				Root	jaundice.
76.	<i>Zanthoxylum accanthopodium</i> DC	Rutaceae	Shrub	Fruits	Diarrhea and stomach ache