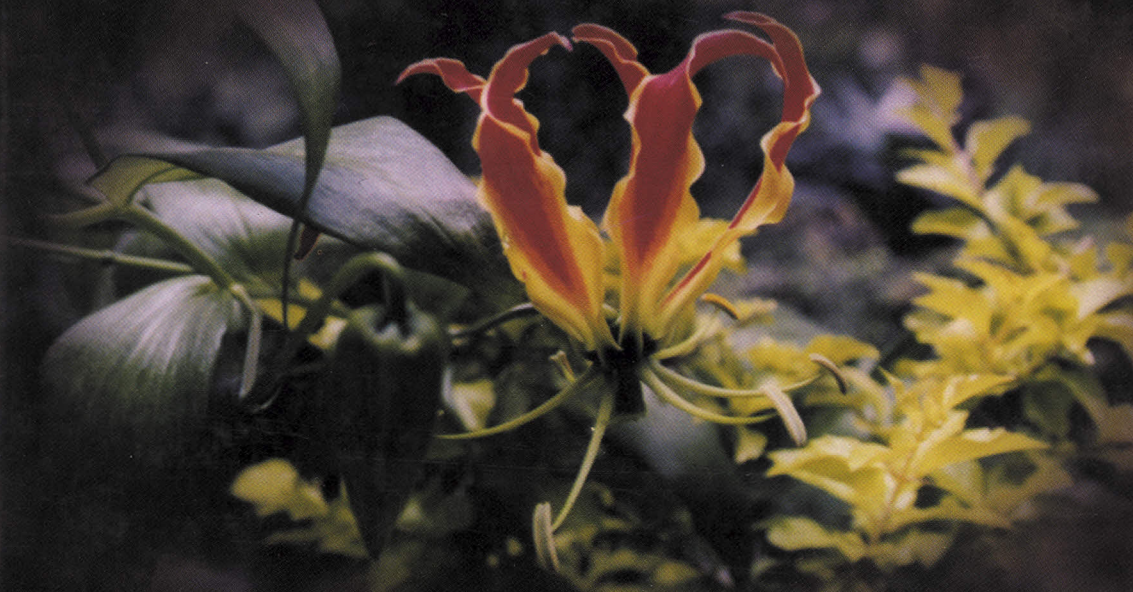


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Ethno-Medicinal Plants and Their Uses in Western Mizoram

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INTRODUCTION

The study area is situated in the western part of Mizoram which falls under the "Mamit District" is recently declared as one of the eight districts in Mizoram in 1998. It is located between 23°15' N- 24°15' N latitude and 92°16'E-92°40'E longitude and covers a geographical area of 3015.57 Km² which is 14.3% of the total geographical area of Mizoram. The district includes 102 villages with a population of 59,102 which is around 8.57% of the total population of Mizoram with a density of 19 per sq. km. The study area enjoys a moderate monsoon type of climate giving 20°C – 34°C during winter with an average annual rainfall 2842 mm. The soil type is sandy loam. The highest peak in this area is around 1485 meters and the lowest elevation is 40 meters from sea level.

Most of the people in this area depends upon agriculture especially jhum cultivation. The total area under jhum cultivation is around 291.42 Sq. Km. while land under permanent cultivation i.e. wet rice cultivation and dry rice cultivation includes 10.49 sq. km and 5.47 sq. km respectively (Anon, 1993).

This area is very rich in flora and fauna, the total area covered by forest either dense or sparse is 2588.62 sq. km including plantation of forest tree and jhum land. The study area has three distinctive reserved forests having a mixed evergreen to evergreen with bamboo forests types of vegetation under the government of Mizoram viz. Dampui reserved forest which covered 255 sq. km., Dampa wild life sanctuary which covered 480 sq.km. and Lungkulh virgin forest.

METHODOLOGY AND APPROACH

This study is based on research that involved extensive field work, collection of sec-

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ondary information from locally available literatures and through personal interviews with local practitioners in Western part of Mizoram under Mamit District, conducted over a period of more than three years. During the field survey the practitioners amongst the inhabitants of the area including the "Bawlpu" (medicine man) and others with knowledge of these plants, were consulted. The plants were identified with the help of regional flora and a herbarium, following herbarium method (Jain & Rao, 1976).

RESULTS

Common Plants Species of Mamit District

The usual cultivation practice of this area is shifting cultivation, which has led to a severe degradation of forests and has disturbed plant succession. The original plant-species are replaced by *Melocana bambusoides*, *Mikania micrantha*, *Eupatorium odoratum*, *Saccharum spontaneum* and thatched grass. Among the natural vegetation 23 species belonging to 16 families and 22 genera are common throughout the study area. (Table I).

Table I: The common species of natural vegetation of the study area

Sl. No	Scientific Name	Local name	Family	Habit	Status	Mode of Utilization
1.	<i>Albizzia stipulata</i>	Vang	Mimosaceae	Tree	F	Furl wood, bark yield gum
2.	<i>Anogeissus accuminata</i>	Zairum	Combretaceae	Tree	F	Timber, Fuel wood
3.	<i>Bambusa Spp.</i>	Mau	Poaceae	Small tree	A	Medicinal plant/food
4.	<i>Bauhinia variegata</i>	Vaube	Caesalpiniaceae	Small Tree	F	Posts
5.	<i>Bursera serata</i>	Bil	Eurseraceae	Tree	F	Fruit
6.	<i>Callicarpa arborea</i>	Hnahkiah	Verbenaceae	Tree	F	Medicinal plant
7.	<i>Cedrella toona</i>	Tei	Meliaceae	Tree	F	
8.	<i>Derris robusta</i>	Thingkha	Fabaceae	Tree	F	Posts & Fuel wood
9.	<i>Duabanga soneratioides</i>	Zuang	Sonneratiaceae	Large tree	F	Timber
10.	<i>Emblica officialis</i>	Sinhlu	Euphorbiaceae	Tree	F	Fruit/Medicinal plant
11.	<i>Erianthus longisetum</i>	Luang	Paoceae	Herb	A	Fodder

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Sl. No	Scientific Name	Local name	Family	Habit	Status	Mode of Utilization
12.	<i>Eupatorium odoratum</i>	Tlamsam	Asteraceae	Shrub	A	Antiseptic
13.	<i>Ficus cunia</i>	Theitit	Moraceae	Tree	F	Fruit
14.	<i>Ficus semicordata</i>	Theipui	Moraceae	Tree	F	Fruit
15.	<i>Gmelina arborea</i>	Thlanvawng	Verbenaceae	Tree	F	Timber
16.	<i>Imperata cylindrica</i>	Di	Poaceae	Shrub	A	Thatching
17.	<i>Melocana bambusoides</i>	Mautak	Poaceae	Small tree	A	Medicinal plant/food
18.	<i>Michelia champaca</i>	Ngiau	Magnoliaceae	Tree	F	Timber
19.	<i>Sapium baccatum</i>	Thingvawkpui	Euphorbiaceae	Large Tree	F	Wood for packing boxes
20.	<i>Schima wallichii</i>	Khiang	Theaceae	Tree	F	Fire wood
21.	<i>Sterculia villosa</i>	Khaupui	Steculiaceae	Tree	F	Bark for fibre
22.	<i>Tetrameles nudiflora</i>	Thingdawl	Tetramelaceae	Large tree	F	Timber

MEDICINAL PLANTS

Medicinal plants are another diverse category of plants directly used from the wild. Exploitation of traditional knowledge of medicinal plants is another key issue the world over. Medicinal plants are significant to both developing and developed countries. An estimate indicates that over 75% of the world's rural people rely on traditional herbal medicine. About half of the world's medicinal compounds are still derived or obtained from plants (Hamann, 1991). Many of the most important drugs of recent times were first isolated from plants. There are 91 plants species belonging to 56 families and 68 genera which are being utilized by the tribals of western part of Mizoram for herbal medicine (Table II).

Table II: Medicinal Plants

Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
1.	<i>Acer laevigata</i>	Thingkhim	Aceraceae	Tree	F	Bark	Decoction of bark in externally applied on strain

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Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
2.	<i>Achyranthes bidentata</i>	Vangvat-tur	Amaranthaceae	Herb	A	Leaf	The leaves are crushed and the juice is applied for the remedy of poisoned leach bite sores
3.	<i>Adiantum caudatum</i>	Chakawkria	Adiantaceae	Herb	A	Fronde	The frond are crushed and applied externally on skin diseases
4.	<i>Adiantum phillippense</i>	Chakawkte	Adiantaceae	Herb	A	Whole plant	The infusion of the plant is taken for fever and dysentery
5.	<i>Aeginetia indica</i>	Sangharvaibel	Orobanchaceae	Climber	F	Rhizome	Juice of the rhizome is applied to mumps
6.	<i>Aegle marmelos</i>	Belthei	Rutaceae	Tree	EW/R	Fruit	Decoction of fruit is applied for the remedy of dysentery
7.	<i>Ageratum conyzoides</i>	Vailenhlo	Asteraceae	Herb	A	Root	The root is crush with <i>Callicarpa arborea</i> (Hnahkiah) bark and rhizome of <i>curcuma</i> (Aieng) and the juice is drunk for the remedy of stomach cancer
8.	<i>Albizia odoratissima</i>	Kangteknu	Mimosaceae	Leaf	F	Leaf	The leaf boiled in ghee is used as remedy for cough
9.	<i>Albizia procera</i>	Kangtekpa	Mimosaceae	Leaf	F	Leaf	The poultice of leaves is applied to ulcers
10.	<i>Arenga pinnata</i>	Thangtung	Palmae	Stem	F	Root	Decoction of root is applied for bronchitis and stomachache

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Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
11.	<i>Amomum dealbatum</i>	Aidu	Zingiberaceae	Herb	A	Bark	The bark is crushed and the juice is used for the antiseptic
12.	<i>Ananas comosus</i>	Lakhuihthei	Bromeliaceae	Herb	F	Leaf, fruit	The leaves or fruit are crushed and the juice is used for the remedy of convulsion
13.	<i>Anogeissus acuminata</i>	Zairum	Combretaceae	Tree	R	Bark	The Barks are crushed and the juice is applied for antiseptic
14.	<i>Artocarpus lakoocha</i>	Theitat	Moraceae	Tree	F	Seed, bark	The seed is used for purgative and the powder bark is applied to sores to draw out purulent matter, infusion is applied to pimples and cracked skin
15.	<i>Artocarpus chama</i>	Tatkawng	Moraceae	Tree	F	Bark	Decoction of bark is taken against dhiarrhoea
16.	<i>Averrhoa carambola</i>	Theiherawt	Averahoaceae	Climber	F	Fruit	Three or four slices of fruit are taken daily for jaundice, bleeding piles and as anti-scorbutic
17.	<i>Bischofia javanica</i>	Khuangthli	Euphorbiaceae	Leaf	F	Leaf	Juice of leaves is considered a cure for sore
18.	<i>Bombax ceiba</i>	Phunchawng	Bombaceae	Tree	Ovu	Root, Bark, Gum, Flower & Fruit	The root is used for stimulant, tonic the root and bark is also used for emetic. Gum is used for

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Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
19.	<i>Bombax insigne</i>	Pang	Bombaceae	Tree	F	Bark	aphrodis demulcent, homeostatic astringent, tonic alternative used in diahbroea, dysentery and minor. Fruit and flower are also used against snake bite The bark is boiled with that of <i>Mangifera indica</i> (equal part) and half cup of water is taken twice daily.
20.	<i>Callicarpa arborea</i>	Hnahkiah	Verbenaceae	Tree	A	Bark	The bark is crushed and the juice is drunk for the remedy of stomach pain, dysentery and vomiting
21.	<i>Cammellia sinnensis</i>	Thingpui	Theaceae	Stem	F	Leaf	Tealeaf boiled is used as astringent, stimulant, diuretic.
22.	<i>Carcinia paniculata</i>	Vawmva	Guttiferae	Tree	F	Seed	The seed is used as against in roundworm.
23.	<i>Caryota urens</i>	Tum	Arecaceae	Tree	F	Stem	The fleshy toddy is taken as food during famine.
24.	<i>Casia alata</i>	Tuihlo	Caesalpiniaceae		F	Leaf	The leaves are bruised and applied on ringworm.
25.	<i>Catharanthus roseus</i>	Kumtluang	Apocynaceae	Herb	F	Leaf	The raw leaves are taken for the remedy of high blood pressure

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Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
26.	<i>Centella asiatica</i>	Lambak/ Hnahbial	Apiaceae	Herb	F	Leaf	The leaves are boiled and the water is taken for the remedy of asthma and eyes problems
27.	<i>Chukrasia tabularis</i>	Zawngtei	Meliaceae	Tree	R	Root	Raw roots are taken for the remedy of stomach pain
28.	<i>Citrus sinensis</i>	Serthlum	Rutaceae	Tree	F	Leaf	The leaves are boiled and the water is taken for the remedy of malaria
29.	<i>Costus speciosus</i>	Sumbul	Zingiberaceae	Herb	A	Whole plant	The whole plant is taken raw for the remedy of tonsillitis
30.	<i>Cucurbita maxima</i>	Mai	Cucurbitaceae	Climber	A	Fruit, leaf	The fruit or leaves are boiled and the water is taken for the remedy of eye problem and swollen respectively
31.	<i>Curculigo crassifolia</i>	Phaiphek	Amaryllidaceae	Stem	F	Tuber	Juice of tuber is used in stomachache
32.	<i>Curcuma longa</i>	Aieng	Zingiberaceae	Herb	A	Rhizome	Rhizome is crushed and the juice is used for antiseptic
33.	<i>Dendrocnida sinuata</i>	Thakpui	Urticaceae	Small tree	A	Root	The root is boiled along with crabs and the water is taken for the remedy of jaundice
34.	<i>Dillenia indica</i>	Kawrthindeng	Dilleniaceae	Tree	F	Fruit	The fruit is boiled and the water is taken for remedy of stomach problem

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Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
35.	<i>Dioscorea alata</i>	Rambachim	Dioscoreaceae	Climber	A	Tuber	Tuber is used in leprosy, piles and goner problem.
36.	<i>Dysoxylum gobara</i>	Thingthupui	Meliaceae	Leaf	R	Leaf, Bud	Decoction of leaves and buds is used as against in diarrhea and dysentery.
37.	<i>Elaegnus caudata</i>	Sarzuk	Elaeagnaceae	Shrub	F	Root	The root is boiled and the water is taken for the remedy against retained placenta
38.	<i>Embelia subcoriacea</i>	Tling	Elaeagnaceae	Climber	F	Leaves	Decoction of leaves is used for bathing in the treatment of smallpox.
39.	<i>Emblica officinalis</i>	Sunhlu	Euphorbiaceae	Tree	F	Fruit	The raw fruit is taken for the remedy of stomach problem
40.	<i>Entada pursaetha</i>	Kawi	Mimosaceae	Climber	F	Seed	The seed are soaked in water and the water is dropped into the nostrils against leech.
41.	<i>Ervatamea coronaria</i>	Paarsi	Apolynaceae	Stem	F	Root	The root is chewed for to relief of toothache
42.	<i>Erythrina indica</i>	Fartuah	Leguminaseae	Tree	F	Bark	The bark is used as astringent and antidote to snake bite.
43.	<i>Ficus bengalensis</i>	Hmawng	Moraceae	Tree	R	Latex, Bark, Seed, leaf and root	The milky juice is applied externally for pains in rheumatism, lumbago. Infusion of bark is used as tonic,

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Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
							astringent used in dysentery, dhiarrhoea and diabetes. Seed is used for cooling tonic, leaves is applied as poultice to abscesses and root fibre in gonorr (Gonorrhoea).
44.	<i>Ficus prostrata</i>	Theitit	Moraceae	Tree	F	Root	The root is crushed and the juice is applied for the remedy against poisoned snake bites
45.	<i>Garuga pinnata</i>	Bungbutuairam	Burseraceae	Tree	F	Bark, Leaf	Juice of stem-bark is dropped into the eye to cure opacities of conjunctiva. Juice of leaves mixed with sugar is taken for asthma.
46.	<i>Girardinia palmata</i>	Kangthai	Urticaceae	Stem	A	Root	The root is crushed and the juice is taken against food allergy e.g. pork.
47.	<i>Gmelina arborea</i>	Thlanvawng	Verbenaceae	Tree	R	Fruit	Roasted fruit is applied externally in itches.
48.	<i>Hedychium acuminatum</i>	Aithur	Zingiberaceae	Stem	F	Rhizome	The rhizome is used in stomachache, carminative, tonic, stimulant, expectorant, liver problem, vomiting, inflammatory and pains; also used in snakebite.

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Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
59.	<i>Macaranga deutchulata</i>	Zawngtenawh-lung	Euphorbiaceae	Shrub	A	Whole plant	The whole plant is boiled and the water is taken for the remedy against diabetes and retained placenta
60.	<i>Melocalamus compactiflorus</i>	Sairil	Graminae	Climber	F	Stem	Juice of stem is taken against influenza.
61.	<i>Merremia umberlata</i>	Vawktesentil	Convolvulaceae	Stem	A	Leaf	Poultice of leaves is applied on burns and sores.
62.	<i>Mesua ferrea</i>	Herhse	Guttiferae	Tree	R	Flower, bark, leaf	Flower is used as astringent, stomachic while flower and leaves are also used against snakebite & scorpion sting.
63.	<i>Michelia champaca</i>	Ngiau	Magnoliaceae	Tree	F	Leaf, fruit, seeds	Infusion of leaves is taken with honey for colic. The fruit and seeds are crushed and made into paste and applied to the crackle in the feet.
64.	<i>Mikania micrantha</i>	Japanhlo	Asteraceae	Herb	A	Leaf	The leaf juice is a good haemostatic. The leaves boiled with that vitex peduncularis is taken against fever; also the leaves juice is good for dysentery.
65.	<i>Mimosa pudica</i>	Hlonuar	Mimosaceae	Stem	A	Leaf, root	Leaves and root are used for pile and fistula; decoction of root is useful in gravelliest complaint.

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Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
66.	<i>Morinda agustifolia</i> Lum		Rubiaceae		F	Leaf	A poultice made of leaves is applied to a crackled in the feet.
67.	<i>Morus australis</i>	Lungli	Moraceae	Tree	F	Bark, Leaf, Root	Bark is used for anthelia, purgative; decoction of leaves is used as gaggle in inflammation of vocal cord, white roots is used as astringent.
68.	<i>Musa paradisiaca</i>	Balhla	Musaceae	Tree	F	Stem-sap	The sap of the stem is applied for antiseptic
69.	<i>Passiflora nepalensis</i>	Nauawimu	Pasifloraceae	Herb	A	Root	The root is boiled and the water is taken as anti malaria
70.	<i>Polygonum barbata</i>	Anbawng	Polynaceae	Herb	F	Seed	Seed are taken to receive colic.
71.	<i>Pratia nummularis</i>	Choak-thi	Campanulaceae	Herb	A	Leaf	The leaves is crushed and the juice is taken for the remedy of dysentery and vomiting
72.	<i>Pteridium acquilinum</i>	Katchat	Pteridiaceae	Herb	A	Rhizome	Decoction of rhizome is given in chronic disorder
73.	<i>Salix tetlasperma</i>	Tuipuisuthlah	Salicaceae	Stem	A	Bark	The bark is used as febrifuge.
74.	<i>Saraca asoca</i>	Mualhawih	Caesalpiniaceae	Tree	EN/R	Bark	Bark is astringent, used in uterine infultion and in gonor, in scorpion sting.
75.	<i>Schima wallichii</i>	Khiang	Theaceae	Tree	A	Fruit	Decoction of fruit is used for snake bite and insect bite.

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Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
76.	<i>Scoparia dulris</i>	Perhpawng-chaw/ Hlothlum	Scrophulariaceae	Herb	A	Whole plant	The whole plant is crushed and the juice is taken for the remedy of kidney stone
77.	<i>Securinega virosus</i>	Saisiak	Euphorbiaceae	Shrub	F	Leaf	The leaves are boiled and the water is taken for bathing children from scabies and measles
78.	<i>Smilax plolifera</i>	Kaiha	Liliaceae	Climber	A	Root	The root is grounded with old molasses or with coagulated lows milk, mixed with water and drink as a remedy against blood
79.	<i>Solanum torvum</i>	Tawkpui	Solanaceae	Herb	A	Seed	The crushed seed is applied to toothache and tooth decay.
80.	<i>Spondias mangifera</i>	Tawitaw	Anacardiaceae	Tree	F	Bark	The bark is refrigerant, useful in dysentery, gourd and mixed with water rubbed in both auricular and muscular rheumatism.
81.	<i>Stereopermus colais</i>	Zihngal	Bignoniaceae	Tree	F	Leaf	Decoction of leaves is used as febrifuge and leaf juice is applied on itch.
82.	<i>Taraktegenos kurzii</i>	Khawitur	Bilaceae	Tree	F	Seed	Oil extracted from seed is applied in leprosy and skin diseases.
83.	<i>Terminalia bellirica</i>	Thingvandawt	Combretaceae	Tree	R	Fruit	The fruit is taken against for stomach problem

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84.	<i>Terminalia bellirica</i>	Thingvandawt	Combretaceae	Tree	R	Fruit	The fruit is taken against for stomach problem

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Sl	Scientific Name	Local Name	Family	Habit	Status	Part Used	Mode of Utilization
84.	<i>Terminalia chebula</i>	Reraw	Combretaceae	Tree	R	Fruit	The fruit is taken for stomach problem
85.	<i>Trevesia palmata</i>	Kawhtebel	Araliaceae	Tree	F	Leaf	The leaf is crushed and the juice is taken as an effective remedy for colic, stomachache and high blood pressure.
86.	<i>Vitex peduncularis</i>	Thingkhawilu	Verbenaceae	Tree	R	Bark	The bark is boiled and the water is drunk for typhoid fever
87.	<i>Zanthoxylum armatum</i>	Arhrikreh	Rutaceae	Tree	A	Leaf	The leaves are used towards off fousls, lice
88.	<i>Ziziphus mauritiana</i>	Borai	Rhamnaceae	Tree	F	Root	Decoction of root is taken for fever and root powder is applied externally on chronic ulcer.
89.	<i>Zononia spp</i>	Lalruangadarna whna	Cucurbitaceae	Herb	A	Fruit	The ripened fruit is boiled and the water is taken against stomach problem

RARE AND THREATENED ETHNO MEDICINAL PLANT OF THE STUDY AREA

Rare and endangered species have been the focus of much conservation attention, but the same development pressures and destructive phenomena are also at work in the relatively wealthy and developed areas of Mizoram. There are 13 medicinal plant species belonging to nine families and 13 genera which are critically endangered and facing threat in the study area. (Table III). Most of the people in this area practising shifting cultivation which devastated a large area of forest as well as plant population, which make it some plant as rare and endangered species.

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Table III: Rare and Threatened ethno medicinal plants

Sl.	Scientific Name	Local Name	Family	Habit	Status	Occurrence
1.	<i>Aegele marmelos</i>	Belthei	Rutaceae	T	EW/R	Zawlnuam
2.	<i>Aquilaria malaccensis</i>	Thingrai	Thymeteaceae	T	CA/R	Tuipuibari
3.	<i>Bombax ceiba</i>	Phunchawng	Bombaceae	T	Vu	Lengpui
4.	<i>Cautleya gracillis</i>	Pale	Zingiberaceae	H	Ew/R	Dampui
5.	<i>Clerodendrum wallichii</i>	—	Verbenaceae	S	Vu/R	Dinthar
6.	<i>Cyclea arnotis</i>	—	—	—	Vu/R	W. phaileng
7.	<i>Elaeagnus pyriformis</i>	Sarzukpui	Elaeagnaceae	T	Vu	Tuipuibari
8.	<i>Ocimum temiflorum</i>	—	Labiatae	H	Ew	Perhsang
9.	<i>Ruellia suffruticosa</i>	—	—	—	CR/VR	Tuipuibari
10.	<i>Saraca asoca</i>	Mualhawih	Caesalpiniaceae	T	EN/R	Lungkwlh forest
11.	<i>Stemona var. minor</i>	—	—	—	EN	Tuipuibari
12.	<i>Zozonia indica</i>	—	Cucurbitaceae	H	CR/VR	Chikha forest

FRUITS AND WILD EDIBLE PLANTS

The local people living in the village of western part of Mizoram particularly on forest areas are still dependent upon wild plants for their various requirements. It has been shown through numerous examples that the tribals make wide use of a large variety of fruits and wild edible plants available to them (Lalramnghinglova, 1998). Altogether 44 wild edible fruit species belonging to 24 families and 34 genera and 28 wild edible plant species belonging to 23 families and 27 genera have been reported in this paper (Table IV and V).

Table IV: Wild Edible Fruits

Sl.	Scientific name	Local name	Family	Habit	Status
1.	<i>Aegle marmelos</i>	Belthei	Rutaceae	Tree	Ew/R
2.	<i>Anodendron paniculatum</i>	Theikelki	Melastomaceae	Climber	F
3.	<i>Artocarpus chama</i>	Tatkawng	Moraceae	Tree	F
4.	<i>A. heterophyllus</i>	Lamkhuang	Moraceae	Tree	F
5.	<i>A. lacoocha</i>	Theitat	Moraceae	Tree	F
6.	<i>Artocarpus spp.</i>	Tatte	Moraceae	Tree	F
7.	<i>Baccaurea ramiflora</i>	Pangkai	Euphorbiaceae	Tree	F
8.	<i>Bruinsmia polysperma</i>	Theipalngkawh	Styraceae	Tree	F
9.	<i>Carallia branchiata</i>	Theiria	Rhinophoraceae	Tree	F
10.	<i>Cyanthocalyx martabanicus</i>	Hreirawt	Anonaceae	Tree	F
11.	<i>Dillenia indica</i>	Kawrthingdeng	Dilleniaceae	Tree	F

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Sl.	Scientific name	Local name	Family	Habit	Status
12.	<i>Dinella roxburghi</i>	Theipabuan	Dilleniaceae	Tree	F
13.	<i>Elaegnus caudata</i>	Sarzuk	Elaegnaceae	Climber	A
14.	<i>Emblica officinalis</i>	Sunhlu	Euphorbiaceae	Tree	A
15.	<i>Eugenia jambolana</i>	Lenhmui	Myrtaceae	Tree	A
16.	<i>Euphoria longan</i>	Theifeimung	Sapindaceae	Tree	F
17.	<i>Ficus prostrata</i>	Theitit	Moraceae	Tree	F
18.	<i>Ficus semicordata</i>	Theipui	Moraceae	Tree	F
19.	<i>Flacourtia jangomar</i>	Sakhithe	Binaceae	Tree	F
20.	<i>Garcinia cowa</i>	Chengkek	Guttiferae	Tree	F
21.	<i>G. sopsopia</i>	Vawnmva	Guttiferae	Tree	F
22.	<i>Glochidion arborescens</i>	Tuaitit	Euphorbiaceae	Tree	F
23.	<i>Kadsura heteroclita</i>	Theiarbawm	Magnoliaceae	Tree	F
24.	<i>Litchi chinensis</i>	Vaitheifeimung	Sapindaceae	Tree	R
25.	<i>Mangifera indica</i>	Theihai	Anacardiaceae	Tree	A
26.	<i>Mangifera sylvestris</i>	Haifawvang	Anacardiaceae	Tree	R
27.	<i>Mangifera spp.</i>	Haivahmim	Anacardiaceae	Tree	R
28.	<i>Meliosma pinata</i>	Tuairam	Sabiaceae	Tree	F
29.	<i>Memecylon celastrinum</i>	Theikawrak	Melastomaceae	Tree	F
30.	<i>Musa paradisiaca</i>	Balhla	Musaceae	Tree	A
31.	<i>Protium serratum</i>	Bil	Burseraceae	Tree	F
32.	<i>Rhus javanica</i>	Khawmhma	Anacardiaceae	Tree	A
33.	<i>Spondias pinata</i>	Taitaw	Anacardiaceae	Tree	F
34.	<i>Stixis suaveolens</i>	Theisawntlung	Capaeidaceae	Climber	F
35.	<i>Syzygium cumini</i>	Hmuipui	Myrtaceae	Climber	F
36.	<i>S. saligna</i>	Hmuifarial	Murtaceae	Climber	F
37.	<i>Xeromphis spinosa</i>	Sazutheipui	Rubiaceae	Climber	F
38.	<i>Amomum dealbatum</i>	Aidu	Zingiberaceae	Herb	A
39.	<i>Elaegnus pyriformis</i>	Sarzukpui	Elaegnaum	Tree	Vu
40.	<i>Carcinia panniculata</i>	Vawmva	Guttiferae	Tree	F
41.	<i>Garuga pinnata</i>	Bungbutuairam	Burseraceae	Tree	F
42.	<i>Morus australis</i>	Lungli	Moraceae	Tree	F
43.	<i>Ziziphus mauritiana</i>	Borai	Rhamnaceae	Tree	F
44.	<i>Embelia subcoriacea</i>	Tling	Blaegnaceae	Climber	F

Table V: Wild Edible Plants

Sl.	Scientific name	Local name	Family	Habit	Part used	Status
1.	<i>Acacia spp</i>	Khanghu	<i>Mimosaceae</i>	Shrub	Young leaves	F
2.	<i>Adiantum caudatum</i>	Chakawkria	Adiantaceae	Herb	Young shoot	A
3.	<i>Amomum dealbatum</i>	Aidu	Zingiberaceae	Herb	Tuber	A

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Sl.	Scientific name	Local name	Family	Habit	Part used	Status
4.	<i>Arenga pinnata</i>	Thangtung	Aracaceae	Shrub	Tender heart/peel of the stem	F
5.	<i>Calamus spp</i>	Raichhawk	Palmae	Shrub		F
6.	<i>Capsicum frutescens</i>	Anhling	Solanaceae	Herb	Leaves	A
7.	<i>Caryota urens</i>	Tum	Palmae	Tree	Pith of the stem	F
8.	<i>Cephalostachyum capitatum</i>	Rawnal	Graminae	Tree	Tender shoot	A
9.	<i>Clerodendron colebrookianum</i>	Phuihnam	Verbenaceae	Shrub	Leaves	A
10.	<i>Colocasia spp</i>	Baibing	Araceae	Herb	Spadix	A
11.	<i>Dysoxylum procerum</i>	Thing thupui	Meliaceae	Tree	Young shoot and leaves	F
12.	<i>Eryngium foetidum</i>	Bahkhawr	Umbelliferae	Herb	Leaves	A
13.	<i>Eurya japonica</i>	Sihneh	Theaceae	Tree	Young leaves	A
14.	<i>Garcinia lancifolia</i>	Pelh	Clusiaceae	Herb	Young leaves	F
15.	<i>Hodgsonia machycarpa</i>	Khaum	Cucurbitaceae	Climber	Fruit	F
16.	<i>Lepionurus sylvestris</i>	Anpangthuam	Alocarea	Herb	Leaves	A
17.	<i>Litsea cubeba</i>	Sernam	Lauraceae	Tree	Leaves (condiment)	F
18.	<i>Lycianthes laevis</i>	Vanian	Solanaceae	Herb	Leaves	A
19.						
20.	<i>Musa spp.</i>	Tumbu	Musaceae	Tree	Young compressed inflorescences	A
21.	<i>Rhus acuminata</i>	Chhimhruk	Anacardiaceae	Tree	Young shoot and leaves	F
22.	<i>Tacca integrifolia</i>	Thialkha	Taccaceae			F
23.	<i>Trevesia palmata</i>	Kawhtebel	Anacardiaceae	Tree	Fruit	F
24.						
25.	<i>Diocoren alata</i>	Rambachim	Dioscoreaceae	Climber	Tuber	A
26.	<i>Polygonum barbata</i>	Anbawng	Polygonaceae	Herb	Leaf	A
27.	<i>Mellocana bambosoides</i>	Mautak	Poaceae	Tree	Young Shoot	A
28.	<i>Bambusa spp</i>	Mau	Poaceae	Tree	Young shoot	A
29.	<i>Adiantum phillippense</i>	Chakawkte	Adiantaceae	H	Young shoot	A
30.						
31.	<i>Polygonum barbata</i>	Anbawng	Polygonaceae	H	Leaf	A

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Sl.	Scientific name	Local name	Family	Habit	Part used	Status
32.	<i>Melocana babodoides</i>	M autak	Poaceae	T	Young shoot	A
33. A	<i>Arisaema leschenaulti</i>	Telhawng	Araceae	Herb	Rhizome	A
34.	<i>Spilanthes acemella</i>	Ankasa	Asteraceae	Herb	Leaf	A
35.	<i>Centella asiatica</i>	Lambak	Apiaceae	Herb	Leaf	A

FORAGE PLANTS

Many wild plant species are utilized as animal feed; grasses and legumes are the major component. Other forage species are also important, particularly during lean period, when green forage is scarce. The use of plants for fodder, green or dry, is still practiced in the rural areas. Mizoram also represents the repository of genetic resources of forage plant. There are eight plant species which are used as food for pigs belonging to six families and eight genera. (Table VI).

Table VI: Plant used as fodder for Pigs

Sl.	Scientific name	Local name	Family	Habit	Part used	Status
1.	<i>Arisaema leschenaulti</i>	Telhawng	Araceae	Herb	Leaves	F
2.	<i>Bidens pilosa</i>	Vawkpuithal	Asteraceae	Herb	Whole plant	A
3.	<i>Colocasia esculenta</i>	Dawl	Araceae	Herb	Leaves, Rhizome	A
4.	<i>Ipomea batatas</i>	Kawlbahra	Convolvulaceae	Herb	Leaves, Rhizome	A
5.	<i>Manihota esculenta</i>	Pangbal	Euphorbiaceae	Herb	Leaves, Rhizome	A
6.	<i>Mikania micrantha</i>	Japanhlo	Asparagaceae	Herb/ Climber	Leaves	A
7.	<i>Musa spp.</i>	Changel	Musaceae	Tree	Leaves	A
8.	<i>Spilanthes acmella</i>	Ankasa	Asteraceae	Herb	Leaves	A

TIMBER SPECIES AND PLANTS USED FOR FIREWOOD AND CHARCOAL

Love of the tribal people for the forest has been maintaining the greenery in the past because they considered themselves as an integral part of the forest. However, with the rise of consumerism their attitudes is gradually changing and they have started looking at the forest as a source of wealth to sustain their increasingly daily needs and luxuries. They have led to the depletion of forest cover and a disturbance in the ecological balance. Our findings have shown that there are 11 plant species which are used as firewood and charcoal under nine families and nine genera. While 23 plant species are used as timber which belong to 15

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families and 21 genera. (Table VII and VIII). They are outstanding, first economically, as the source of many products essential to society such as industrial raw materials, timber, fuel, food and fodder. Therefore, they are prone to decimation from harvesting. Second, they are prominent environmentally, as forests help to stabilize the environment by fixing carbon dioxide, by preventing soil erosion and by lowering the water level. Third, trees are dominant ecologically as they determine a wealth of interactions with other life forms in the community.

Table VII: Plants used for Firewood and Charcoal

Sl.	Scientific name	Local name	Family	Habit	Status
1.	<i>Adina cordifolia</i>	Lungkhup	Rubiaceae	Tree	F
2.	<i>Albizia procera</i>	Kangtekpa	Mimosaceae	Tree	F
3.	<i>Anogeissus acuminata</i>	Zairum	Combretaceae	Tree	F
4.	<i>Castanopsis tribuloids</i>	Thingsia	Fagaceae	Tree	R
5.	<i>Derris robusta</i>	Thingkha	Fabaceae	Tree	F
6.	<i>Mesua ferrea</i>	Herhse	Guttiferae	Tree	R
7.	<i>Schima wallichii</i>	Khiang	Theaceae	Tree	F
8.	<i>Vitex peduncularis</i>	Thingkhawihlu	Verbenaceae	Tree	F
9.	<i>Albizia odoratissa</i>	Kangteknu	Mimosaceae	Tree	F
10.	<i>Albizia stipulata</i>	Vang	Mimosaceae	Tree	F
11.	<i>Lobelia nicotianaefolia</i>	Berawchal	Lobeliaceae	Tree	R

Table VIII: Timber Species

Sl. No.	Scientific name	Local name	Family	Habit	Status
1.	<i>Aglaiia hiernii</i>	Sahatah	Meliaceae	Tree	F
2.	<i>Anogeissus acuminata</i>	Zairum	Combretaceae	Tree	F
3.	<i>Castanopsis tribuloids</i>	Thingsia	Fagaceae	Tree	R
4.	<i>Dysoxylum alliaria</i>	Thingsaphu	Meliaceae	Tree	F
5.	<i>Gmelina arborea</i>	Thlanvawng	Verbenaceae	Tree	F
6.	<i>Mahonia nepalensis</i>	Pualeng	Berberidaceae	Tree	F
7.	<i>Mesua ferrea</i>	Herhse	Guttiferae	Tree	R
8.	<i>Michelia champala</i>	Ngiau	Magnoliaceae	Tree	R
9.	<i>Schima wallichii</i>	Khiang	Theaceae	Tree	F

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Sl. No.	Scientific name	Local name	Family	Habit	Status
10.	<i>Tectonia grandis</i>	Tlawr/ teak	Verbenaceae	Tree	F
11.	<i>Terminalia myriocarpa</i>	Char	Combretaceae	Tree	F
12.	<i>Vitex peduncularis</i>	Thingkhawilu	Verbenaceae	Tree	R
13.	<i>Acer laevigata</i>	Thingkhim	Auraceae	Tree	F
14.	<i>Artocarpus chama</i>	Tatkawng	Moraceae	Tree	F
15.	<i>Artocarpus lakoocha</i>	Theitat	Moraceae	Tree	F
16.	<i>Chukrasia tabularis</i>	Zawngtei	Meliaceae	Tree	F
17.	<i>Derris robusta</i>	Thingkha	Fabaceae	Tree	F
18.	<i>Duabanga suneratioides</i>	Zuang	Sonaratiaceae	Tree	F
19.	<i>Morus australis</i>	Lungli	Moraceae	Tree	F
20.	<i>Sterospermus colais</i>	Zinghal	Bignoniaceae	Tree	F
21.	<i>Terminalia bellirca</i>	Thingvandawt	Combretaceae	Tree	R
22.	<i>Tetrameles nudiflora</i>	Thingdawl	Tetramelaceae	Tree	F
23.	<i>Xylia xylocarpa</i>	Thinguk	Mimosacea	Tree	R

ABBREVIATIONS USED

EW: Extinct in the wild known only to survive in cultivation/naturalized.

CR: Critically endangered, high risk of extinction in the wild in the immediate future.

EN: Endangered not CR, but very high risk of extinction in the wild in the near future.

VU: Vulnerable not CR or EN, but high risk of extinction in the wild in the medium-term future.

R: Rare; **VR:** very rare; **F:** frequent; **T:** Tree; **S:** Shrub; **H:** Herb; **C:** Climber, **A:** Abundant, **F:** Frequent.

DISCUSSION

It has been shown that through numerous examples that the tribals of Mizoram make wide use of a large variety of plants and fruits available to them. Such activities on one hand contributed to our knowledge of various uses of biodiversity and on the other have resulted in rapid depletion of natural resources. Their demand in the local market has increased causing a threat to these wild species. Such plants too may become the vegetable for the future. Although these wild edible plants' wealth are presently under utilized, to meet future needs, this invaluable treasure of native diversity needs care and more research focus on its collec-

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tion, conservation and use.

With the erosion of the tribal cultures, the traditional healers have become a threatened category. Also the genetic diversity in medicinal plants has diminished due to shifting cultivation and large scale destruction of their natural location. The over exploitation of medicinal resources in unscientific manner by unskilled labour and poor natural or artificial regeneration have resulted in virtual extinction of certain vital species. The demand of medicinal plants is increasing day by day within and outside the country and serious and effective measures are required to meet the challenge. Therefore, there is an urgent need for a local inventory of medicinal plants, to identify the species that merit priority and to formulate strategy for the *in situ* conservation and cultivation of these species.

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