ETHNOBOTANICAL STUDY OF THE *TANGKHUL*-NAGA TRIBE IN UKHRUL DISTRICT, MANIPUR STATE

BY

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DECLARATION

I, **Sumitra Salam**, bearing Registration Number 411/2011 (5th December 2008) hereby, declare that the subject matter of my thesis entitled: "***Ethnobotanical study of the Tangkhul-Naga Tribe in Ukhrul District, Manipur State***" is the record of work done by me, and that the contents of this thesis did not form the basis for award of any degree to me or to anybody else to the best of my knowledge. The thesis has not been submitted by me for any research degree in any other University/Institute.

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ABBREVIATIONS

^{0}C	Degree Celsius
BSI	Botanical Survey of India
cm	Centimeter
ed.	Edition
eg.	Exempli gratia/for example
et al.	And others
etc.	Etcetera
Fig.	Figure
Figs.	Figures
g	Gram
hrs	Hours
i.e.	Exempli gratia/for example
Km	Kilometer
Kg	Kilogram
m	Meter
Mins.	Minute
ml	Milliliter

mm	Millimeter
msl	Mean sea level
N.B.R.I.	National Botanical Research Institute
No.	Number
Nos.	Numbers
Prof.	Professor
Rs	Rupee
Sp., spp.	Species
Vern.	Vernacular
Viz.	Videlicet/namely

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CHAPTER-1

1.1:**ETHNOBOTANY**

Since the beginning of civilization, people have used plants for various purposes such as food, shelter, medicine, clothing, hunting, and religious ceremonies. Although the relationship between plant and man is age –old, it is now recognized as a branch of science. The present day ethnobotanical study begun in 1873 with the work of Stephan Power who used the term "Aboriginal botany", which elucidated the total aboriginal dependence on plants for food and medicine.

The term 'Ethnobotany' was first coined by John W. Harshberger (1895), who was one of the florida's early botanists and described as the study of the interaction between people, plants and culture. The word derives from 'Ethnos' a Greek word, meaning 'Nation'; Ethnos again derives from 'Ethnic', which means a group having a common origin culture or language. In1916, Robbins *et al.,* began to introduce some new theoretical notions and methodologies. Primarily, they noted that ethnobotany is more than collecting plants and procuring native names, but is "Scientific work" worthy of scientific methods of investigation. They suggested that ethnobotanists should strive to explain deep understandings of plant life and plant relationships as perceived by the indigenous peoples.

Jones (1941) defined it as the study of the inter-relations of primitive man and plant. He described man's dependency and co-existence with plants and other fields that concern themselves with similar applications. He laid the groundwork for the future evolution of ethnobotany.

Edward Castetter (1944) in his paper ″The Domain of Ethnobiology″ he further define ethnobiology, which includes ethnobotany and also to set some

guidelines, to encourage researchers to keep certain "factors" in mind when conducting fieldstudies, including plant identification, relative abundance and availability of the plants, Indian names for the plant, purposes of use, season of collection, whether or not the plant is native to the area, the economic value, species not used in the region, and importance of the plant in the economy of the culture.

Faulks (1958) considered the subject of ethnobotany as the relationship between man and vegetation, which meant more than even the scope of economic botany. A decade later, he revised his concept and treated ethnobotany as a unit of an ecological study specializing in the interaction of man and the plant world. Perhaps, "*An introduction to Ethnobotany*" by Faulks (1958) is the first book on ethnobotany which includes most of the entire field of economic botany.

Schultes (1962) interpreted ethnobotany as usually the study of relationships which exist between people of a primitive society and their plant environment. Jain & De (1966) stated, "The relationship between the indigenous people and their plant surroundings forms the subject of ethnobotany".

"Each human population classifies plants through their culture, develops attitudes and beliefs and learns the use of plants, while human behavior has a direct impact on plant communities with which they interact; the plants themselves also impose limitations on humans. These mixtures of interactions are the focus of Ethnobotany" (Ford 1978). Ford felt it was important to modify Jones' definition to accommodate the changes in the field. He concluded that "Ethnobotany is the study of the direct interrelations between humans and plants" (Ford 1978). The addition of the term "direct "permitted the field to acknowledge those who were in continual contact with plants permitting them to classify, in their way, the plants and to generate

cultural rules for manipulating the plants and their local environments. The deletion of the word "primitive" was to allow expansion of the field of study.

Vartak and Gadgil (1980) considered ethnobotany as a branch of economic botany, a section of which deals with the role of plants in the life and culture of aborigines and tribal people. Heiser (1985) defined ethnobotany as the study of plants in relation to people.

Bye (1985) gave a general working definition, that ethnobotany is the investigation between plants and people over evolutionary time and geographical space. Ethnobotany can be defined as 'the total natural and traditional relationship and the interaction between man and his surrounding plants (Jain &Mitra, 1997)

Glimpses of Indian Ethnobotany(Jain, 1981) is the first dealing with Indian ethnobotany. Jain (1987a, 1987b, 1989a) broadly classified the man plant relationship into two groups, viz. (a) Abstract (b) Concrete.

The abstract relationship includes faith in the good or bad powers of plants, taboos, avoidances, sacred plants, worship and folklore. The folklore includes not only fables or verse about, or having references to plants but also similes and metaphors based on plants.

The Concrete relationship includes mainly the material use such as in food, medicine, house building, agricultural operations, other domestic uses, trade, plants in aesthetics, paintings, carvings, house decoration and the act of domestication, conservation, improvement or destruction of plants.

Martin (1995) in his studies (concerning plants) describes local people's interaction withthe natural environment. Ethnobotany is the study of total natural and traditional interrelationships between man and plants and his domesticated animals (Jain 2001).Trivedi (2002) pointed out that a

detailed critical study on ethnobotany of any particular plant, genus, or family are usually a real interdisciplinary work.

Ethnobotany is an interdisciplinary science which includes many interdisciplinary aspects like ethnoagriculture, ethnogastrology, ethnohorticulture, ethnomusicology, ethnotoxicology, ethnopharmacology, ethnogynaecology, ethnopaediatrics, ethnonarcotics, ethnocosmetics, ethnolinguistics, ethnoorthopaedics, ethnophytotaxonomy, etc, and also ethnobotany is divided into many subdisciplines according to subgroups of plant kingdom, like, ethnoalgology, ethnomycology, ethnobryology, ethnopteridology, ethnolichenology, etc ; and special aspect of botany, like classification systems, medicinal uses, paleobotany, ecology, etc. are termed as ethnoecology, ethnomedicobotany, ethnotaxonomy, ethnopaleobotany, respectively. Very distinct demarcation between the scopes of related interdisciplinary subjects is not always possible. Detail discussion on interdisplinary aspects and on different subdisciplines was made by Jain (1986, 1987a, 1987b, 1989a, 2001). However, interdisciplinary approaches essential for ethnobotanical studies can be achieved only through collaborative work involving specialists from different disciplines (Rao, 1989a)

Ethnobotanical Knowledge is not a preserve of men alone. In India, men know more about plants in material culture like food, fibres, shelter and agricultural tools and rites. Taboos, avoidances and myths about plants are known to both men and women. Many women knew about household remedies, but the recognized healers are mostly men.

The importance of ethnobotany researchers mainly Ethno-medicine is keenly felt as it represents one of the best for searching new plants for medicine. The Indian indigenous system of medicine dating back to the Vedic ages (1500-800 BC) have been an integral part of Indian culture (Weiss, 1987). In India alone, three traditional systems of medicine namely Ayurveda,

Siddha and Unani are distinguished. The earliest sanskrit literature like Rigveda and Ayurveda, depictthe drug yielding plants and their application to cure different ailments. Ayurveda the science of life dates back to the days of '*CharakaSamhita'* and '*SushrutaSamhita'* (1200A.D). Thereafter, other system of indigenous medicines like Unani and Siddha gained popularity under the patronage of Muslims and subsequent rulers (Nayak*et al*., 2003). It is estimated that, about 7,500 plants are used in local health traditions in mostly rural and tribal villages of India. Out of these, the real traditional medicinal value of over 5,000 plants is either little known or hitherto unknown to the mainstream population (Pushpangadan, 1995). Some of the earliest plants were aphycotomimetic, hallucinogenic, phycheletic drug evolved plants. Such special usage of plants in ancient times and among the primitive societies particularly caught the impotency of research in modern day medicine (Merlin, 1984; Prance, 1970; Rubin, 1975; Schultes, 1973; and Wasson, 1996). Since time immemorial man has used various parts of plants in the treatment and prevention of many ailments. (Chah*etal*., 2006).

In the last few decades ethnobotany has become an important thrust area of research for the documentation preservation of historical traditional knowledge at tribal level as well as to develop resource management, conservation of biological diversity at genus, species, ecosystem, forest type and regional level. Indigenous Traditional Knowledge (ITK) and Indigenous Botanical knowledge (IBK) are some of the terms used recently for the description of the information with reference to ethnobotanical importance. In this regard, World Health Organisation has started sponsoring several Research Schemes on Traditional Herbal Medicine in almost all the developing countries in the world. In India, Institution like Botanical Survey of India, Central Council of Research in Unani, Central Drug Research Institute, National Botanical Research Institute, Lucknow, Central Institute of Medicinal and Aromatic plants and many other Institutions are deeply engaged in researches in Ethno –Botany. Beginning with study of plants used by tribalsfor

food, medicine and shelter, now it includes studies like conservational practices of tribals, ethno-pharmacology, ethno-pharmacognosy, ethnomusicology, ethno-gynecology etc. Ethnic groups of various regions of the world are the real custodians of nature's wealth and experts in herbal medicine. The indigenous groups posses their own distinct culture, religious rites, food habit and a rich knowledge of traditional medicine (Harsha*et al*., 2001, 2003).The traditional indigenous knowledge transferred orally for centuries is fast disappearing because of the technological developments and changing culture of ethnic groups (Ganasen, *et al*., 2004). Since this traditional medical knowledge slowly diminishes, so it is to be procured and preserved in various form for future generation (Burmol and Naidu, 2007).Jain (1964c) reported that in India there are four major belts rich in ethnobotanical resources which are mainly inhabited by Adivasis and tribals.

A great deal of information about the traditional uses of plants is still intact with the tribal's and ethnobotanical studies assume great importance in enhancing our knowledge about the plants used by tribal communities, the rich diversity assembled by them for their sustenance, different means adopted by them for its preservation and conservation. In Asia about 150 million people reside in forest areas, while the Indian subcontinent is inhabited by over 53 million tribal people belonging to over 550 tribal communities which belong to 227 ethnic groups (Anonymous, 1992).The tribal people or ethnic races throughout the world have their own culture, customs, social and religious rights, taboos, totem, legends, folklore, folk tale, songs, rituals, myths food and medicine practices. Recently, the attention of ethnobotanical research has diverted to North –Eastern region of India because these are dominated by tribals and they are rich in traditional knowledge about the usage of plants for various purposes.

Manipur offers immense scope for ethnobotanical studies since the state is inhabited by different ethnic groups. The region is also one of the Hot-

spots of Biodiversity of the world, where Manipur occupies a unique position as a number of rare and indigenous species are available. (Khosoo, 1994)

Ukhrul district of Manipur is mainly inhabited by *Tangkhul* tribe. Many areas of this region are inhabited by rural people and forest dwellers that more often use an enormous range of wild plants to meet their daily requirements, provide a good scope for ethnobotanical studies. The *Tangkhul* people are well acquainted with their surrounding plants and their potential role to use for different purposes. They utilized forest products for food, fodder, medicine, fuel, gum, agriculture implements, aromatic oils, basketry works, charcoal, decoration, defense equipment, dye, fencing, fishing, furniture, house building, musical instruments, socio-religious, timber, tools, and utensils etc. for their sustenance, daily needs and many other consumer products for self-sustenance. Many rare and indigenous medicinal plants are also available in the district providing immense scope for ethnomedicinal studies. The surroundings plants for this community form an integral part of their culture and the information about plants gets passed on from one generation to other only through the word of mouth. Without proper documentation, these resourceful information and knowledge may be disappeared for ever.

However, recent survey revealed that due to modernization and urbanization, changing of religion towards Christianity by the *Tangkhul*tribe, there is a fast changes in their culture. Besides, the rich forests are also disappearing very fast owing to 'Shifting' cultivation, forest fire, concrete roads, fire wood and other socio-economic activities in the region. An ethnobotanical study of these aspects is basic to an efficient use of the plant resources of this region. Ethnobotanical studies also can help local people define their needs and the importance of plants and forest for their survival, hence practicing sustainable use and conservation of plant resources of the region.

Now a days, due to lack of interest among the younger generation as well as their tendency to migrate to cities to discard their traditional life style, there is possibility of losing this wealth of knowledge as the traditional culture is disappearing. Hence, the ethnobotanical ideas among the *Tangkhul* tribe are depleting day by day. Therefore, in this regard the present study is taken up to record and document ethnobotanical information on the plants used by the *Tangkhul*tribe for different purposes.

1.2: Location and Area

Manipur, one of the eight sisters of the North Eastern Region of India, is a land of blue mountains and green valley's situated on the arm of the Himalaya-the purvachal between 92°58´E to 94°45´E longitudes and 23°50´N to 25°42´N latitudes with a total geographical area of 22,327 sq.km. It is a charming place encircled by nine hill ranges on all sides with a small and beautiful oval shaped valley at the centre. The State is bounded, on the east by Myanmar, on the west by Cachar hills of Assam, on the north by Nagaland, and on the south by Chin Hills of Myanmar and Mizoram. The altitude of the state above the mean sea level varies from 790 metres to 3500 metres. It has sub-tropical temperate climate. The state of Manipur splits up naturally into two tracts viz. the hills and the dales. The hill comprises of five districts namely (i) Senapati (ii) Tamenglong (iii) Churachandpur (iv) Chandel and (v) Ukhrul, while the valley consists of four districts viz. (i) Imphal East (ii) Imphal West (iii) Bishnupur and (iv) Thoubal. The valley areas of Manipur has two constituent parts, one of which is the Imphal valley in the heart of the state and the other is Jiri valley in the west beyond the pale of hill ranges bordering the Cachar District of Assam. Manipur, famous for its fascinating scenic beauty, abundant natural endowments and rich cultural heritage has unique distinction of possessing, unique, diverse and complex forest resources. The natural vegetation of the state is covered about 17,418sq km which is about 78% of the total geographical

area of different types of climatic zones ranging from tropical rain forest to sub-alpine forest. (Anonymous, 2002)

Ukhrul, the present study site is the main homeland of *Tangkhul* tribe. It is one of the 5(five) hill districts of Manipur, located between 23˚13′N and 25˚68′N latitudes and 94˚20′E and 95˚25′E longitudes and covering an altitudinal range of 913 m to 3114 m above MSL. Ukhrul district lies in the east of Manipur and shares about 200 km of international boundary with Myanmar. It covers an area of 4,544 sq km flanked by Myanmar in the east, Nagaland state in the north, Chandel and Senapati districts of Manipur, respectively in the south and west. According to 2011 census, total population of Ukhrul district is 1, 83,115 lakhs.Ukhrul district was formerly a Sub-Division till 1969 under the name Manipur East District and later on it was upgraded to Ukhruldistrict in the same year. Administration of Ukhruldistrict has five Sub-Division and each Sub-division Co-terminus with a tribal Developmentblocks (Census of India, 1991). Sub –Division of Ukhrul district is shown in **Table-1.1.**

Table-1.1: Sub –Division of Ukhrul District

Sl.No.	**Geo-demarcation**	**Sub-DivisionHeadQuater**
1.	Ukhrul Central	Ukhrul
2.	Ukhrul North	Chingai
3.	Ukhrul South	KasomKhullen
4.	KamjongChassad	Kamjong
5.	PhungyarPhaisat	Phungyar

Source: Anonymous (1991) Census of India, Directorate of Census Operation, Govt. of Manipur

The highest peak found in Ukhruldistrict is *Khayangphung* which is 2,835 meters above sea level, but the most well known one is *ShiroiKashung* or*Shiroi* peak which is 2570m. The biggest and the longest river in the State, the Thoubalriver, originate itself from the district, runs through Ukhrul North, and Ukhrul Central Sub-Division. A number of rivers like *Maklang, Tuyeng, Chammu* and *Chingai*rivers run through the district. Ukhrul is the highest hill station in Manipur which has low and cool temperature throughout the season with an annual rainfall of 1224mm.

The beauty and splendor of Ukhruldistrict can hardly be expressed in words unless one physically visits the place. The magnificent mountain ranges and hills are decked with evergreen lustful forest, which provides natural habitat to different species of flora and fauna. Ukhrul district is the best introduced by its beautiful Shiroi lily (*Liliummackliniae*), grown only on the peak of *ShiroiKashung*, which is endemic to the region and considered as the most fabulous wealth of the *Tangkhul.* Some of the known species of plants and trees are *Alnusnepalensis,Prunuscerasoides,Parkiatimoriana,Gmelinaarborea*, etc. besides various *Iris* species, wild roses, and red and white *Rhododendron*species etc.

1.2.1: Drainage

The state has served by many large and small drainage systems. They may be belonging to three drainage systems:

(a) The Barak River System
(b) The Manipur River System
(c) The Chindwin River System

Barak river is the biggest and most important river in the Manipur hills. Barak river drained the western half of the state. It is

originated from northern ranges of the state and follows a south-westerly course. Its important tributaries are jiri, Tipai, Maku, Irang, Leimatak and Maklang.

Manipur river is the longest and represents a dentritic pattern since it has risen from the northern hills of the state and anteceded the uplifted mountains and hills in the southern part by forming a sugnu-hub before it cross. Its main tributaries are Imphal, Iril,Thoubal, Khuga and Chakpi. These tributaries fall into the Loktak Lake.

The Akonglok river and its tributaries the Chingai and Chamu rivers have rised from the Ukhrul hills and it flows towards the north-east and join the river Chindwin in Myanmar. The Chindwin River falls into the river Irrawaddi and finally it emits into the Andaman Sea.

1.2.2: Geology:

In Ukhrul, lime stone of cretaceous age can be well traced. Deposits of chromite containing metallurgical grade ore have been located at Phangrei and ShiroiKashung. Limestone is mainly available in different parts of the Ukhrul district viz., Ukhrul areas, Matakhugai, Gekpao, Lambui. Whole of ShiroiKashong and Phangreirab range near Ukhrul, Hangkoupeak, Zingsui peak are composed of Serpentine rocks. The brine springs are located at Maremphung, Razai, Chalau, Kharasom, etc. and salt is manufactured in the indigenous way from this brine wells.

1.2.3: Soil:

The Soil type found in the study area are of residual soils which may either be laterised (Oxisol) or nonlaterised (Ultisol) formed by the decomposition of the parent rocks present in its

original place. They are mostly yellow to red sandy loams, usually 1.52 to 2.13 meters deep, but much of great depths are found at the bottom of the slopes. This soil is mostly deficient in nitrogen and medium to strong acidity, but it contains fair amount of phosphorus, potassium and plant food ingredients. However, the region is very suitable for the cultivation of different variety of vegetables.

Soils of the terrains occupied by the *Tangkhuls*have suffered serious erosion. Though, the soil are rich in humus, they have low base saturation status and constantly subjected to erosion. These subsequently alter the P^H from moderately to strongly acidic soil.Generally the soils of Ukhruldistrict are moderately low in phosphate content mainly on account of shifting cultivation and unchecked landslides.

1.2.4: Climate:

The district being a part of Manipur experience monsoonic with warm moist summer and cool dry winter. From the mean of three years data, the mean maximum air temperature varied from 22.7^0CApril to 15.1^0C in December and mean minimum temperature varied from 16.9^0Cin July to 6^0C in December. The maximum rainfall was recorded in the month of July (120.50mm) while minimum rainfall was recorded during the month of December (15.58mm).There is a consistent increase in rainfall from January onwards till maximum in July then it gradually decrease till December. The year is divisible into wet period from March to September and cool dry period from November to February. The wet period can be further divided into moist summer (March to May) and rainy season (June to September). March and October constitute transitional months between winter and summer and

rainy and winter seasons respectively. Winter is marked by cold night and warm and windy days. The coldest period is in the month of December with snowfall on the three mountain tops viz., *ShiroiKashong,ChingjuiMatha* and *Kachouphung.* In the long spell of fine weather, March is the happiest month in the year round. Altitude as well as the ecological coverage of the hill slopes plays an important part in maintaining the temperature of the air.

TABLE: 1.2: METEOROLOGICAL DATA FROM APRIL, 2009-MARCH, 2012(STUDY PERIOD)

Month	Max.temp. (°C)	Min.temp. (°C)	Rainfall(mm)
April	22.7	13.2	88.02
May	22.2	14.7	96.76
June	22.1	16.7	110.29
July	21.9	16.9	118.41
August	21.5	16.5	120.50
September	22.1	16.2	117.47
October	21.3	15.0	84.98
November	18.5	10.77	47.34
December	15.1	6.0	15.58
January	17.2	7.5	18.02
February	17.8	8.1	38.37
March	21.7	12.0	72.65

Source: ICAR Research Complex for NEH Region, Manipur Centre,Lamphelpat

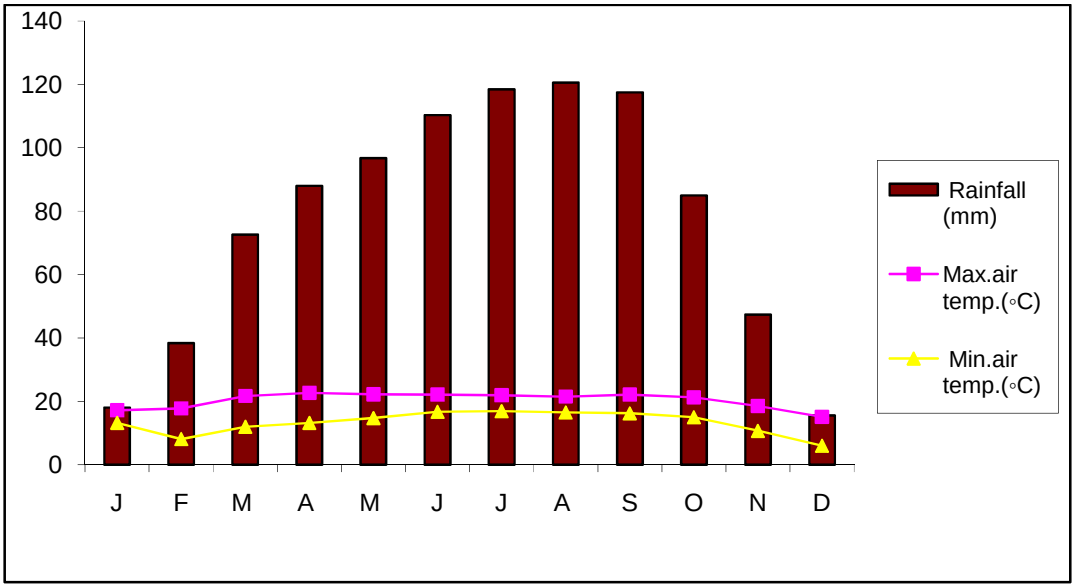

Fig.1.1: Ombrothermic diagram for UkhrulDistrict based on three years data(April, 2009-March, 2012)

1.2.5: Vegetation:

The type of natural vegetations found in the state and their spatial distribution are mostly depend upon the geological structure and relief ,physical and chemical properties of the soil and climatic factors of rainfall and temperature, etc.

Kingdom Ward (1952) reported that "The forest of Manipur are of a mined character, containing plants that are found from the Himalaya to Malaya on the one hand and china on the other". Forest represents the most important natural resource of Manipur covering an area of 15,154 sqkm. Out of the total forest area, tree forest comprises 50%, bamboo forest 22% and open forest 28% contributing a lot of forest products.

The forest types found in the study area are Wet temperate forest, Pine forest, Wet Hill Forest, Semi-evergreen forest, Bamboo brakes and Grass brakes. The hilly region is well marked by thick natural vegetation

of trees, shrubs, herbs and bamboos. Due to increase of conversion to 'Jhum' fields, and also lack of consciousness about the importance of conservation, the natural habitats of many plants have been disturbed. Thus, many plant species are on the verge of extension from several localities of the district.

i. Temperate forests.

These types of forests occur above the elevation of 1600m in the areas like Ukhrul, Chingsaw, Maoching. It is very close to evergreen forests. The height of the tree is more than 20m.The important species are *Quercusglauca,Q.griffithii, Q.lamillosa, Q.serrata, Castanopsistribuloides, Lithocarpusdealbata, Mahonia*spp, *Magnolia* spp,*Machilus*spp,*Rubusellipticus, Rhododendron arboreum, Hedychium*spp, *Impatiens* spp, *polygonum*spp.

ii. Pine forests.

The sub-tropical pine forests are found in the northern –eastern hilly tracts of the state along the Indo-Myanmar border, like the north-eastern part of the Ukhrul and Chandel districts; and in the western hilly tracts along the south-eastern part of the Tamenlong district. It covers upto an altitude of 900-1800m. The rainfall is moderate. The important species are*Pinuskesiya, Quercus*spp,*Castanopsis*spp, *Rhododendron arboreum, Betula*spp,*Alnusnepalensis, Lithocarpusdealbata, Eupatorium adenophorum, Lyoniaovalifolia, Dendrobium*spp, *Vanda* spp, etc., several terrestrial and epiphytic ferns form gregarious patches.

iii. Wet hill forests.

Depending on the multitude of rainfall in these areas, this type of forest is evergreen to semi-evergreen. Different parts of the state upto an altitude of 1000-1800m are covered by these forests. The rainfall is 200-450cm or more per annum. Shrubs and herbs are very rich in these forests. The height of the trees if present is

upto20m.The important plant species are *Toonaciliata*, *Tectonagrandis, Schimawallichii, Pinus*spp,*Quercus*sp,*Prunuscerasoides, Gaultheria* spp,*Rhussemialata, Artemisia* spp,*Urenalobata,etc.*

iv. Semi-evergreen forests.

This type of forest covers over the Barak drainage area of Tamenglong and Churachandpur districts in the Manipur Western hills, where average rainfall is 300-500cm. The species diversity in this type is very rich and confined upto an altitude of 1200m.Trees are lofty with thick canopy, thus the ground in this forest is dark and moist. The important species are *Quercusdealbata*, *Q.griffithii*, *Duabangagrandiflora, Alnusnepalensis, Gmelinaarborea, Phyllanthusemblica, Engelhardtiaspicata, Entadapursaetha,Mangiferaindica,Hedychium*spp, *polygala arillata, Eupatorium adenophorum,Polygonum*spp,etc.

v. Bamboo Brakes

Bamboos usually grow as an understorey to the tree species. Some of the important species are*Arundinariacallosa,Bambusa nana, Cephalostachyumlatifolium*, *Dendrocalamusstrictus,Teinostachyumdullooa*etc

vi. Grass Brakes

This type of forests covers most of the dry hilly areas. The dominant species are *Imperatacylindrica,Cymbopogon*spp,*Commelinabeghalensis, Asplenium*spp,*Astilberivularis,* etc.

The forest which are protected by Manipur forest department have one *In situ* conservation site in the Ukhrul District i.e., Shiroi-hill National park (41.00sq.km)

1.3: ABOUT THE TRIBE

1.3.1: Origin of the*Tangkhuls*

The *Tangkhuls* are one of the largest tribes of Manipur. According to their tradition, they migrated to the present habitat from a place called *'Thaungdut'*(Samshok) which is situated on the west bank of the river Chindwin in Myanmar. Their folk songs alluded to the fact that they had the last migration from *Samshok..* The tradition holds that originally the *Tangkhuls*resolved themselves into many groups. From *Samshok*, the '*Hunphun*' group migrated westward and entered the Manipur valley. The group reached a particular high mountain, called '*Shokvao*' meaning that they called their party with the loudest possible voice so that all of them should gather there. From *Shokvao* they proceeded to a place called '*Mavalung*', now at Ukhrul where they ignited fire from a big stone and distributed among the families and from there the group proceeded to '*Rungatak*' settlement and the centres of their dispersions, where the last dispersal took place. From *Samshok*, a greater group proceeded North westward and settled at '*Makhel*', a historical place in Mao-Maram. From *Makhel*, another group migrated southwards and settled at '*Phungcham'* to which many of the Raphei*Tangkhuls* traced their origin. Another group came from *Makhel* to *Humbum* and was later dispersed in different parts of the land. The villages, Phungcham, Ukhrul andHumbum are the earliest sites of the *Tangkhuls.*

The culture of the *Tangkhul* tribe is very rich. The inherited behaviors and thoughts of their forefathers are passed on to the new generation through oral tradition and day to day practices. These cultures includes food and drinks, dress and ornaments, utensils and furniture, rituals and ceremonies, painting, skull tress, log drum, weaving cloth, superstitious beliefs, wood carving, tattooing and rich traditional knowledge of medicinal plants for cure and relief of various diseases and ailments.

The majority of the villagers are agriculturists. Economically, most of the *Tangkhul*people depend on forest products. They collect trees as timber and also for the supply of firewood and charcoal. They consume roots, rhizome, tubers, leaves, inflorescence, flowers, fruits and other plants parts as food- medicine, drugs, fish - poisoning, timber, household materials, etc.

However, recent survey reveals that due to modernization and urbanization and adoption of Christianity, the culture of the *Tangkhul*tribe undergoes a rapid change. Besides, the rich forests are also disappearing very fast owing to 'Shifting' cultivation, forest fire, concrete roads, fire wood and various other socio-economic development activities in the region.

1.3.2: Religion

Religion was the centre of *Tangkhul* life since all the activities are linked with it. Ventures of any form undertaken by the *Tangkhuls*without performing due religious rites were believed to bring about calamity to the society as a whole. Therefore, religion comes in the forefront and occupies a predominant place in the life of the *Tangkhuls*.

In the earlier days, the *Tangkhuls* had their own religion. They have the concept of god, deity and spirit. There is a supreme god for the *Tangkhuls* which is known to them as *Kameo*. They worship him as the creator of all the creatures. There are different types of deities found among the *Tangkhuls* of Ukhrul district. They are household diety (*Shim kameo*), fire diety (*Mei kameo*), Oath taking deity (*Rihailung*), forest deity (*Ngahongkameo*), village deity (*Ram kameo*), water deity (*Tara kameo*) etc. Regarding the concept of the spirits, the *Tangkhuls* also believed in the existence of the spirits around them who are capable of creating harm to men such as diseases and sickness, calamities and even causing men to death by their supernatural powers. They are called by different names such as *Chipu*(Satan).

The *Tangkhuls* accepted Christianity when Rev.William Pettigrew and his wife Mrs. Alice Pettigrew came with the light of the gospel in 1894. With the coming of Christianity their beliefs, superstitions and religious practices were completely transformed. People started having a new outlook with a new hope in life.

1.3.3: Language and script

The language or medium of communication used in Ukhrul district is the *Tangkhul*dialect. It is one of the five dialects adopted by the Government of Manipur as the medium of instruction in the hill districts of Manipur. The *Tangkhul*language essentially belongs to the Tibeto-Burman group.

1.3.4: Dress and ornaments

The dress of the *Tangkhuls* is very simple, attractive and colourful. There are dresses for different festivities. The dresses determine a man's social status and even mark the season of the year. Every shawl and loin cloth is patterned with beautiful designs and checkered with different colours which have immense cultural significance. There are shawls and loin clothes for every group of people; for the rich, royals, married people, youth, aged, for the poor and even for children. In early days, the male used two types of dress to cover the body i.e*Marao* and *Raokha*and female used a type of skirt called *Kashan*(**Plate-7-D**) made of cotton which is of various kinds that are worn during special occasions and on church service days. It is about 5ft. in length and 3 or 4 ft. in breadth, and it is folded around the waist with the edge tucked in at the side by the hand. There are also various kinds of shawls (*Kachon*) made of cotton for men and women. The most common and important ones for men are *Haora ,Luirim, Thangkang, Raivat, Pheiphir*and for female *Changkhom,Khuirang, Pheiphir, Thingrui*and*Raivat. Haora*and*Luirim* are considered prestigious shawls which are worn only by the prestige groups of the society. *Raivat*and*PheiphirKachon*are common to both men and women. (**Plate-7-B**).The women usually do not wear blouse but wrap it around their

breasts and body tightly with a loose black clothe and cover upto the waist. Dresses for dancing are made of colourful costumes decorated with necklaces, bangles, stockings, or leg rings, waist cloths, head dresses, spear, etc.

The *Tangkhuls* are lovers of ornaments. They love to adorn their bodies with ornaments especially during festivals. Both male and female enjoy wearing necklaces and bangles. Ear-rings are also an important feature of the *Tangkhuls*. Among the important ornaments used by the *Tangkhuls*are*Har*(heavy brass armlet worn by both the sexes) **(Plate-8-B),***Kazao*(bangles) **(Plate-8-A),***Nahui* (metal earrings), *Khongsang* (bead necklace made of different colours, royal necklace of the *Tangkhuls*) **(Plate-8-C),***Huishon* (bronze ornaments of interlaced rings worn by women especially during the festival) , *Khommasim* (ornaments made of black beads & white shells to cover the bosoms worn by the females during special occasions) **(Plate-8-D),***Zething* (iron sceptre used only by the female of *Amei-Achon* status families), *Mayongpasi* (ornamental headgear worn by man during festival marriage made of cane or bamboo splits) and *Vagui* (headgear worn by man during *Thisam*festival) **(Plate-8-F).**

1.3.5: Food and Drink

Rice is the staple food of the *Tangkhuls*. Different varieties of rice are grown and are utilized for daily consumption throughout the year. Some of the rice varieties such as *Changmi, Phaotum*, *Maangmi* etc. are considered to be softer and tastier than the other varieties. The *Tangkhuls* eat meats of all kinds except that of cat and tiger as they believed that they are royal animals. Fish and pork are a great delicacy for the *Tangkhuls*. The traditional staple diet of the poorer *Tangkhuls*are made up of wild leafy vegetables, wild fruits, roots, mushrooms, bamboo shoots and many other natural or cultivated vegetables and crops. The *Tangkhuls* prefer to have boiled food even though the use of oil was known. Oil is substituted by animal fats especially lard. Turmeric is also rarely used. To colour the curry, chilly powder is used instead

of other colouring agents. Chilly or red pepper, garlic, ginger and horse mint etc. are essential elements of daily use. The daily *Tangkhul* meal consists of three varieties i.e., *zat* (rice), *Han* (curry), and *Kasathei*(Chilly). The *Tangkhuls* have their meal twice a day i.e., in the morning and in the evening. Rice beer known as *Zamkhor* is considered a part of daily course of meal. *Khor* and *zam* are the two types of rice beer. Apart from considering it as part of daily food, it is also used as a substitute for tea. However, in some well-to-do families tea, coffee, fruit juice and honey are taken as beverages. The *Tangkhuls* are primarily habituated in taking opium, smoking tobacco and Indian hemp (bhang). Even today many *Tangkhuls* are habituated in smoking cigarettes and bidis.

1.3.6: Music and Dance

The*Tangkhuls*do not have written records of the past. But their traditions, songs, dances and festivals are handed down from generation to generation. Singing of songs were used as means of communication, entertainment, expressing sorrows, happiness, victory and defeat in the war and other important social events. The folk song i.e., the song handed down by the*Tangkhul*forefathers are known as *Haola* in the modern concept. From the varieties of song found among the early *Tangkhuls,* it appears that they were very fond of music and it was one of the most important parts in their lives. There are various kinds of songs, each song used for particular occasions like cultivation, farming, plantation, weeding and harvesting. The traditional musical instruments of the *Tangkhuls*are *Tingteila*(violin), *Sipa* (flute), *Mazui* (harmonica made out of reed), *Talla*(horned instrument), *Phung* (drum), *Sinphung*(type of gong made of brass or bronze with a small cylindrical protrusion at the middle).

Dancing is also another important feature of the *Tangkhuls.* Different types of dances (*Pheichak*) are performed duringthe *Tangkhul* festivals namely *Langanuipheichak* (performed by the village young beauties during

*Luira*festivals), **(Plate-6-D).** *Thisampheichak* (the most beautiful dance of the *Tangkhul* performed for the dead during *Thisam*festival), *Raipheichak*(war dance performed by men with war weapons such as daos, spears and shields with formidable war dresses, howling, shouting and crying ho-ho-for several hours),**(Plate-6-E).** Hence, there is no life of the *Tangkhuls* where there is no music and dance.

1.3.7: Games and Sports

Games were a part of *Tangkhul*culture. If there were any kinds of festivities, different items of game were performed. Some important *Tangkhul*traditional games and sports are wrestling, tug of war, high jump, javelin throw, long jump etc. Wrestling is an important game of the *Tangkhuls*and hence the *Tangkhul* tribe is well – known as 'Wrestler tribe'. This game is played in most of the festivals, between married and unmarried men. The most exciting wrestling was held in the marriage festivities where the wrestlers of the bride challenged the wrestlers of the groom. Tug-of –war or *ThingreiraKhangakhun*is a common game of both men and women, including children. The rope used in this game is a wild creeper called *Thingreira,* because of this the game is called *ThingreiraKhangakhun.*High jump or *Maharkapai*isalso another game of the *Tangkhuls* which is still in practice. This game is for men only and it demands much courage and strength. Javelin throw or *Zeipakaphar*is an individual man's game. It is a sort of practicing spearing. *Raikhangathat* is a mock war game played mostly by energetic young men. Both the parties stand facing each other with a line in between and try to hit each other with bare hand. A few other games of minor importance are *Saotheila* (seeds of *Entada*), Top spinning or *Sao*,hide –and - seek, *lungkhotla*(Knuckles bone)etc. These games are mostly meant for women and children.

1.3.8: Festivals

Most of the *Tangkhul* festivals have their origin in agriculture as the *Tangkhul*s are generally hard working people. So for the *Tangkhul*people, life would be incomplete without festivities. Every festival has got its own specific rituals. Festivals are not only celebrated to mark the joyous occasions but also to remember the dead. Festivals are celebrated by the entire village community together with eating, drinking, singing, dancing and sports items without which no festival is complete and worth the name. All the *Tangkhul*village festivals are celebrated at the behest of the *Awunga* (village chief) who announces the dates and seasons of the festivals by observing the lunar calendar, and he has important role to play in their festivals. Some important *Tangkhul* festivals are discussed below.

1.3.8.1: *Luiraphanit*festival

Luiraphanit is a seed sowing festival of the *Tangkhuls* celebrated in the month of February which marks the beginning of the New Year. *Luira* is 'Field dig' which means tilling of the ground. In the past, it was celebrated for consecutive 12 days but now it is celebrated only for 2or 3 days. The leaf of maharna (*Artemisianilagarica)* was plucked and placed at the village gate during the festival. This genna was observed in order to screen out evil elements like ill luck, sickness, evil spirit etc, from the village. The pork meat along with the best of rice beer known as *khor*in a*Shon*(Gourd jar) is also served to all the visitors during this festival. The most important festive event of *Luiraphanit* is the *Tangkhullaakhangganui* where all unmarried girls after attaining puberty have to participate wearing their short skirt, armlets, bangles, necklace and head –dresses and huge beads of necklace of several rows called *Kongsang* which is the lone cover of the bosom of the girl. The dance is soft and slow in uniform movement of hands and legs rocking the body gracefully according to the tune of their songs. The festival of seed sowing is inaugurated by the village chief and his first legal wife by performing the first sowing of different kinds of seeds of the year in his field

or garden **(Plate-6-C).**The indigenous games and sports including tug of war and wrestling are also organized. Men and Women folks are adorned with traditional ornaments and headgears.

1.3.8.2: *Yarraphanit* festival

Yarraphanit is the youth festival of the *Tangkhuls* which is purely a social festival of boys and girls of the village to celebrate it during the off season of cultivation in the month of April-May. It lasts for three - four days; even for a week. Eating, drinking, singing and sharing of joy and happiness of the youngsters is the character of this festival, free from the interference of parents. The best of rice beer known as *khor* is also served during this festival.

1.3.8.3: *Mangkhapphanit* festival

This is a village festival celebrated at the end of June or the beginning of July. After the process of ploughing and transplantation activities are completed, the village chief declares the date of '*Mankhap*' festival forrest, recreation and rejoicing. It lasts for three-four days and every *Tangkhul* finds time to rest and to be in a festive mood , spending the days in feasting, singing, dancing, and in merry-making. During this festival every family kills their domestic animals like pig, cow, chicken etc. As a sign of joy, every family lights up resonated pine-wood in front of their house. This symbolically shows that from the dark gloomy of busiest days they have now passed over to brighter period of happiness and a brighter future. They pray for a bumper crop and all round prosperity of the society to the almighty god.

1.3.8.4: *Chumphutphanit* festival

Chumphutphanit which is also considered one of major festivals of the *Tangkhuls* is celebrated in joyous thanksgiving exclusively by farmer's wives who are responsible for the management of barn for duration of four days. On this occasion, all menfolk with the exception of very old and baby boys left their respective homes with their weapons like bows and arrows, spears, traps of all kinds, snare etc to enable the housewives to worship "*Ameowo*" in

peace and without menfolk hanging around. During the night, all the married women perform the *Chumpha*ritual by offering meat and drinks to the deity i.e, the goddess of wealth called '*Phunghuiphilava*'. The crabs brought by their husbands are wrapped with specified leavesand kept buried under the paddy as a component of worship by the womenfolk at the time of invocation to *Ameowo* to grant them sufficiency of grains throughout the year. During the festive days working at home and outside is strictly prohibited. Four consecutive nights of entreaty to "*Ameowo*" having taken place, on the fourth day, normally at midnight when the first cock crows, the males are allowed to come home and are welcomed back for happy reunion by the female members of the family with meat and traditional rice beer.

1.3.8.5: *Longraphanit* festival

An annual festival of the longshim called *longra* is celebrated for four days during the month of December, exactly on the seventh day from *Chumpha* festival. *Longra* literally means drinks of the club (Long-club, Ra-liquid). On the first day of *longraphanit,* the bachelors' dormitory will have food with the newcomers who are given a piece of meat to take home with him as an indication of his becoming a member of the *longshim*. This festival is marked as a turning point and the most glorious day in the life of the boy.

1.3.8.6: *Thisamphanit*festival

Another important festival of the *Tangkhuls* is *Thisamphanit* which is celebrated for ten days during the month of January. This is a festival celebrated for the dead for sending off their soul to '*Kazeiram,*' the land of dead with a special arrangement of food items, clothes and other articles for his journey to *kazeiram*. It is believed by the traditional *Tangkhuls* that the spirit of the dead remains in the house for a year and after that it departs on way to '*Kazeiram*' where he meets '*Kokto*'(the god of dead) at the gate where a body clothe must be presented to him to permit him to enter into the *Kazeiram*. If '*Thisam*' is performed in honour of a male, they have to hire a

male who would be clothed and fed with food and drinks representing the dead. He would temporarily be called by the name of the dead and wept upon him as if he were the dead man. If the ceremony is performed in honour of a female, another female is hired to represent the dead. She would also receive the same treatment as is in the case of the male who stands on behalf of the dead male. They are called '*ThilaKaphunga*' and '*Thilakaphunga*' respectively and are highly paid in terms of cash, ornaments and body clothes. The clothes and articles of the dead are thrown outside the village gate, never to be picked up again and bid farewell to the departed soul. On the last day of the festival, the relatives of the dead take a procession at night singing, dancing, howling and march outside the village gate and bid farewell to the departed soul. Some of them stay awake throughout the night. It is said that they can see the departed soul moving towards the east on the way to *kazeiram.* The celebration of *Thisam festival* marks the close of the year. (A.S.W.Sim.2001)

Besides, festivals like *MaranKasa* (Feast of merit) *Thareo*, *MakhoKako*, *KhanaKasu* etc. are celebrated according to the convenience of each villages's festivities.The advent of Christianity had an adverse effect on the *Tangkhul* festivals. However, with the recent development of education and progress of modern civilization, the importance of *Tangkhul*festivals has been revived again. Songs and dance with strong cultural elements has become the main item of communal functions today.

1.3.9: Social life

1.3.9.1: Village system:

Like other tribes, the *Tangkhul*s also live in villages mostly located on top of the hills or on spurs of the hillocks. The villages are well protected and guarded by several defence lines of spikes, bars, stone boulders, even by cliffs of natural defence. The *Tangkhul* village consists of irregularly dispersed collection of houses in which people of one clan which compose the village

huddle together. According to 1991 census, there were as many as 240 villages in the present Ukhrul district, the main homeland of the *Tangkhuls*. The size of the village varies from village to village. Some of the big villages of the *Tangkhuls* are *Hunphun*, *Hundung*,*Chingjarol*, *Tuinem, Phadang, Tolloi*, *Somdal* etc. consisting of some 500 to 800 households each. The smallest villages are such as *Shimphungrim*, *MapaoKhullen*, *Kongkan*, *Sorde*etc. with about 10 to 40 households. The site of the village settlement is divided into blocks called *Tang* according to the number of the clans and each clan occupies one *Tang.*However, at the advent and spread of Christianity, the converts were expelled from the original village site and they formed a new village site called 'Christian compound'. There the converted Christians of different clans lived together as a big Christian family and different Tangs on the basis of clan was no longer respected. Christianity brought about a great change in the settlement pattern of the *Tangkhuls*.

1.3.9.2: House and house construction

The *Tangkhuls*have two types of house namely *Lengchengshim*and*Ngashishim.* Both the houses are well marked and distinguishable from each other by the very nature of design and its occupant. *Lengchengshim* is usually roofed with wooden panicles whereas in *Ngashishim,*it is roofed with thatch**(Plate-5-A).**The distinguishable features of *Lengchengshim* is the arch thick plank protruding above like a horn known as *Lengchengshim* and a broad wooden front post with engraved symbols of human heads, buffalo heads etc. which are nicely gouged by an expert hand according to the custom.

The traditional *Tangkhul* house consists of three rooms namely *Yangkhup* (first room), Kitchen (Second room) and *Pongrun*(third room).The first room or *Yangkhup* is the room where the livestock namely, pig, fowl etc spends the night. It is also the room where the *Tangkhuls* pound paddy in a

wooden mortar called *Shimkhur*. *Sukui*(Wooden pestle), *Yamkok* (winnower) etc. are also kept here.

The second room being the kitchen, hearth stands at the opposite far end corner from the first room well marked by a protrusion of mud ring to check the spread of ash, with a tripod of stones called *Meithalung* set firmly in the middle to furnish support for the cooking pots, and above it, a square shape bamboo sieve hangs down from the roof for drying purposes. Also under the roof there are lots of hunting and fishing implements which make the kitchen more cosy and warm. The third room or *pongrun* is the room where rice beer is stored. But at present almost all the houses in the villages are constructed of wooden walls, wooden floors, wooden pillars and roofs covered with aluminum sheets. Kitchen is always constructed separately and a dining table called *Liphan*is a common article in every kitchen**.**

1.3.9.3: Family

Family is the basic unit in the social organization of the *Tangkhuls*. There are slight variations in the composition of families. Among the western and northern *Tangkhuls,* a family consists of married couple and their children . In these two *Tangkhul*groups, the parents, brothers and sisters of the married son hardly live together with him and his family. The moment the eldest son marries, either, the family members vacate the house in favour of him and his wife, or immediately the married couple establishes a new house of their own. Among the eastern and southern *Tangkhul*s, a family consists of husband and wife and their unmarried children. If the husband happens to be the eldest son of the family, by any means, he cannot leave the house. He has to live with his wife maintaining the house. Taking care of the parents and the unmarried members of family rests on him. If he shirks his responsibility, he is frowned upon by the village community and soon he has to appear before the elders of his clan to discipline him and to reform his manners and take the responsibilities as the eldest son of the house.

1.3.9.4: Nature of family

Tangkhuls are strictly patriarchal by nature. The father is the head of the family and has to maintain the house in order. He is to provide the family needs, protect it, take care of the welfare of the house, performing religious rites, ceremonies and worship in front of the family altar. He is responsible for the marriage of his sons and daughters and for the construction of the house of his married sons. The whole members of the household have to make obeisance to the head of the house. Disobedient and delinquent children are brought before the elders of the clan and are publicly admonished. If they remain stubborn, punishments are made by the customary law of the village.

1.3.9.5: Clan

In earlier days, a *Tangkhul*family lived in the land of the clan called *Tang* of the village. Several families of blood relation form a clan called *Shang*. In *Tangkhul*society, a clan is strictly exogamous. Marriage within the clan is prohibited by custom and religion of the*Tangkhuls*. Naturally, the founder of the clan becomes the head of it, and by the law of primogeniture, the eldest surviving son succeeds the father. If there is no male issue, the headship goes to the eldest surviving brother. After him, it goes to his eldest surviving brother and so on. Therefore, the people of a clan are called *Shangnao*which means clansmen. Therefore, the role of the clan is great and important both in the clan and village administration. He is respected for the prestigious post he holds in the village.

1.3.9.6: Marriage

Marriage is a social institution for the *Tangkhul* society. Child marriage is never heard of and widow re-marriages are common practices in the *Tangkhul* society. Most of the marriage of the *Tangkhuls* is not of arranged

marriage but of love marriage. Marriage is only performed when both the partners attain maturity. Marriageable age of a girl is between 23 to 30 years of age and for a boy 25 years and above.

The *Tangkhuls*are exogamous by nature and so marriage within the clan is forbidden. Cross-cousin is also forbidden by the customary law of the *Tangkhuls*. Monogamy is the standard of marriage in*Tangkhul* society which is the manifestation of strict standard of moral principle of the people. Before the advent of Christianity in *Tangkhul* region, there were a few cases of polygamy among some village chiefs and rich people. But polygamy is decried due to the heavy expenditure incurred in the marriage of a person. Polygamy is never mentioned in the lips of the *Tangkhuls*.

There is no dowry system in the marriage of the*Tangkhuls* but there is a demand of a few cattle heads, daos, spear, iron etc. by the parents of the girl from the family of the boys just to compensate the loss of service by the departure of the girl from the family by her marriage. In arranged marriage, some elders of the boy's clan usually go in the night to the residence of the girl for engagement. Both the parties finalize the traditional way of marriage(in full traditional dress with costly traditional necklace called *Khongsang*). Once the girl is married, she goes to join the family of the husband. By custom and culture of the *Tangkhuls* the couple cannot divorce whatsoever hardship may come in their lives. But under dire consequences like adultery on either party or barrenness of the woman, the case of divorce is sanctioned by the *Hangva* and the society accepts it. Widow remarriage is sanctioned by the custom of the *Tangkhuls* either to the brother of the deceased or any other, provided the marriage is based on the principle of exogamy. Today, the traditional way of marriage is replaced by the Christian way of marriage.

1.3.9.7: Child birth ceremonies

In the *Tangkhul* society, there is no special ritual performed during the child birth period. Young mothers and pregnant women used to take pre-natal

instruction from the indigenous midwife known as '*Khanongva*' during the period of pregnancy.

To mark the birth of a baby in the family, a branch of a certain tree is kept just at the entrance of the house. As it was taboo to enter the house known as '*Shimkashar,'* no passer- by would enter the house except the immediate family members and nearest relatives like the mother and sisters of the woman. At the time of childbirth the mother-in-law, the woman's own mother and the '*Khanongva'* were to help. After the successful delivery, the umbilical cord was cut with sharp bamboo splinter and then wrapped with a clean piece of cloth and buried inside the house and a small amulet was given to the child in order to protect it from harm and from evil spirits. It was believed that while burying the naval cord, the wrapping cloth and the place to be buried must be clean and dry, and the cord side must be kept upward, otherwise the women would conceive no more. Also if special care were not taken while burying the cord, the children of the family might not live long.

After birth, the child was washed with warm water and then the first food taken by the newly born infant was rice, chewed by the family, as an act which seems to constitute an acknowledgement of his paternity and duty towards it, as well as to create a semi-physical bond between the father and the child. In some villages, the husband may not go out of the village after the birth of a child for six days, if the child be a boy, and for five days when the child was a girl. Also the mother of the child was made to sweat profusely by being wrapped in a blanket which had been dipped in hot water. This was repeated two or three times and on the third day the mother felt relieved from her pain on the sixth day in case of a boy and on the fifth day in case of a girl. On the seventh day, when the mother was supposed to leave her bed for the first time, the maternal uncle or grandfather of the baby brought a big fat chicken, preferably a cock called '*Naoya*'to the baby. The chicken was then killed and cooked. The meat was then distributed among the relatives and neighbours.

1.3.9.8: Naming ceremony

Naming ceremony is also another important ceremony in the life of the *Tangkhuls*. In the past, it is allowed only for those children of the village chief and clan elders to celebrate the naming ceremony with great prompt and show. But nowadays, it can take place for any individual. Generally, the name is given by their clan elders. In some areas, it is also common among the *Tangkhuls*to give names according to season, month or situation at the time of birth. It is the usual practice, in the past, to name the new member on the *Naokatun* day i.e. on the fifth day from birth for female and sixth day for male. The *Tangkhuls* believed that nameless child attracts the envious eye of *Kameo* (Deity) who is always more malevolent than benevolent by nature. On the naming day, a cock is usually killed. While giving a name, if the child continues to cry, it is considered that the name does not suit the child. So a new name is given.

1.3.9.9: Ear piercing ceremony (*Nashutphanit*)

Ear piercing or *Nashutphanit* is one of the most important events before the advent of Christianity among the *Tangkhul*tribe. It is often held after the harvest in the month of December. The parents make offering to Ameowo to grant their children health, strength and longevity. A few wealthier parents also kill a fatten calf or a pig on this occasion and the cooked meat is taken along with sticky rice. Locally brewed rice beer is also made compulsory. Both men and women drink eats, dance and sing after ritualistic offerings. Piercing ceremony has been completely wiped out with the coming of Christianity and it is no longer practiced.

1.3.10: Economic life:

1.3.10.1: Agriculture:

Agriculture is the main occupation of the people of Ukhrul district, and plays a vital role in uplifting the economy of the district. The largest

agricultural product of the district is rice. Rice is the staple food of the *Tangkhuls*but other crops like maize, millet and Job's tears are taken as subsidiary food in the absence of rice. Since time immemorial, both terrace and jhum cultivation is practiced by the *Tangkhuls*. Terrace cultivation is mainly practiced in the north, western and central regions and jhum cultivation is extensively practiced in the south and eastern region of Ukhrul district. Vegetables such as beans, peas, pulse, yam, taro, potato, tomato, pumpkin, cucumber, etc are also grown in plenty. They are used both for human and animal consumption. Ginger, onion, pumpkin, cucumber, tobacco and other vegetables are grown both in the field and homestead**. (Plate-3 &4).**

The agricultural implements widely used are hoes, spades, daos, axes and sickles. Spades and hoes of bigger size are used for terrace cultivation; daos, axes, hoes of small size are used for clearing the jungle for shifting cultivation **(Plate-30-B).**The village blacksmith make all the agricultural implements.

In the past, the *Tangkhuls*did notpractice horticulture as such but today, however with modern education, development of road and communication and better transport facilities, emphasis is given in growing fruits and other cash crops for local consumption as well as commercial purposes. Horticulture of banana, orange, lemon, plum, pears and even coffee and tea plantations are coming up fast. All these are private and individual enterprises.

1.3.10.2: Livestock

The *Tangkhuls* are fond of meat and they eat almost all kinds of meats. Therefore, rearing of animals like cattle, pig, mithuns, dogs, cats and poultry etc. are an important occupation other than agriculture. Rearing animals serves to supplement their diet and also for commercial purposes. Therefore, every family has to rear their own livestock.

1.3.10.3: Weaving

Weaving is one of the most important occupations which come next to agriculture in *Tangkhul*society. It contributes to the immense improvement of the village economy. Today, a great majority of the womenfolk have taken to weaving as part-time profession at home or at society's sheds. Expert weavers were from the western side of Ukhrul and the finest clothes were produced by the western villages of *Talui, Somdal, Phalee,Teinem, Sirarakhong and Tushar.* Mostly, they weave loin clothes for both men and women, shawls, skirts in varying sizes and patterns, waistcoats etc. Weaving is preferably done in the interval of field works, e.g., immediately after ploughing the terrace-field and clearing the forest of jhum on one hand, and before the advent of transplantation and sowing seeds on the other. The women folk still use indigenous dyes to dye the yarns into quite a number of fast colours mostly made out of tree bark or roots or fruits. The most important *Tangkhul* clothes are *Leirum*(worn by old aged people), *Haora* (worn by unmarried males),*Thangan* (worn by clan chiefs), *Changkhom* (worn by women, unmarried boys and girls) etc **(Plate- 7-C).** They are speckled with white, black, red and green colours. A small percentage of the clothes are sold to outside market by which the weavers earn handsome money. Moreover, clothes woven in loin loom are superior and people prefer them although they pay higher price. In early days, clothes were made of cotton yarns of both country made and imported from outside. However, now-a-days, they are made of wool only. The use of cotton in this respect is very insignificant.

1.4: Aims and Objectives

1. To explore the indigenous knowledge of Ethnobotany of *Tangkhul*tribe.

2. Full data on the *Tangkhul* tribe will be collected based on published and unpublished literature.

3. Seasonal field trips of the Ukhrul districts will be done to obtain detailed ethnobotanical information of the *Tangkhul*tribe with vegetation pattern and floristic composition.

4. Identification of the collected plant specimens will also be done with the help of flora works, literature, Herbarium of Department of Botany, NagalandUniversity., Herbarium of Department of Life Sciences, Manipur University and also from the Botanical Survey of India (BSI), Eastern circle, Shillong.

CHAPTER-II

2.1: Review of literature

Ethnobotany is a rapidly expanding science mainly because of the search of potentially new medicines and economic plants, and the need for conservation and utilization of plant resources found in tribal areas for socio-economic development. Ethnobotany deals with studies among the tribal and rural people for recording their unique knowledge about plant wealth and for search of new resources of herbal drugs, edible plants and other aspect of plants.

Ethnobotany literature has been growing rapidly over the last hundred years. There are several journals, bulletin, magazines, and newspapers like Ethnology, Folklore, Asian folklore studies, journal of Ethnobiology, journal of Economic and Taxonomic Botany, Bulletin of Medico-Ethno-Botanical researches and others engaged in various aspects of Ethnobotany.

The well-known ethnobotanist of the world, Dr. Richard Evan Schultes conducted ethnobotanical explorations Oklahama, Oaxaca, Mexico Amazon and in other regions. He worked on hallucinogens, medicinal and toxic plants (Schultes 1938,1954,1956,1962 and 1963). Berlin *et al*., (1974) collected and documented many hundreds of folk botanical categories during his field survey in Chiapas, a state of southern Mexico; Anderson (1985) investigated ethnobotany of Akha tribes of Thailand and reported 121 plant species and the medicinal use or uses attributed to them. Bhat *et al.,* (1990) have reported 52 plants species collected during ethnobotanical survey of Kwara State, Central Nigeria. Ethnobotanical information on 71 plants from Tharu tribe of Chitwan District, and 86 plant species from Makawanpur District of Nepal were reported by Dangoi & Gurung (1991) and Bhattarai (1990), respectively. Joshi & Edington (1990) also reported medicinal plants

of central region of Nepal. Mahunnah (1991) has investigated 44 medicinal plants, used by the Hehe and Safawa tribes, inhabiting the southern highlands of Tanzania. Yang *et al., (*1992) compiled ethnobotanical information on the 157 species of cucurbits in China.

A few world compilations on useful plants are by Clute (1943); Brierly (1976); Anderson (1979, 1986); Kimber (1978); Kunkel (1984); Brownring (1985); Burkill (1935) for Malaya; Pavlon (1942) and Saunders (1934). There are many important books covering all aspects of ethnobotany Faulks (1958); Ford (1978); Berlin (1992); Schultes and Reis (1995); Martin (1995); Cotton (1996).

In **India,** there is tremendous scope for study of literature for ethnobotanical purposes because of the vast heritage of Vedic literature which dates back to 2000-1000 B.C. The two epics—The Ramayana and the Mahabharatha, which were originally written in Sanskrit language also have mention of numerous plant names and their role in the life of people in those days. Sarmah (1968-69) has listed about 248 botanical drugs from Atherveda and Rigveda itself. Similarly Singh and Chunekar (1972) have published a full glossary of medicinal plants included in the ancient classical works of *Charak Samhita*, *Sushruta Samhita* and *Astanga Hridiyam.* Some worth mentioning illustrious books covering all aspects of ethnobotany are also there such as 'Dictionary of Economic Plants' by watt (1898); 'Medicinal Plants of India and Pakistan' by Dastur (1952); Manohar (1994); Saklani and jain (1994); Joshi (1995); Rao *et al.,* (1996); Jain and Mudgal (1999); 'Indian Medicinal Plants' by Kirtikar and Basu (1935); 'Glossary of Indian Medicinal plants' by Chopra *et al*., (1956) and its supplement Chopra *et al*., (1969) etc. All these works dealt elaborately about the uses of plants and more recently researches on ethnobotany have been given due importance by a number of workers.

Ethnobotanical studies in India in modern lines started before the term was coined with collection of information by G.watt (1889-1896) in

connection with compilation of his dictionary, about a century ago. Heines (1910) work of peoples association with plants, Russel and Hiralal (1916), Bodding (1927), further enhance the preparatory framework of modern ethnobotany by way of his contributions in different cultural aspects of the Santals for a very long period. But it received dynamic intensity in a planned and organized way in India about a quarter of a century ago when jain (1963a, 1963b, 1965a,) in 1960 started intensive fieldworks among the tribals of central India. Since then he has been working with his associates in Botanical Survey of India. This created increasing interest in Universities and other Institution in different parts of the country. They have recorded about two thousands plants used as medicines, food, fodder, fibre fuel, for house building, musical instruments, oilseeds, beverage, and for magico-religious purposes. Mudgal (1987) gave a synoptic treatment on ethnobotanical works in India. Binu *et al.,* (1992) compiled an outline of ethnobotanical work carried out in India.

Many research works have also been done in ethnobotanical studies in certain states and districts of India; Banerjee (1977) studied the ethnobotany in Araku valley in Visakhapatnam; Hemadri *et al*.,(1987) reported 211 species of medicinal plants from Andhra Pradesh, Reddy et al., (1989) reported 64 plant drugs from Chitoor district, Tarafdar (1983a, b) reported the plant species used for gynaecological problems and fertility by different tribes of Bihar, Jain (1989) recorded 21 plant species used under various ailments by the tribals in the Saranda forest in Bihar, Shah *et al*., (1981) reported 133 plant species used by tribals in Saurashtra in Gujarat, Joshi (1988) provided information on 139 plants of medicinal value from Gujarat, Jain (1984) studied ethnobotany of Morni and Kabsar hills in Ambala District, Haryana, and he reported 26 plant species used as medicine, Sharma & Rana (2000) recorded 27 medicinal plants from Himachal hills, Singh (2000) reported 109 ethnobotanical important plants from North-Western Himalayas; Pandey *et al.,* (2000) reported 17 gymnospermic medicinal plants

from Kumaun Himalaya; Savitri & Bhalla (2007) studied about the foods and beverages of Himachal Pradesh; Kapur and Nanda (1992) reported 126 medicinal plants used by the tribal of Bhaderwah hills of Jammu; Rajasab & Isaq (2004) reported 51 wild edible plants from North–Karnataka; Manilal (1981) reported 26 varieties of rice used by tribals in Malabar ; Pushpangadan and Atal (1984) reported 79 plants species used by seven primitive tribals living in the highlands of Western Ghats in Kerela; Jain (1992) recorded ethnomedicinal plants used by Sahariya tribe, in Madhya Pradesh; Jain (1963a) enumerated 50 common plants of the state; Jain (1965a) reported 101 medicinal plants used by the tribals of Bastar district, Madhya Pradesh; Malhotra and Moorthy (1973) recorded 126 useful as well as medicinal plants from Chandrapur District, Maharashtra; Vartak (1981) recorded 120 wild edible species from the hilly regions of Maharashtra and Gao; Brahmam & Saxena (1990) recorded 200 medicinal plant species from Orissa; Rai Chaudhuri *et al.,* (1975) reported 38 plants species with ethnobotanical uses from Orissa; Saxena and Dutta (1975) recorded 82 plant species used as medicine for antifertility, fibre and food by the rural folk of Orissa ; Koelz (1979) studied ethnobotany of Lahul in Punjab; Lal & Lata (1980) providing information on plants used to regulate fertility by Bhat community in Punjab; Singh & Pandey (1982) studied medicinal plantlore of the tribals of Eastern Rajasthan; Katewa & Arora (1997) reported some medicinal plants from Udaipur District, Rajasthan; Singh & Pandey (1998) published a complete account on the ethnobotany of Rajasthan; Anandan and Veluchamy (1986) studied folk medicine of North Arcot District, Tamil Nadu; Viswanathan (1989) studied ethnobotany of the Malayalis in the Yelagiri Hills of North Arcot District, Tamil Nadu; Shaw & Joshi (1971) studied ethnobotany of Kumaon region, Uttar Pradesh; Saxena & Vyas (1981) reported 60 medicinal plants used by the people of Dhasal valley, Uttar Pradesh; Maheshwari & Singh (1984) gave an ethnobotanical account of Bhoxa tribe of Bijnor and Pauri in Garhwal district, Uttar Pradesh; Singh & Maheshwari (1990) reported plant species used by Tharus of Nainital district; Dixit *et al*., (1978)

documented ferns of edible and medicinal value used by tribals of Darjeeling, West Bengal; Ghosh (1986) gave an ethnobotanical account of Cooch Behar, West Bengal; Pal & jain (1989) reported plants used in different herbal remedies of Lodha tribe in Midnapur District, West Bengal; Sangal (1971) gave an account of forest food of the tribal population in Andaman and Nicobar Islands.

A large number of reports and publications on several ethnomedicinal plants, Bio-folklores and various other aspects has been published emphasizing the country as a whole viz. Drury (1873); Bhargava (1959); Jain (1962, 1963 a, b & C, 1965a); Gupta *et al*., (1963); Maheshwari *et al*., (1965); Jain *et al.,* (1973); Singh *et al*., (1978); Chaudhury *et al.,* (1982); Tarafdar (1983a & b, 1984a & b); Shah & Gopal (1984); Paul *et al*., (1985); Das & Mishra (1987, 1988); Namhata & Mukherjee (1988); Jain (1991); Siroli (1991); Namhata & Ghosh (1993); Kulkarni & kumbhojkar (1993); Arora (1995, 1997); Mohanty *et al*., (1996); Singh & Pandey (1996); Ghosh & Maity (1996); Rao & Henry (1996); Balasubramaniam & Prasad (1996); Barua, *et al.,* (1999); Choudhury *et al.,* (1999); Goel & Rajendra (1999); Begum & Nath (2000); Maheshwari (2000); Sudhakar & Vedavathy (2000); Chaudhari *et al*., (2002); Chakraborty *et al*., (2003); Kumar (2003); Tag *et al.,* (2004); Ahmed *et al.,* (2005); Singh & Narain (2010).

In **North-East states**, in spite of the rich ethnobotanical resources, only few contributions have been made from this region. Deb(1986), made an assessment of economic and medicinal plants in Tripura; Arora (1991) reported about 300 plants used by different tribes of northeastern states; Borthakur (1976, 1981 a and b) reported on medicinal plants and certain plants in folklore and folk –life of karbi (Mikir) of Assam; Bhattacharjee et al., (1980) reported on folklore medicine from district Kampur, Assam; Boissya & Majumdar (1980) gave an account of folklore claims from Brahmaputra Valley, Assam; Hajra & Boissya (1981) gave an account of ethnobotanical

notes on the Miris (Mishing) of Assam plains; Gogoi & Borthakur (1991) reported on plants in religio-cultural beliefs of the Tai Khamtis of Assam; Mahanta & Gogoi (1988) surveyed on ethnobotanical studies in Assam; Dam & Hajra (1981) reported on plants used in various ways by the Monpas tribe of Kameng district, Arunachal Pradesh; Pal (1984) carried out ethnobotanical study of the tribal of subansiri, Arunachal Pradesh; Nath & Bordoloi (1989) gave an account of medicinal folklore of Tirap district; Haridasan et al., (1990) studied the ethnobotany of wild edible plants; Rao & Neogi (1980) studied the ethnobotany of Khasi and Garo tribes, Meghalaya; Joseph & Kharkonger (1981) reported on plants used in medicine, food, agricultural implements, musical instruments, religious ceremonies, folklore medicines by the khasi and jaintia tribes in Meghalaya; Rao (1989) investigated 30 interesting herbal medicines used by the Garo tribes in the state; Chhetri et al., (1992), documented 33 plant species employed by the Khasis, Jaintias and Garos for ichthyotoxi purposes; Hajra (1991) described about the nature conservation of khasi folk beliefs and taboos; Rao and Jamir (1982, a, b) reported on medicinal plants used by the Nagas, Nagaland; Megoneitso & Rao (1983) reported medicinal plant species used by the Angamis of Kohima District, Nagaland; Rao & Jamir (1990) recorded the ethnobotany of the Ao and Angamis Nagas; Lallianthanga (1990) reported 128 plant species with local medicinal uses, Mizoram; Lalranmnghinglova (1992) reported food plants, fruit plants and medicinal plants with respective uses, Mizoram; Bennet (1983) carried out ethnobotanical studies in Sikkim.

Many several publications appeared on ethnobotany of Northeastern India viz., Singh & Arora (1978); Majumdar *et al.,* (1978); Rao (1979); Tiwari *et al.,* (1979, 1984, 2009); Boissya *et al*., (1981); Thothathri & pal (1987); Baruah & Sharma (1987); Jamir (1987, 1990, 1997); Pandey *et al.,* (1990); Mahanti (1994); Borthakur & Goswami (1995); Borthakur (1996 a, b); Lalranmnghinglova (1996); Borthakur *et al*., (1996,1998 a & b); Hajra (1997); Rawat *et al*., (1997, 1998); Lalranmnghinglova & Jha (1997, 1999); Singh *et al.,*

(1997, 1999); Das (1997, 2001); Thomas *et al*., (1998); Bora (1999); Samati (2004); Jamir and Lal, (2005); Chhetri (2005); Dutta & Dutta (2005);Tag *et al*.(2005); Chaturvedi and Jamir (2007); Kayang (2007); Mao & Odyuo (2007); Singh *et al*., (2007); Savitri & Bhalla (2007); Kar & Borthakur (2007, 2008a,b); Jamir *et al.,* (2010); Basak *et al*., (2010); Sharma & Sharma (2010); Deka & Sarma (2010); Chakraborty *et al.,* (2010); Das *et al.,* (2010); Renchumi *et al*., (2011); Lalranmnghinglova (2011); Jamir *et al.,* (2011); Kilangnaro & Jamir (2011).

In **Manipur**, Sinha (1987) was the pioneer in the field of ethnobotanical study and he reported 667 plant species used in various ways by the people of Manipur. Singh (1987) reported 523 ethnobotanically important plant species from Tengnoupal district, Manipur. Singh *et al*., (1988) reported on the wild edible plants found in the markets of Manipur. Singh *et al.,* (1996) published a paper about the indigenous biofolklore and practice and its role in biodiversity conservation in Manipur. Singh *et al.,* (1992) reported 51 medicinal plant species used to treat various diseases and ailments. Mao (1993) described 71 wild edible plants used by Mao Naga tribe of Manipur. Sinha (1996) published a book entitled 'Medicinal plants of Manipur'. Sharma *et al.*, (2000 a) reported 66 edible fruit plants of Manipur. Singh *et al.,* (2000) reported 25 medicinal plants used to enhance vocalism by the traditional Meitei singer of Manipur. Singh *et al.,* (2001) studied wild edible aquatic plants of Manipur valley and reported 31 wild plant used by the Manipuris.

Subsequently a number of good papers have been published in the recent years emphasizing on various aspects of ethnobotanical works in Manipur. Singh & Singh (1996); Singh *et al*.,(1999); Elangbam (2002); Singh & Singh (2003a); Sharma *et al*., (2005); Khan (2005); Singh & Singh (2006); Romeo & Gupta (2007); Ahmed & Singh (2007); Meitei & Singh (2007); Khomdram *et al.,* (2009, 2011); Romila *et al.,* (2010); Devi *et al.,* (2011b); Khan & Yadava (2010); Yumnam & Tripathi (2012); Reshma *et al.,* (2012); Devi *et al.,* (2012); Padmabati *et al.,* (2012);Pinokiyo *et al.,* (2012).

Nothing is known except a very few publication have also been contributed on ethnobotanical studies from the Ukhrul district of Manipur. Sinha (1987) reported 70 plant species with medicinal uses; Elangbam *et al.,* (1989) reported 36 plants species with ethnobotanical uses; Hopson (2006)reported 30 plant species with medicinal uses; Devi (2008) reported 33 plant species as food and 14 with medicinal uses; Salam *et al.,* (2009, 2010, 2011a, b, 2012a, b) recently carried out ethnobotanical studies in Ukhrul district.

CHAPTER-III

METHODOLOGY

3.1: SURVEY OF FIELD WORK

The extensive and intensive field work was undertaken during 2008-2012 throughout the district to collect ethnobotanical information on the plants used by the *Tangkhul* community for different purposes. Every attempt has been made to gather information on plant species or their parts/products found useful for local people with reference to medicine, food, fibre, houses, huts, dyes, tools and implements, etc. The study area was divided into five subdivision i.e., Ukhrul Central, Ukhrul North, Ukhrul South, Kamjong Chassad, Phungyar Phaisat. In course of the exploration, fifty-six villages under the five subdivisions were visited staying one or two days in each village. Sometimes several weeks were spent among them in each subdivision of study area and a close study of the uses and names of plants were made in the field. On reaching a village or locality, rapport with some local inhabitants, village head, old women, social-workers, school teacher and practitioners of folk medicine were established and their suggestion and advice were taken into consideration. In every survey, the site location was noted with the help of GPS for its longitude and latitude. The fifty-six villages or sites selected for the present study in Ukhrul district are given in the **(Table: 3.1) & (Fig. 3.1)**

Frequent survey programmes were conducted regularly in all the season to collect maximum information regarding the usage of plants among the *Tangkhul* tribe. Field studies, including the collection of information through folk, oral tradition, etc. and voucher specimens was initiated by adopting the methodologists proposed by different investigators (Jones 1941); (Schultes 1960,1962,1963); Von Reis (1962); Jain (1964a,1967 ,1987,

1989a, 1991, 1997); Alcorn (1984); Rao & Hajra (1987); Martin (1995) and Jain & Mudgal (1999). Data, maps and relevant details of the study site were supplied by Forest Department (Manipur), Department of Earth Sciences (Manipur University) and Census Department (Manipur).

Collection of the plants was made in a proper way without disturbing the natural habitat of the plant. Efforts were made to collect the plant specimens with their reproductive parts. Photographs were also taken for each and every plant materials. The information on the uses of the plants were collected from the local people as well as noted down in a field note book as observed in the field. Mostly, live specimens were collected for making herbarium.

The collected plant materials were used to prepare herbarium specimen according to conventional techniques (Jain & Rao, 1977). Specimens were pressed in between old newspaper sheets in such a way that inflorescence and upper and lower surfaces are exposed clearly to display maximum characters. The newspapers were changed daily depending upon the time taken for drying.

The dried and pressed specimens were poisoned with the saturated solution of mercuric chloride dissolved in absolute alcohol and mounted on standard herbarium sheets size (42 × 28) cm by using both glue and threads. Mounted specimens have been deposited in the herbarium of the Department of Botany, Nagaland University, Headquarters: Lumami.

The authentic identification of the plants were done with the help of the available floristic literature such as Flora of British India vol.1-7(Hooker,1872-1897); Flora of Assam, vol.1-5 (Kanjilal *et al*.,1934-1940); Flora of Tripura State, Vol. I & II (Deb, 1981-1983); Flora of Manipur, vol.I (Singh *et al.,* 2000); Assam's flora (Chowdhury, the herbarium preserved at BSI, Eastern Circle, Shillong.

The general methods for gathering ethnobotanical data was as described by Jain (1963, 1964, 1981, 1987), Rao & Hajra (1987), Rao (1989a) and Ahmed and Borthakur (2005). During field work, informants were requested to accompany to the field to detect the plants and information were gathered by identifying the plants in the natural habitat which they use for different ethnobotanical aspect. For conducting interviews two types of interviews were taken, firstly of individuals and secondly of groups. Of individuals interview knowledgeable person (age group 40-90 yrs) or the village headman were selected. In groups interviews, more than one person were approached. Most of the ethnobotanical information was gathered from the elderly people, who have a very long acquaintance with usage of plants. The ethnomedicinal data were collected through interviews and discussions among the herbal practitioners in and around the study area by asking structured questions regarding the plants which they use for different ailments. The local name of the plant , mode of usage, diseases it cures, parts of the plant, mode of collection, processing, administration of drug, dosages etc, are noted carefully. The information thus gathered was cross-checked adequately for reliability and accuracy by interacting with different groups of the *Tangkhul* people including women from different habitats. Sometimes information was also gathered by showing the freshly collected plants or available photographs of the plants.

Attending in their feasts, festivals, ceremonial occasions and other social events, etc. was of great use in gathering information on plants and observation how they are used. It brings a friendly atmosphere and they became less secretive.

A pertinent question were asked as to what extend can be put on the authenticity of the statements of the informants. Effort was made especially in this direction and the same plant materials were made the subject of discussion with various informants on different days and at different habitats. It helped to a great extent, because of the fact that member of the collections

changed, and there was also scope for new information or even for contradiction of some old records. Once the information on a particular plant was taken on reliable after repeated verification, its local name and uses were recorded. Details about the parts utilized in preparing the medicine, the ailments, the preparation, doses and prescription were also recorded through standard questionnaire. A model questionnaire designed by Parabia and Reddy (2002) was used for accumulation of data on local uses.

The present study is totally based on ethnobotanical studies and documented only those plants that are used by the *Tangkhul* tribe of Ukhrul district, Manipur. An effort has been made to present as far as possible, the nomenclature accepted as valid in current literature and for which mostly the work on Bennet (1987) has been followed. Only important synonyms are given. Authors' abbreviations of the scientific names of plant species are provided following the format given of Brummitt & powell (1992). For some species, Deb (1981, 1983) and Haridasan & Rao (1985, 1987) have been followed, because these works are latest the ones on the plants of northeast India.

Table-3.1: Study sites of the *Tangkhul* tribe in Ukhrul District

ID	LOCATION	LONGITUDE	LATITUDE
1	Jessami	94^{0}54′36.21″	25^{0}62′24.68"
2	Awang Kasom	94^{0}47′45.95″	25^{0}27′85.12"
3	Nungbi khullen	94^{0}46′48.11″	25^{0}20′83.96″
4	Nungbi khunou	94^{0}45′38.88″	25^{0}20′14.98″
5	Phungrei	94^0 51′91.35″	25^{0}19′48.41″
6	Lunghar	94^{0}44′07.3″	25^{0}17′05.5″
7	Ukhrul	94^0 36′ 53.62″	25^{0}10′ 71.86″
8	Hundung	94^0 34′91.45″	25^{0}06′ 30.7″
9	Tolloi	94^0 32′84.61″	25^{0}19′ 25.61″
10	Lamlang	94^0 31′38.47″	25^{0}09′ 38.77″
11	Phadang	94^{0}29′04.91″	25^{0}14′ 69.47″
12	Somdal	94^0 28′86.27″	25^{0}16′ 44.31″
13	Tongou	94^0 25′04.91″	25^{0}05′ 20.92″
14	Lambui	94^0 28′20.51″	25^{0}01′ 67.78″
15	Shangshak khullen	94^0 34′ 21.13″	25^{0}00′ 96.64″
16	Shangshak khunou	94^0 33′ 67.16″	25^{0}00′ 78.9″
17	Shokvao	94^0 26′ 61.72″	24^{0}98′ 09.98″
18	Shangkai	94^0 17′ 62.48″	24^{0}94′ 15.78″
19	Litan	94^0 20′ 72.26″	24^{0}95′ 27.36″
20	Chingai	94^0 17′ 62.48″	25^{0}3′ 50.06″
21	Nongdam	94^0 15′ 38.41″	24^{0}80′ 39.8″
22	Itham	94^{0}21′ 58.35″	24^{0}78′ 89.4″
23	Kasom Khunou	94^{0}29′ 53.22″	24^{0}66′ 33.24″

24	Nambasi khullen	94^0 33′ 56.27″	24^0 60′ 89. 83″
25	Nambasi khunou	94^0 35′ 99.46″	24^0 60′ 02. 76
26	Kasom Khullen	94^0 27′ 33.46″	24^0 68′ 15. 72″
27	Shakok	94^0 31′ 46.35″	24^0 87′ 56. 28″
28	Leiting	94^0 34′ 75.68″	24^0 93′ 34. 97″
29	Leishi	94^0 33′ 70.35″	24^0 95′ 11. 19″
30	Kaso	94^0 34′ 39.07″	24^0 97′ 21. 03″
31	Grihang	94^0 47′ 99.57″	24^0 78′ 50. 58″
32	Chungkai	94^0 38′ 86.68″	24^0 80′ 37. 71″
33	Ningthi	94^0 43′ 59.37″	24^0 86′ 07. 43″
34	Bungpa khullen	94^0 48’ 70.08″	24^0 83′ 62. 42″
35	Bungpa khunou	94^0 49′ 08.64″	24^0 81′ 81. 8″
36	Sampui	94^0 48′ 91.88″	24^0 86′ 33. 65″
37	Ningchou	94^0 49′ 90.57″	24^0 76′ 03. 88″
38	Maku	94^0 49′ 48.23″	24^0 97′ 76. 84″
39	Chassad	94^0 51′ 32.76″	24^0 86′ 07. 44″
40	Phange	94^0 55′ 13.19″	24^0 85′ 90. 4″
41	Khoikai	94^0 50′ 64.08″	24^0 91′ 37. 11″
42	Sikibung	94^0 20′ 7 3.8″	24^0 92′ 89. 25″
43	Phalang	94^0 33′ 79.06″	24^0 91′ 59. 38″
44	Khangkhui khullen	94^0 41′ 90.56″	24^0 06′ 11. 32″
45	Shingcha	94^0 49′ 93.4″	24^0 00′ 82 28″
46	Pinghang	94^0 52′ 69.86″	24^0 88′ 21. 58″
47	Lauphang	94^0 15′ 09.6″	24^0 82′ 41. 85″
48	Shiroy Chingkha	94^0 42′ 31.95″	25^0 12′ 93. 91″

49	Tuinem	94^0 25′ 98.33″	25^0 11′ 61. 56″
50	Sirarukhong	94^0 23′ 79.02″	25^0 07′ 72. 34″
51	Khoripok	94^0 20′ 51.1″	24^0 68′ 08. 76″
52	Singkap	94^0 25′ 26.71″	24^0 86′ 27.09 ″
53	Monghlam	94^0 18′ 67.97″	24^0 78′ 78.16 ″
54	Kharasom	94^0 47′ 56.18″	25^0 46′ 66.7 ″
55	Phungcha	94^0 39′ 29. 44″	25^0 21′ 00.74 ″
56	Paorei	94^0 40′ 61.16″	25^0 23′ 46.92 ″

CHAPTER-IV

4.1: ENUMERATION OF ETHNOBOTANICAL PLANTS OF *TANGKHUL*- NAGA TRIBE

A total of 400 plant species having ethnobotanical uses have been enumerated in alphabetical order to the scientific names under major head of uses or of ethnobotanical significance. Local names are given in Tangkhul dialects, also in some species in Manipuri dialects as it is a common language of the people of different dialects living in the district. A short description of the species is given mentioning only the habit. Both wild as well as cultivated plants are also mentioned. The field collection number is cited along with locality and date of collection. The uses of the plant which do not seem to be known in common literature on edible, medicinal and other purposes are marked with asterisk (*). The ethnobotanical uses of the plants are arranged under 18 categories: a) Food and Beverages b) Ethnomedicine c) Ethnoveterinary d)Dye yielding e) Fuel f) Fibre g) Fish Poisoning and Bird Snaring h) Hair Care i) Biofencing j) Socio-religious k) Wrapping purposes l) Detergent m) Bamboo & Cane n) House construction o) Household items p) Fodders q) Masticatories and Fumigatories r) Miscellanous uses.

4.2: FOOD AND BEVERAGES

Since time immemorial useful plants, have been handled by the *Tangkhul* society for medicinal, beverages and food purposes. The *Tangkhul* people who are residing in remote areas where vegetable cultivation is not practiced and market supplies are not organized, villagers mainly depend on indigenous vegetables, both cultivated in kitchen gardens and wild, for enriching the diversity of food. Many leafy vegetables as well as spices that are abundantly found in their locality are used and also sold in the local market.

Thus, the wild and cultivated edible plants are valuable source of food as well as main source of household income for the *Tangkhul* community. Also, the wild edible plants were used as supplements to the cultivated crops and as famine foods between harvesting seasons. Of the vegetables, most of the *Tangkhul's* prefer to take roots and tender shoots. They usually prepare their curries by boiling the vegetables with their roasted meat or fish and fermented dry fish. Edible oil is hardly used. Thus, various plant parts whichare consumed as food by the *Tangkhul* tribe i.e. the tubers, bulbs, corms or rhizomes, stem, leaves, tender shoots, inflorescences, flowers, buds, fruits, seeds, nuts and kernels, cereals and millets, edible fungi are enumerated with their botanical name, followed by the family name given in parenthesis, habit and brief geographical distribution along with the usage as food.

4.2.1: Edible tubers, bulbs, corms and rhizome:

Allium ascalonicum L. (Alliaceae)

Vern. Name: ***Meitei-Tarui***

A bulbuous herb. Common, cultivated in the kitchen garden.

Uses: The bulb is eaten raw along with chutney prepared with fermented fish or dried powdered beef, also cooked as vegetables. Sold in market @ Rs 5 /-per bundle of 4- 5 plants.

Specimen examined: Salam, 944, 16/11/2010, Ukhrul.

A. chinense G.Don. (Alliaceae)

Vern. Name: ***Somri***

A perennial bulbous herb Common, cultivated in the kitchen garden.

**Uses: ***The bulb are eaten raw with roasted chilly chutney or used as spices in the preparation of fish or meat. Sold in markets during April- July in bundles @ Rs10-15/- per bundle of 8-16 plants.

Specimen examined: Salam, 541, 15/10/2009, Ukhrul.

A. hookeri Thw. (Alliaceae)

Vern. Name: ***Namrei***

It is an herb having fibrous roots. Common, cultivated in the kitchen garden.

Uses: The fibrous roots along with leaves are used in cooking meat. Sold in market throughout the year @Rs 5/-per bundle of 3-4 whole plant.

Specimen examined: Salam, 1814, 3/3/2011, Ukhrul.

A. sativum L. (Alliaceae)

Vern. Name: ***Hanam***

A perennial bulbous herb. Common, cultivated in the kitchen garden.

Uses: The bulb is used as spices especially in the preparation of meat by this community. Sold in market throughout the year @Rs 35-50/- per kg.

Specimen examined: Salam, 502, 6/1/2009, Hundung.

Alpinia galanga Willd. (Zingiberaceae)

Vern. Name: ***Hirui***

A perennial rhizomatous herb. Common, grows wild in the wastelands and also cultivated.

Uses: The rhizome is eaten raw with chutney, also cooked with *Colocasia* spp. Not available in market.

Specimen examined: Salam, 1847, 19/8/2011, Landang **(Plate-9-A).**

A. nigra (Gaertn.) Burtt. (Zingiberaceae)

Vern. Name: ***Nonishon***

A perennial rhizomatous herb. Common, cultivated as well as grows wild in wastelands.

Uses: The rhizome is used in the preparation of Iromba (the indigenous pungent dish for all communities) of Manipur. Sold in market @ Rs 5/-per bundle of 3-4 plants.

Specimen examined: Salam, 1811, 19/8/2012, Lambui.

Arachis hypogea L. (Fabaceae)

Vern. Name: ***Leipakhawai***

An annual herb. Cultivated.

Uses: Seeds are eaten fried or roasted. Sold in market @ Rs 20-25/- per kg.

Specimen examined: Salam, 953, 30/10/2010, Bungpa khullen.

Brassica rapa L. (Brassicaceae)

Vern. Name: ***Ol-gobi***

It is an erect herb. Cultivated in the kitchen garden.

Uses: Underground root are eaten cooked as vegetables. Sold in market @ Rs 25-30/-per kg.

Specimen examined: Salam, 974, 20/8/2010, Khangkhui khullen.

Colocasia gigantea (Blume) Hook.f. (Araceae)

Vern. Name: ***Kharinghor***

It is a herb with rootstock. Very common, cultivated.

Uses: The underground corm is eaten raw or cooked as vegetables. Sold in market **@** Rs 5-10/- per bundle of 4-5 plants.

Specimen examined: Salam, 573, 17/5/2009, Nungbi khullen.

C. esculenta (L.) Schott. (Araceae)

Vern. Name: ***Pai***

It is a tuberous stout herb. Very common, widely cultivated.

Uses: The underground corm is eaten boiled or cooked with meat. It is widely grown and considered as cash crop. Sold in market during July-0ctober @ Rs 25-30/- per kg.

Specimen examined: Salam, 1801, 20/8/2011, Khangkhui khullen. **(Plate-9-B).**

Curcuma caesia Roxb. (Zingiberaceae)

Vern. Name: ***Yaimu***

It is a rhizomatous perennial aromatic herb. Very common, cultivated as wellas grows wild.

Uses: The underground rhizome is used as spices or as flavouring agents. Not available in market.

Specimen examined: Salam, 507, 17/5/ 2009, Nungbi khullen.

C. longa L.(Zingiberaceae)

Vern. Name: ***Yaigang***

It is a rhizomatous perennial herb having irregular shaped rhizome. Very common, cultivated.

Uses: The dried rhizome powder is used as colouring agents. The *Tangkhul* people used only in occasion. Sold in market @ Rs 50-60/- per kg.

Specimen examined: Salam, 902, 28/10/2010, Phange.

Daucus carota L. (Apiaceae)

Vern. Name: ***Gajar***

It is an annual herb with conical fleshy root. Cultivated.

Uses: The fleshy root is eaten raw in salad form. Sold in market @ Rs 15-20/-per kg.

Specimen examined: Salam, 1822, 15/2/2011, Ukhrul.

Dioscorea alata L. (Dioscoreaceae)

Vern. Name: ***Hapai***

It is a climber. Rare, cultivated and also grows wild.

Uses: The underground starchy root is consumed roasted or boiled. Sold in market **@** Rs 10-20/-per kg.

Specimen examined: Salam, 576, 15/12/2009, Ukhrul **(Plate-9-C).**

Hedychium coronarium J. Koening (Zingiberaceae)

Vern. Name: ***Tontairui***

A stout aromatic rhizomatous herb.Cultivated as well as grows wild.

Uses: The aromatic rhizome is used as important ingredients in the preparation of *Yongchak Iromba* by all the communities in Manipur. Sold at market @ Rs 15-20/-per kg.

Specimen examined: Salam, 551, 5/8/2010, Phadang **(Plate-9-D).**

H. spicatum Sm. (Zingiberaceae)

Vern. Name: ***Tonruiwon***

A rhizomatous herb. Common, cultivated as well as grows wild.

Uses: The rhizome is used only in place of *Hedychium coronarium*, when it is not available in all the markets. Not available in market.

Specimen examined: Salam, 552, 17/10/2009, Lamlang.

Houttuynia cordata Thunb. (Saururaceae)

Vern. Name: ***Ngayung***

It is an aromatic perennial herb having creeping rootstock. Common, cultivated and also grows wild in moist places

Uses: The aromatic root are used as spices, also are eaten raw in the

preparation of vegetable Salad and *Iromba*. Sold in market @ Rs 2-3/- per bundle.

Specimen examined: Salam, 555, 15/5/2009, Ukhrul.

Ipomoea batatas L. (Convolvulaceae)

Vern. Name: ***Meiteipai***

It is a slender, prostrate and perennial herbaceous vine.Common, cultivated.

Uses: The swollen tuberous roots of two colours (Red skinned and white skinned) are found and are eaten raw, roasted or steamed cooked. Boiled one is mainly eaten with salt. It constitutes important sources of starchy food especially in times of famine. Sold in market @ Rs 15-20/-per kg.

Specimen examined: Salam, 560, 15/12/2009, Ukhrul.

Manihot esculenta Crantz (Euphorbiaceae)

Vern. Name: ***Thingpai***

It is a shrub. Common, cultivated in every homestead of *Tangkhul.*

Uses: The underground rootstock is edible raw, roasted or cooked. It constitutes important sources of starchy food especially in times of famine. Sold in market @Rs 5-10/- per roostock.

Specimen examined: Salam, 542, 17/10/2009, Lamlang (**Plate-9-E).**

Raphanus sativus L. (Brassicaceae)

Vern. Name: ***Mulla***

It is an annual herb with conical fleshy edible root. Cultivated in the kitchen garden.

Uses: The fleshy tuberous root are eaten raw in salad form or cooked as vegetables. Sold in market @ Rs 10-15/-per kg.

Specimen examined: Salam,3535, 8/7/2012, Ukhrul.

Sechium edule Sw. (Cucurbitaceae)

Vern. Name: ***Squash***

An extensive climber with perennial rootstock. Very common, widely cultivated.

Uses: The underground rootstock is consumed either boiled or small piece of root are cooked with meat. Not commonly sold in the market. If available, it is sold @ Rs 10-15/- per piece (one rootstock).

Specimen examined: Salam, 335,23/7/2012, Phungyar **(Plate-9-F).**

Zingiber cassumunar Roxb. (Zingiberaceae)

Vern. Name: ***Ram hui***

It is an aromatic rhizomatous herb. Cultivated as well as grows wild.

Uses: The aromatic rhizome is used as spices and condiments. Not available in market.

Specimen examined: Salam, 347, 20/5/2012, Ukhrul.

Z. officinale Rosc. (Zingiberaceae)

Vern. Name: ***Hui***

It is an aromatic herb having large rootstock. Very common, cultivated.

Uses: The aromatic rhizome is used as spices and condiments. Also, it is used in the preparation of black tea as flavouring agent. Sold in market @Rs 20-25/-per kg.

Specimen examined: Salam, 540, 16/10/2009, Lunghar.

4.2.2: Edible tender shoots and leaves

Acanthopanax trifoliatus (L.) Merr. (Araliaceae)

Vern. Name: ***Rangsongthei***

It is a prickly straggling shrub. Rare, cultivated.

**Uses: ***Leaves are eaten cooked as vegetables with dry fishes. Not available in the market.

Specimen examined: Salam, 933, 16/4/2010, Ukhrul.

Achyranthes aspera L. (Amaranthaceae)

Vern. Name: ***Manarina***

It is a perennial stiff erect herb with pubescent branches. Common, grows wild.

Uses: Young twigs are cooked and eaten as vegetables. Not available in the market.

Specimen examined: Salam, 935, 17/12/2010, Tungou.

A. chinense G.Don. (Alliaceae)

Vern. Name: ***Somri***

It is a perennial bulbous herb. Common, cultivated.

Uses: Leaves are eaten raw or cooked with other vegetables. Sold in markets during April- July in bundles @ Rs10-15 /-per bundle of 8-16 plants.

Specimen examined: Salam, 541, 15/10/2009, Ukhrul **(Plate-11-B).**

A. hookeri Thw. (Alliaceae)

Vern. Name: ***Namrei***

It is an herb having tunicate bulb. Common, cultivated.

Uses: Leaves are eaten cooked with other vegetables or used as spice while cooking various curries. Sold in markets throughout the year in bundles @ Rs 5/- per bundle of 3-4 plants.

Specimen examined: Salam, 1814, 3/3/2011, Hundung **(Plate-11-A).**

A. tuberosum Roxb. (Alliaceae)

Vern. Name: ***Namra***

It is an herb having tunicate bulb. Common, cultivated.

Uses: The green leaves are eaten raw, fried or cooked with other vegetables. Sold in markets throughout the year in bundles @ Rs10/- per bundle.

Specimen examined: Salam, 1873, 18/8/2011, Lambui **(Plate-11-C).**

Alternanthera sessilis (L.) DC. (Amaranthaceae)

Vern. Name: ***Phakchek***

It is a much-branched prostrate herb. Common, grows as weed in moist places.

Uses: Tender shoots and leaves are eaten cooked with rice along with fermented soyabean (*Theishu*). Not available in market.

Specimen examined: Salam, 948, 17/8/2010, Litan.

Alocasia indica Schott. (Araceae)

Vern. Name: ***Paankhot***

It is a robust herb with caudex. Common, cultivated.

Uses: Leaves are used in the preparation of local dish called *hotla ra.* Not available in market.

Specimen examined: Salam, 922, 12/9/2010, Sikibung.

Amaranthus spinosus L. (Amaranthaceae)

Vern. Name: ***Somchan***

It is an erect glabrous much branched weed, armed with sharp spines. Common, grows in waste places.

Uses: Tender leaves are eaten cooked as vegetable, suitable with dry fish. Sold in markets throughout the year in heaps @ Rs 5/- per heap.

Specimen examined: Salam, 950,17/8/2010, Litan.

Antidesma acidum Retz. (Euphorbiaceae)

Vern. Name: ***Sachian***

It is a deciduous shrub or small tree. Common, cultivated as well as grows wild.

Uses: Leaves are slightly acidic and cooked as vegetable with dry fish. Sold in markets during April-July in bundles @ Rs 5/- per bundle of 5-8 twigs.

Specimen examined: Salam, 3521, 8/7/2012, Ukhrul **(Plate-10-A).**

Apium graveolens L. (Apiaceae)

Vern. Name: ***Sirai kahui***

It is a biennial herb. Common, cultivated in the kitchen garden.

Uses: Leaves are cooked with other vegetables or used as spice while cooking various curries. Sold in markets throughout the year in bundles @ Rs 5 per bundle of few leaves.

Specimen examined: Salam, 305, 19/11/2012, Paorei **(Plate-11-D).**

Ardisia colorata Roxb. (Myrsinaceae)

Vern. Name**:** ***Magingran***

It is a large glabrous shrub or a small tree. Occasional, grows wild.

Uses: Leaves are eaten cooked as vegetables; also it makes a popular dish with local dry small fish. Sold in markets throughout the year in heaps @ Rs 5-10/- per heap.

Specimen examined: Salam, 1853, 18/8/2011, Lambui.

Argyreia nervosa (Burm.f.) Boj. (Convolvulaceae)

Vern. Name: ***Puding uri***

It is a scandent climber. Common, grows wild in roadside and other wasteland.

Uses: Tender leaves are eaten cooked as vegetable in the form of *kangshu.* i.e., Boiled leaves are dreid by squeezing and cut into pieces and mixed with roasted chilly and fermented fish. Not available in market.

Specimen examined: Salam, 942, 4/8/2010, Lamlang.

Artemisia nilagarica (C.B. Clarke) Pamp. (Asteraceae)

Vern. Name: ***Harana***

It is a tall aromatic undershrub. Common in abandoned jhum land.

Uses: Tender leaves are cooked and eaten as vegetables. Sold in market during summer season in bunches @ Rs10-15/- per bunch.

Specimen examined: Salam, 1854, 12/9/2011, Nampisha.

Arundinaria callosa Munro (Poaceae)

Vern. Name: ***Laiwa***

It is a thorny shrubby erect bamboo. Rare, planted in the homestead.

Uses: Tender shoots are eaten as fried item or cooked with pork or beef meat. Sold in market during summer season in bunches @ Rs15-20/-per bunch.

Specimen examined: Salam, 3501, 18/ 8/2012, Litan **(Plate-16-A).**

Basella alba L. (Basellaceae)

Vern. Name: ***Urok sumbal***

It is a glabrous twining vine. Common, grows in waste places most commonly over hedges.

Uses: Leaves are eaten cooked as vegetables; also leaves are used to make bora. Sold in market during winter season in bunches @ Rs 5-10 /-per bunch.

Specimen examined: Salam, 958, 17/8/2010, Litan.

Begonia picta Sm. (Begoniaceae)

Vern. Name: ***Shaheb saithur***

It is a small herb. Occasional, grows wild.

Uses: *Young twigs and leaves are cooked and eaten as boiled vegetables. Not available in market.

Specimen examined: Salam, 969, 16/4/2010, Ukhrul.

Bidens pilosa L. (Asteraceae)

Vern. Name: ***Phanang***

An erect, glabrous, pilose or pubescent herb. Common, grows wild as weed.

Uses: Young leaves and shoots are eaten raw or cooked as vegetable with fish, considered highly palatable vegetable. Not available in market.

Specimen examined: Salam, 973, 30/10/2010, Sampui.

Blumeopsis flava Gagnep. (Asteraceae)

Vern. Name: ***Uri***

It is a glabrous herb. Common, grows as wild weed in waste places.

Uses: *Fleshy young leaves are eaten cooked mixed with other vegetables along with pounded rice. Not available in market.

Specimen examined: Salam, 308, 1/11/2012, Sikibung.

Brassica napus L. (Brassicaceae)

Vern. Name: ***Kayanghan***

It is an erect annual herb. Common, cultivated as an important vegetable crop.

Uses: Leaves are eaten cooked with dal as well as cooked as simple boiled vegetable throughout the year. It is suitable with pork and considered a good vegetable by *Tangkhul*. Sold in market throughout the year in bundles @ Rs 10-15/- per bundle.

Specimen examined: Salam, 920, 16/11/2010, Ukhrul.

Brassaiopsis polycantha (Wall.) R. N. Banerjee (Araliaceae)

Vern. Name: ***Sungphenghan***

It is a small sparsely branched prickly tree. Common, grows wild as well as cultivated in the home garden.

Uses: Tender leaves are eaten cooked as vegetables with dry fish. It is highly demand for its medicinal value in the market. Sold in market during May-July in bundle @ Rs 10-15/- per bundle.

Specimen examined: Salam, 504, 15/5/2009, Ukhrul.

Capsella bursa-pastoris (L.) Medik. (Brassicaceae)

Vern. Name: ***Chamtruk***

It is an annual herb. Common, cultivated in kitchen garden.

Uses: Tender shoots are eaten raw with dry roasted chilly chutney

(*Khasathei nai*). Sold in market during November-Febraury in bundles @ Rs 3-5/- per bundle.

Specimen examined: Salam, 984, 16/11/2010, Ukhrul.

Cardamine hirsuta L. (Brassicaceae)

Vern. Name: ***Shiwokkayanghan***

It is an annual bitter herb. Common, grows as wild in moist waste places.

Uses: Bitter leaves are eaten cooked as vegetables favourable with fish. Not available in market.

Specimen examined: Salam, 986, 16/11/2010, Ukhrul**.**

Cassia laevigata Willd. (Caesalpinaceae)

Vern. Name: ***Piwon***

It is a handsome shrub with glabrous branches. Common, grows wild.

Uses: Leaves are eaten cooked with dal as well as cooked with dry fish. Not available in market.

Specimen examined: Salam, 903, 16/4/2010, Ukhrul.

Centella asiatica (L.) Urban (Apiaceae)

Vern. Name: ***Kongrihan***

It is a common, herb having a long creeping stem rooting at the nodes.Common, grows in all the habitats.

Uses: Fleshyleaves and shoots are bitter, eaten raw or cooked as vegetable mixing with others. Sold in market throughout the year in heaps @ Rs 3-5/- per heap.

Specimen examined: Salam, 924, 12/9/2010, Sikibung.

Chenopodium album L. (Chenopodiaceae)

Vern. Name: ***Kazingtareihan***

It is an annual herb. Common, cultivated also wild.

Uses: Young leaves along with tender shoots are eaten as vegetable mixing with others. Sold in market during December-February in heaps @ Rs 10/- per heap.

Specimen examined: Salam, 993, 17/12/2010, Tungou.

Cinnamomum tamala Fr.Nees. (Lauraceae)

Vern. Name: ***Sakomna***

It is a medium sized evergreen tree planted in domestic compound.

Uses: Leaves are used as a condiment in various dishes. Sold in market throughout the year in bunches @ Rs 3-5/- per bunch.

Specimen examined: Salam, 520, 15/5/2009, Ukhrul.

Cissus adnata Roxb. (Vitaceae)

Vern. Name: ***Rameihanghor***

It is a climbing shrub with bifid tendrils. Rare, cultivated as well as wild.

Uses: Leaves are eaten cooked as vegetables with dry fish. It is highly demand for its medicinal value in the market. Sold in market during September-January in bunches @ Rs 5/- per bunch.

Specimen examined: Salam, 508, 15/10/2009, Ukhrul.

Clerodendrum colebrookianum Walp. (Verbenaceae)

Vern. Name: ***Nareihan***

It is a large shrub. Common, grows in the wasteland and foothill.

Uses: Young twigs and leaves are cooked and eaten as boiled vegetables. It is highly demand for its medicinal value in the market.

Sold in market during July-September in bundles @ Rs 10/- per bundle of 8-10 twigs.

Specimen examined: Salam, 548, 15/5/2009, Ukhrul.

C. farinosum (Roxb.) Steud. (Verbenaceae)

Vern. Name: ***Ching Moirang khanum***

It is a shrub having bluntly quadrangular stem where the young parts are glabrous. Common, grows wild.

Uses: Young shoots and leaves are eaten as boiled vegetables. Also, eaten in the form of *Kangshu.* Sold in market during August-November in bundles @ Rs 5-10 /-per bundle.

Specimen examined: Salam, 999, 12/9/2010, Sikibung.

Colocasia gigantea (Blume) Hook. f. (Araceae)

Vern. Name: ***Kharinghor***

It is an annual herb with stout epigeal stem. Common, cultivated in the kitchen garden.

Uses: Fleshy leaves and petiole are eaten raw with sour fruits or used as an ingredient in the preparation of traditional dish *Chagempomba* (mixed vegetables along with pounded rice) or *Hotla ra*. Sold in market throughout the year in bundles @ Rs 5-8/- per bundle of 3-5 plants.

Specimen examined: Salam, 573, 17/5/2009, Nungbi khullen.

Commelina benghalensis L. (Commelinaceae)

Vern. Name: ***Wangdenkhoibi***

It is a glabrous and diffused small herb rooting at lower nodes. Common, grows in moist area.

Uses: Leaves are cooked and eaten as vegetables. Not available in market.

Specimen examined: Salam, 1802, 1/11/2011, Sikibung.

Corchorus capsularis L. (Tiliaceae)

Vern. Name: ***Ruimon***

It is a tall erect annual shrub. Rare, planted as well as wild.

Uses: Leaves are cooked and eaten as vegetables in the form of *Kangsoi* (simple boiled) with dry fish or pork. Sold in market during July-November in bunches @ Rs 10-15/- per bunch.

Specimen examined: Salam, 1804, 16/6/2011, Lauphang.

Crassocephalum crepidiodes S. Moore (Asteraceae)

Vern. Name: ***Revival***

It is a large succulent herb. Common, grows wild.

Uses: Young leaves are eaten raw or cooked as simple boiled vegetables for its medicinal properties. Sold in markets throughout the year in heaps @ Rs 5-10/- per heap.

Specimen examined: Salam, 1864, 1/12/2011, Grihang.

Crotolaria juncea L. (Fabaceae)

Vern. Name: ***U-hawai maton***

It is a small shrub. Common, cultivated.

Uses: Leaves are eaten raw or cooked with other vegetables. Sold in market during October-January in heaps @ Rs 5-10/- per heap.

Specimen examined: Salam, 1806, 3/3/2011, Hundung.

Cucurma longa L. (Zingiberaceae)

Vern. Name: ***Yaigang***

It is a rhizomatous perennial plant having irregular shaped tubers. Very common, cultivated.

Uses: Fleshy leaves are used as condiment in various dishes. Sold in markets throughout the year even in dried form in bundles @ Rs 3/- per bundle of 3-5 leaves.

Specimen examined: Salam, 902, 28/10/2010, Phange.

Cycas pectinata Griff. (Cycadaceae)

Vern. Name: ***Yendang***

It is a small tree. Occasional, also grows wild.

Uses: Tender leaves are used as vegetables. Sold in markets during April- July in bundles @ Rs 5-10/- per bundle of 5-8 leaves.

Specimen examined: Salam, 1817, 17/2/ 2011, Lunghar.

Debregeasia longifolia (Burm.f.) Wedd. (Urticaceae)

Vern. Name: ***Kahorathei***

It is a small tree with slender and pilose branchlets. Rare grows wild near river banks, foothills.

Uses: *Tender shoots and leaves are eaten cooked as vegetable suitable with fish and pork, considered highly palatable vegetable. Sold in markets throughout the year in bundles @ Rs 5-10/- per bundle of 6-10 twigs.

Specimen examined: Salam, 1823, 12/9/2011, Nampisha.

Dendrocalamus giganteus Munro (Poaceae)

Vern. Name: ***Havang***

It is a tall bamboo with large culm.

Uses: Tender shoots are eaten cooked as vegetable, fermented shoots are also cooked with pork.

Specimen examined: Salam, 3508, 6/2/2012, Kasom Khunou.

Diplazium esculentum (Retz.) Sw. (Athyriaceae)

Vern. Name: ***Machana***

It is an edible fern. Common, grows near roadsides or moist wastselands.

Uses: Young fleshy uncurled fronds are eaten as vegetable, also taken in the form of *Kangshu*. Sold in markets throughout the year in bundles @ Rs 3/- per bundle.

Specimen examined: Salam, 566, 3/1/2009, Ukhrul.

Drymaria cordata Willd. (Caryophyllaceae)

Vern. Name: ***Biviyena***

It is a diffused dichotomously branched herb. Common, grows near roadsides or moist wastelands.

Uses: Tender leaves and shoots are eaten as vegetable with small dry fish. Not available in market.

Specimen examined: Salam, 515, 10/7/2009, Litan.

Elatostema lineolatum Wight. (Urticaceae)

Vern. Name: ***Hantekhan***

It is a shrub. Rare, grows wild.

Uses: *Tender twigs and leaves are boiled with rice and eaten as cooked vegetables. This is the most popular leafy vegetables among the *Tangkhul* tribe. Sold in markets during November-March in bundles @ Rs 5-10/- per bundle of 5-8 Twigs.

Specimen examined: Salam, 575, 15/12/2009, Ukhrul **(Plate-10-B).**

Elsholtzia blanda Benth. (Lamiaceae)

Vern. Name: ***Ngarikna***

It is an annual aromatic sub shrub. Cultivated in the kitchen garden.

Uses: Leaves are eaten raw with Iromba or chili chutney. Also used as condiment in meat curry. Sold in markets during September-December in heaps @ Rs 3-5/- per heap.

Specimen examined: Salam, 506, 15/10/2009, Ukhrul **(Plate-11-E).**

E. communis (Coll. &Hemsl.)Diels (Lamiaceae)

Vern. Name: ***Yongpa***

It is a perennial shrub having obscurely quadrangular branches. Cultivated in the kitchen garden.

Uses: Leaves along with inflorescence are taken as culinary herbs. Sold in markets during October-December in bundles @ Rs 5-10/- per bundle of 8-13 twigs.

Specimen examined: Salam, 587, 15/10/2009, Ukhrul.

Emilia sonchifolia (L.) DC. (Asteraceae)

Vern. Name: ***Revival***

A slender herb growing wild in shaded and moist places.

Uses: Young leaves are eaten cooked as simple boiled vegetables or as mixed vegetable. Not available in market.

Specimen examined: Salam, 517, 10/7/ 2009, Litan.

Enhydra fluctuans Lour. (Asteraceae)

Vern. Name: ***Komprek tujombi***

It is a prostrate herb. Rare grows wild near river banks, foothills.

Uses: Leaves are eaten raw in vegetables salad. Not available in market.

Specimen examined: Salam, 581, 10/7/2009, Litan.

Eryngium foetidum L. (Apiaceae)

Vern. Name: ***Lam sachikom***

It is an erect aromatic perennial herb. Commonly cultivated in home garden.

Uses: Aromatic leaves are added to increase taste especially in meat curries. Sold in market throughout the year in bundles @ Rs 3-5/- per bundle of 5-7plants.

Specimen examined: Salam, 595, 16/5/2009, Lambui (**Plate-11-F).**

Euphorbia hirta L. (Euphorbiaceae)

Vern. Name: ***Pakhangleiton***

It is an annual trailing herb with branched and hairy stem herb.Very common, grows in the wastelands.

Uses: Young shoots and leaves are eaten raw with chilly chutney or cooked as vegetables. Sold in market during summer in bunches @ Rs 10-15/- per bunch.

Specimen examined: Salam, 519, 10/7/ 2009, Litan.

Eurya acuminate DC.(Theaceae)

Vern. Name: ***Sijou***

It is a perennial shrub. Common, grows wild.

Uses: Leaves are eaten raw or cooked especially with fish or chicken. Not available in market.

Specimen examined: Salam, 590, 16/10/2009, Lunghar.

Fagopyrum esculentum (L.) Moench.(Polygonaceae)

Vern. Name: ***Harenhan***

It is an erect glabrous annual herb. Occasional, grows on roadsides.

Uses: Young leaves and shoots are eaten cooked as vegetable.It makes a popular dish with local dry fishes or dry meat. Sometimes it is also cooked with fermented soyabean. Not available in the market.

Specimen examined: Salam, 592, 10/7/2009, Litan.

Ficus palmata Roxb.(Moraceae)

Vern. Name: ***Heiba***

It is a small evergreen tree whose young parts are pubescent. Occasional, grows wild or cultivated in home garden.

Uses: Leaves are eaten raw or cooked as vegetables. Sold in market during April-July in bundles @ Rs 5/-per bundle of 3-5 twig.

Specimen examined: Salam, 599, 15/10/2009, Shiroy chingkha.

F. tsjakela Burm.f. (Moraceae)

Vern. Name: ***Sangleikokna***

It is a large tree. Rare, grows wild.

Uses: Young leaves are eaten as vegetable. It is said that this vegetable if eaten at the beginning of rainy season gives immunity towards seasonal diseases. Sold in markets during May-July in heaps @ Rs 10-15/- per heap.

Specimen examined: Salam, 901, 17/8/2010, Litan **(Plate-10-C).**

Hibiscus cannabinus L. (Malvaceae)

Vern. Name: ***Sougree***

It is a shrub having prickly stem. Common, cultivated in the kitchen garden.

Uses: Leaves are cooked and eaten as vegetables. Sold in market during September-December in bundles @ Rs 5-10 per bundle of 8-10 leaves.

Specimen examined: Salam, 929, 17/8/2010, Litan.

H. sabdariffa L. (Malvaceae)

Vern. Name: ***Silotsougree***

It is an annual erect glabrous under shrub. Cultivated in the kitchen garden.

Uses: Leaves are cooked with dry fish or pork and eaten as vegetables. Sold in market @ Rs 5 -10/- per bunch.

Specimen examined: Salam,553, 10/7/2009, Litan.

Houttuynia cordata Thunb. (Saururaceae)

Vern. Name: ***Ngayung***

It is a perennial aromatic herb with creeping rootstocks. Common, cultivated as well as grows wild.

Uses: Leaves are eaten raw or cooked as vegetable. Aromatic leaves are added to other vegetables for flavour. Sold in market throughout the year in bundles @ Rs 3-5/-per bundle of 5- 6 plants.

Specimen examined: Salam,555, 15/5/2009, Ukhrul.

Ipomoea aquatica Forsk. (Convolvulaceae)

Vern. Name: ***Kolamni***

It is an annual herb having hollow stem. Common, grows wild in wetlands.

Uses: The leaves and twigs are eaten either raw or cooked as simple boiled vegetables. Sold in markets throughout the year in bundles @ Rs 5-10 per bundle of 6-12 twigs.

Specimen examined: Salam, 558, 10/7/2009, Litan.

I. batatas (L.) Lam. (Convolvulaceae)

Vern. Name: ***Meiteipai***

It is a prostrate perennial herbaceous vine.Common, cultivated.

Uses: Tender leaves are eaten raw in vegetables salad and sometimes cooked with mushroom. Not available in market.

Specimen examined: Salam, 560, 15/12/2009, Ukhrul.

Justicia adhatoda L. (Acanthaceae)

Vern. Name: ***Sipchang***

It is a tall dense shrub. Common, grows wild or planted as hedge plant.

Uses: Leaves are either eaten raw or fried. Not available in market.

Specimen examined: Salam, 918, 16/4/2010, Ukhrul.

Leucaena gluaca Benth. (Mimosaceae)

Vern. Name: ***Yongchakteoshi***

It is a large erect shrub. Occasional, cultivated.

Uses: Tender shoots are eaten raw in vegetables salad. Not available in market.

Specimen examined: Salam, 1830, 1/11/2011, Sikibung.

Luffa cylindrica (L.) Roem. (Cucurbitaceae)

Vern. Name: ***Narithei***

It is a large annual herbaceous climber. Cultivated as vegetables crop.

Uses: Tender shoots and leaves are boiled with rice and eaten as cooked vegetable or mixed with other vegetables. Not available in market.

Specimen examined: Salam, 1838, 16/6/2011, Lauphang.

Lysimachia parvifolia Franch.(Primulariaceae)

Vern. Name: ***Kengoi***

It is a annual or perennial herb.

Uses: Tender shoots and leaves are eaten as simple boiled vegetables. It is also highly delicious when it is cooked with fish. Sold in markets during January-March in heaps @ Rs 10/- per heap.

Specimen examined: Salam, 1842, 1/11/2011, Sikibung.

Mahonia manipurensis Takeda. (Berberidaceae)

Vern. Name: ***Yaiganmachurong***

It is a shrub with compound leaves. Occasional, grows wild in sirohee.

Uses: *Tender shoots are eaten cooked with dry meat or fish. Not available in market.

Specimen examined: Salam, 1845, 6/5/2011, Itham.

Manihot esculenta Crantz. (Euphorbiaceae)

Vern. Name: ***Thingpai***

It is a shrub. Common, cultivated as important crop plant in the Ukhrul district.

Uses: Tender leaves are eaten raw in vegetables salad. Not available in market.

Specimen examined: Salam, 542, 17/10/2009, Lamlang.

Melothria heterophylla (Lour.) Cogn. (Cucurbitaceae)

Vern. Name: ***Hangkhapaitarere***

It is a perennial tendril climber. Common, grows wild.

Uses: *Tender leaves are eaten cooked with other vegetable. Not available in market.

Specimen examined: Salam, 525, 15/10/2009, Ukhrul.

Melothria purpusilla (Blume.) Cogn. (Cucurbitaceae)

Vern. Name: ***Lam karopthei***

It is a monoecious tendril climber. Common, grows wild over fences and bushes.

Uses: Tender twigs and leaves are eaten cooked as vegetables with dry fish. It is highly demand for its medicinal value in the market. Sold in market throughout the year even in dried form in bundles @ Rs 10/- per bundle of 8-10 twigs.

Specimen examined: Salam, 1855, 20/8/2011,Khangkhui khullen.

Mentha spicata L. (Lamiaceae)

Vern. Name: ***Suiruihan***

It is a strongly aromatic perennial herb. Cultivated in the kitchen garden.

Uses: Leaves are eaten raw or cooked as vegetable. Aromatic leaves are added to other vegetables for flavor, also highly demand in market

for its medicinal properties. Sold in market throughout the year in heaps @ 3-5/- per heap.

Specimen examined: Salam, 547, 10/7/ 2009, Litan.

Meyna spinosa Robyns. (Rubiaceae)

Vern. Name: ***Theibethei***

It is a shrub with straight opposite, simple or 3-nate spines. Common, grows wild as well as cultivated.

Uses: Leaves are eaten raw in vegetables salad (*Ringneokashai*). Rarely sold in market in heaps @ Rs5-10/ -per heap.

Specimen examined: Salam, 1857, 16/6/2011, Chungkai.

Ocimum americanum L. (Lamiaceae)

Vern. Name: ***Sari***

It is a much-branched highly aromatic erect herb. Common, cultivated in the kitchen garden.

Uses: Young twigs or leaves are eaten raw in vegetables salad or cooked with other vegetables to increase taste. It has high demand for its aromatic character in the market. Sold in market during May-October in bundles @ Rs 10-15 per bundle of 5-7 plants.

Specimen examined: Salam, 1858, 15/2/2011, Ukhrul.

Oenanthe javanica DC. (Apiaceae)

Vern. Name: ***Hanchamhan***

It is glabrous erect herb. Common, grows wild in marshy areas.

Uses: Fresh leaves are eaten raw in green vegetables salad *Ringneokashai* and *Iromba,* alsoinsimple boiled form *Hupkashai.* Sold in

market during March-May in bundles @ Rs 5-10 per bundle of 6-8 twigs.

Specimen examined: Salam, 589, 10/7/ 2009, Litan.

Oxalis corniculata L. (Oxidaceae)

Vern. Name: ***Shaithur***

It is a diffuse herb with procumbent branches.Common, grows wild .

Uses: Leaves pleasantly acidic in taste are either eaten raw in salad or cooked as vegetable with dal or fish. Not available in market.

Specimen examined: Salam, 524, 16/5/2009, Lambui.

Paederia foetida L. (Rubiaceae)

Vern. Name: ***Painamra***

It is a glabrous or puberulous twinning herb. Common, grows wild.

Uses: Tender leaves and twigs are eaten cooked as vegetable with fish or pork. Also sometimes leaves are eaten fried as bora. Not available in market.

Specimen examined: Salam, 1875, 20/8/2011, Khangkhui khullen.

Passiflora edulis Sims. (Passifloraceae)

Vern. Name: ***Sitapor***

It is a twinner plant. Common, cultivated in the home garden.

Uses: Tender leaves are eaten cooked as vegetable with pork. It is considered the most popular dish for the *Tangkhul* tribe. Sold in market during April-July in bundles @ Rs 5-10/- per bundle of 6-8 twigs.

Specimen examined: Salam, 550, 15/5/2009, Ukhrul.

Pavetta indica L. (Rubiaceae)

Vern. Name: ***Sipchanghan Kathura***

It is a shrub. Common, cultivated as medicinal plant in the Ukhrul district.

Uses: Young leaves and shoots are used as vegetable. Not available in market.

Specimen examined: Salam, 1877, 1/11/2011, Sikibung.

Persicaria barbatum L. (Polygonaceae)

Vern. Name: ***Hannahan***

It is a stout erect herb. Common, grows wild in swampy places.

Uses: Tender leaves are eaten raw as well as cooked with other vegetables or with meat. Sold in market during January-July in heaps @ Rs 10/- per heap.

Specimen examined: Salam, 1899, 3/8/2011, Ningthi.

Persicariachinense L. (Polygonaceae)

Vern. Name: ***Seichang hanashon***

It is a shrub with herbaceous herb. Common, grows wild.

Uses: Sour leaves are eaten raw as well as cooked as vegetable with pork or beef. Sold in market throughout the year in bunches @ Rs 5-10/-per bunch.

Specimen examined: Salam, 1895, 3/8/2011, Maku.

Persicaria perfoliatum L. (Polygonaceae)

Vern. Name: ***Ringoupanthi***

It is a rambling prickly shrub. Common, grows wild over the fences.

Uses: Tender leaves with young shoots are cooked as vegetable with dry fish. Rarely sold in market during September-December in heaps @ Rs 3-5-/ per heap.

Specimen examined: Salam, 1896, 3/8/2011, Maku.

Persicaria posumbu Buch.-Ham.(Polygonaceae)

Vern. Name: ***Kamsa***

It is a slender flaccid perennial herb. Cultivated in the kitchen garden.

Uses: Tender shoots and leaves are used as flavouring agent, suitable with dog meat. Sometimes fried with buffalo meat. Sold in market throughout the year in bunches @ Rs 3-5/-per bunch.

Specimen examined: Salam, 1897, 3/8/2011, Maku.

Phaseolus vulgaris L. (Fabaceae)

Vern. Name**: *Lingronthei***

It is an annual climbing herb. Cultivated in the kitchen garden

Uses: Fleshy young leaves are eaten cooked as simple boiled vegetables or mixed with other vegetables. Sold in market during April-July in heaps @ Rs 5-10/- per heap.

Specimen examined: Salam, 1882, 16/6/2011, Lauphang.

Phlogocanthus thyrsiformis (Roxb. ex Hardw) Mabb. (Acanthaceae)

Vern. Name: ***Sipchang***

It is an evergreen shrub having smooth grey bark. Occasional, planted as hedge plant as well as grows wild in waste places.

Uses: Leaves are eaten either raw or fried. Sold in market throughout the year in heaps @ Rs 5-10/- per heap.

Specimen examined: Salam, 512, 10/1/ 2009, Litan.

Physalis minima L. (Solanaceae)

Vern. Name: ***Karkaopithei***

It is an erect herb. Common, grows wild as well as cultivated in the kitchen garden.

Uses: Tender leaves are eaten cooked with other vegetables and also with dry fish. Not available in market.

Specimen examined: Salam, 1887, 3/3/2011,Hundung.

Pilea trinervia Wight (Urticaceae)

Vern. Name: ***Shatkharhan***

It is a robust succulent herb. Occasional, grows wild.

**Uses: ***Tender shoots and leaves are eaten cooked as vegetables. Not available in market.

Specimen examined: Salam, 1888, 16/2/2011, Ukhrul.

Pimpinella hastata C.B.Clarke (Apiaceae)

Vern. Name: ***Mansang***

It is a perennial pubescent herb. Occasional, grows wild.

Uses: Fleshy young leaves are eaten cooked as simple boiled vegetables or used as ingredients in the preparation of traditional dish(*Iromba*). Sold in market in bundles during June-August @ Rs 5-10/- per bundle.

Specimen examined: Salam, 1889, 16/6/2011, Lauphang.

Pisum sativum L. (Fabaceae)

Vern. Name: ***Hawai tharak***

It is an annual twinner shrub. Common, cultivated.

Uses: Fleshy tender shoots and leaves are cooked along with other vegetables, also with fish and pork curry. Dreid leaves, twigs and pod

covers are burnt and ashes locally known as '*Khari*' are used as a substitute of sodium bicarbonate. It is used in the preparation of traditional dish called *hotla ra*. Sold in market during October-January in heaps @ Rs 5-10/- per heap.

Specimen examined: Salam, 531, 17/10/2009, Lamlang.

Plantago erosa Wall. (Plantaginaceae)

Vern. Name: ***Havathan***

It is a glabrous perennial herb.Common, grows wild in moist places.

Uses: Fleshy leaves are eaten cooked as vegetables occasionally with dry small fish,considered highly palatable vegetable. Sold in market throughout the year in bundles @ Rs 3-5/- per bundle of 5-7 plants.

Specimen examined: Salam, 523, 16/5/2009, Lambui.

Pogostemon benghalensis (Burm.f.) O. Kuntze (Lamiaceae)

Vern. Name: ***Huirongrai-ri***

It is a perennial aromatic shrub. Occasional, cultivated.

Uses: Leaves are eaten raw with chutney. Not available in market.

Specimen examined: Salam, 1893, 18/8/2011, Litan.

Polygonatum cirrhifolium Royle (Alliaceae)

Vern. Name: ***Kamkui***

It is a perennial glabrous herb grows up to 1 meter in height. Rare, grows wild.

Uses: *Fleshy shoots are eaten cooked as simple boiled vegetables. Sold in market during May-August in bunches @ Rs 5-10/- per bunch.

Specimen examined: Salam, 327, 23/7/2012, Khangkhui khullen **(Plate10-E).**

Portulaca oleracea L. (Portulacaceae)

Vern. Name: ***Laibak kunda***

It is a prostrate and widely branched succulent annual herb. Common, grows wild in waste places

Uses: Tender shoots are taken as vegetables soup. Not available in market.

Specimen examined: Salam, 3527, 26/11/2012, Sikibung.

Punica granatum L. (Punicaceae)

Vern. Name: ***Kaphoi***

It is a big shrub or small tree. Common, cultivated in the home garden.

Uses: Tender leaves are eaten cooked mixed with other vegetables. Not available in market.

Specimen examined: Salam, 1894, 18/8/2011, Lambui.

Raphanus sativus L. (Brassicaceae)

Vern. Name: ***Mulla***

It is an annual herb having swollen fleshy tuberous root. Common, cultivated in the kitchen garden.

Uses: Fresh tender leaves are eaten cooked with potato in the form of *Iromba*. Also young leaves mixed with chopped onion are eaten cooked as vegetables. Sold in market during winter in bunches @ Rs 3-5/-per bunch.

Specimen examined: Salam, 3535, 9/10/2012, Nambasi khullen.

Rhynchotechum ellipticum A. DC. (Gesneriaceae)

Vern. Name: ***Zalep***

It is an erect under shrub with thick stems. Common, grows wild.

Uses: Leaves are eaten cooked in the form of *Kangshu* and *Iromba.* Sold in market throughout the year in bundles @ Rs 3-5/- per bundle of 5-7 twigs.

Specimen examined: Salam, 3537, 18/8/2012, Litan.

Rumex crispus L. (Polygonaceae)

Vern. Name: ***Palak***

It is a perennial herb. Common, grows wild in waste places

Uses: Leaves are eaten cooked as vegetable in mixing with others.It is highly delicious when it is cooked with fishes. Not available in market.

Specimen examined: Salam, 3541, 17/8/2012, Litan.

Saurauia napaulensis DC. (Saurauiaceae)

Vern. Name: ***Nakuithing***

It is a small tree. Common, grows wild.

Uses: *Tender leaves are eaten cooked with meat. Not available in market.

Specimen examined: Salam, 3543, 6/4/2012, Tolloi.

Schima wallichii Choisy (Theaceae)

Vern. Name: ***Mashuithei***

It is a large tree having lenticellate branches. Common, grows wild.

Uses: Tender leaves are either eaten raw or cooked as vegetables. Sold in market during March-June in bunches @ Rs 5-10 /-per bunch.

Specimen examined: Salam, 535, 15/5/2009, Ukhrul.

Scutellaria discolor Colebr. (Lamiaceae)

Vern. Name: ***Yenakha***

It is a slender erect annual herb. Occasional, grows wild in moist places

Uses: Leaves are eaten cooked as vegetables. Sold in market during summer in bundles @ Rs 3-5/- per bundle of 5-7 plants.

Specimen examined: Salam, 1885, 1/11/2011, Sikibung.

Sechium edule Sw. (Cucurbitaceae)

Vern. Name: ***Squash***

It is an extensive climber with perennial rootstock. Common, cultivated in the kitchen garden.

Uses: Fresh leaves are eaten cooked with pulses. Tender twig are sold in market during July-October in bunches @Rs 10-15/- per bunch.

Specimen examined: Salam, 335, 23/7/2012, Phungyar.

Sesbania sesban Merr. (Fabaceae)

Vern. Name: ***Chuchuramei***

It is a small soft wooded tree. Common, grows wild as well as cultivated in the kitchen garden.

Uses: Tender twig are eaten raw or cooked in the form of *Iromba*. Sold in market in bunches @ Rs 5/- per bunch.

Specimen examined: Salam, 3547, 18/8/2012, Litan.

Smilax perfoliata Lour. (Alliaceae)

Vern. Name: ***Shangha-yung***

It is a climber shrub. Common, grows wild.

Uses: Tender leaves are eaten cooked as vegetable with small dry fish, quite bitter in taste. Not available in market.

Specimen examined: Salam, 3549, 26/11/2012, Sikibung.

Solanum nigrum L. (Solanaceae)

Vern. Name: ***Hantehan***

It is an annual herbaceous herb. Common, grows in the wasteland.

**Uses: ***Leaves are cooked with other vegetables occasionally. Also used in the preparation of the traditional dish called *Chagem hotla ra.* Sold in market throughout the year in bunches @ Rs 5/- per bunch.

Specimen examined: Salam, 533, 17/5/2009, Nungbi khunou.

Stellaria media (L.) Vill. (Caryophylaceae)

Vern. Name: ***Yerum-Keirum***

It is an erect herb having procumbent stem .Common, grows wild.

Uses: Tender leaves and shoots are eaten cooked mostly with fishes. Sold in market during November-February in heaps @ Rs 10-15/- per heap.

Specimen examined: Salam, 1891, 18/8/2011, Lambui.

Tectona grandis L. (Verbenaceae)

Vern. Name: ***Teak***

It is a large deciduous tree. Common, grows wild as well as planted in the homestead.

Uses: Tender leaves are eaten either raw or fried. Not available in market.

Specimen examined: Salam, 532, 3/3/2009, Ukhrul.

Tetrastigma bracteolatum (Wall.) Planch. (Vitaceae)

Vern. Name: ***Theibumthei***

It is a large climber. Common, grows wild in shaded damp region of forests.

Uses: Sour tender leaves are eaten cooked as vegetable, suitable with dry fish. Sold in market during March-August in bunches @ Rs 10-15/- per bunch. Not available in market.

Specimen examined: Salam, 3572, 5/8/2012, Phadang.

Urtica parviflora Roxb. (Urticaceae)

Vern. Name: ***Lenghui***

A slender herb with stiff stinging hairs. Common in dense and less lighted region of the forest.

Uses: *Tender shoots and leaves are cooked with dal as well as with small dry fish. Not available in market.

Specimen examined: Salam, 340, 22/9/2012, Hundung.

Viola pilosa Blume (Violaceae)

Vern. Name: ***Huikhon***

It is a stoloniferous glabrous herb. Common, grows wild.

Uses: The young leaves are eaten cooked as vegetable usually with potato,also with fishes. Sold in market during winter in bundles @ Rs 3-5/- per bundle of 5-7 plants.

Specimen examined: Salam, 3590, 18/8/2012 Litan **(Plate-10-F).**

Zanthoxylum acanthopodium DC. (Rutaceae)

Vern. Name: ***Mangnangthei***

It is a straggling thorny aromatic shrub. Common, grows wild as well as cultivated in the kitchen garden.

Uses: Leaves are eaten raw with roasted red chilly chutney (*Khasathei nai*), alsoit is used as a condiment in various dishes. Sold in market during October -May in bunches @ Rs 5/- per bunch.

Specimen examined: Salam, 600, 10/7/ 2009, Litan.

Z. rhetsa (Roxb.) DC. (Rutaceae)

Vern. Name: ***Muyurpur***

It is a tree. Occasional, grows wild in the hills and sometimes cultivated.

Uses: Fleshy tender shoots are used as a condiment in various dishes especially in meat curry. Sold in market in bundles during February-June @ Rs 5-10/- per bundle of 3-5 plants.

Specimen examined: Salam, 342, 20/5/2012, Ukhrul.

4.2.3: Edible stems

Alpinia nigra (Gaertn.) Burtt. (Zingiberaceae)

Vern. Name: ***Nonishon***

A perennial rhizomatous herb. Common, cultivated as well as grows wild in wastelands.

Uses: The soft portion of the stem is used in the preparation of *Iromba* of Manipur. Sold in market during March-May @ Rs 5/-per bundle of 3-4 plants.

Specimen examined: Salam, 1811, 19/8/2012, Lambui.

Calamus guruba Buch.-Ham. (Arecaceae)

Vern. Name: ***Mathir***

It is a cluster forming rattan with well defined node and internodes.

Uses: Inner soft portion of the tender stem are eaten cooked with pulses. Sold in market during June-August @ Rs 20-25 /-per bundle of 10-12 piece of stem.

Specimen examined: Salam, 979, 15/2/2010, Ukhrul **(Plate-16-B).**

Cinnamomum zeylanicum Blume (Lauraceae)

Vern. Name: ***Sakomthing***

It is a moderate sized evergreen tree. Rare, planted as well as grows wild.

Uses: Stem bark is used as spices and condiments in the preparation of various meat curry to give more flavour and taste. Sold in market throughout the year @ Rs 25-30/- per 100gm.

Specimen examined: Salam, 907, 27/10/2010, Bungpa khunou.

Musa paradisiaca L. (Musaceae)

Vern. Name: ***Mothei***

It is a stout and erect herb. Cultivated in the homestead compound.

Uses: The inner core of the pseudo stem is eaten cooked with fermented soya bean (*Theishu*), also sometimes with pork meat**.** Sold in market throughout the year @ Rs 5-10/-per stem.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Saccharum officinarum L. (Poaceae)

Vern. Name: ***Chu***

It is an annual shrub with cylindrical stem, solid with distinct nodes and internodes. Cultivated, as cash crop.

Uses: Stem is chewed and sucked for its fresh sweet juice.

Specimen examined: Salam, 3542, 26/11/2012, Sikibung.

4.2.4: Edible Inflorescences/Flowers/Buds

Allium chinense G. Don. (Alliaceae)

Vern. Name: ***Somri***

A perennial bulbous herb. Common, cultivated in the kitchen garden.

Uses: The inflorescences are eaten raw with dry beef *Ringneokashai* or eaten in boiled vegetable soup. Sold in markets during April- July the year in bundles @ Rs10-15/- per bundle of 8-16 plants.

Specimen examined: Salam, 541, 15/10/2009, Ukhrul.

Alpinia galanga Willd. (Zingiberaceae)

Vern. Name: ***Hirui***

A perennial rhizomatous herb. Common, grows wild in the wastelands and also cultivated.

Uses: The fleshy inflorescences are eaten raw with chilly chutney (*Khasathai nai*). Sold in markets during April-August in bunch @ Rs 3/- per bunch.

Specimen examined: Salam, 1847, 19/ 8/2011, Landang.

Amaranthus spinosus L. (Amaranthaceae)

Vern. Name: ***Somchan***

It is an erect glabrous much branched weed, armed with sharp spines. Common, grows in waste places.

Uses: The inflorescences along with tender shoots are eaten cooked as vegetable,specially with small fishes. Sold in markets throughout the year in heaps @ Rs 5 /-per heap.

Specimen examined: Salam, 950, 17/8/2010, Litan.

Bauhinia purpurea L. (Caesalpiniaceae)

Vern. Name: ***Haochokwon***

A medium sized deciduous tree. Common, planted as an ornamental and also grows wild.

Uses: Flower buds and young flowers are eaten raw with chilly chutney. Not available in market.

Specimen examined: Salam, 350, 17/8/12, Litan **(Plate-12-A).**

B. variegata L. (Caesalpinaceae)

Vern. Name: ***Haochokwon***

A moderate sized tree. Common, planted as an ornamental and also grows wild.

Uses: Flower buds and young flowers are eaten raw with chilly chutney. Not available in market.

Specimen examined: Salam, 968, 16/4/2010, Ukhrul.

Bidens pilosa L. (Asteraceae)

Vern. Name: ***Phanang***

An erect, glabrous, pilose or pubescent herb. Common, grows wild weed in waste places.

Uses: Young shoots along with inflorescence are eaten raw or cooked as vegetable with fish, considered highly palatable vegetable. Not available in market.

Specimen examined: Salam, 973, 30/10/2010, Sampui.

Bombax ceiba L. (Bombacaceae)

Vern. Name: ***Tera***

It is a lofty deciduous tree. Occasional, cultivated and also grows wild.

Uses: Fleshy calyx eaten raw as well as eaten cooked as vegetables. Not available in market.

Specimen examined: Salam, 972, 16/7/2010, Leishi.

Brassica napus L. (Brassicaceae)

Vern. Name: ***Kayanghan***

An erect annual herb. Common, cultivated as an important vegetable crop.

Uses: The inflorescences along with fleshy leaves are eaten cooked in boiled vegetables or eaten with chilly chutney. Sold in market throughout the year in bundles @ Rs 10-15 per bundle.

Specimen examined: Salam, 920, 16/11/2010,Ukhrul.

Cajanus cajan (L.) Millsp. (Fabaceae)

Vern. Name: ***Khaithei***

It is an erect branching shrub. Common, cultivated in the kitchen garden.

Uses: Young flowers are eaten raw in mixed vegetables salad (*Ringneokashai*). Not available in market.

Specimen examined: Salam, 580, 16/5/2009, Lambui.

Cardamine hirsuta L. (Brassicaceae)

Vern. Name: ***Shiwokkayanghan***

It is an annual bitter herb. Common, grows as wild in moist waste places.

Uses: Bitter leaves along with flowers are eaten cooked as vegetables favourable with fish. Not available in market.

Specimen examined: Salam, 986, 16/11/2010, Ukhrul.

Centella asiatica (L.) Urban (Apiaceae)

Vern. Name: ***Kongrihan***

It is a common, herb having a long creeping stem rooting at the nodes. Common, grows in all the habitats

Uses: Fleshyleaves along with unopened flowers are eaten raw or cooked as vegetable mixing with others. Sold in market throughout the year in heaps @ Rs 3-5/- per heaps.

Specimen examined: Salam, 924, 12/9/2010, Sikibung.

Chenopodium album L. (Chenopodiaceae)

Vern. Name: ***Kazingtareihan***

It is an annual herb. Common, cultivated also wild.

Uses: Young leaves along flowers are eaten as vegetable mixing with others. Sold in market during December-February in heaps @ Rs 10 per heaps.

Specimen examined: Salam, 993, 17/12/2010, Tungou.

Cissus adnata Roxb. (Vitaceae)

Vern. Name: ***Rameihanghor***

It is a climbing shrub with bifid tendrils. Rare, cultivated as well as wild.

Uses: Leaves with inflorescences are eaten cooked as vegetables with dry fish. It is highly demand for its medicinal value in the market. Sold in market during September-January in bunches @ Rs 5/-per bunch.

Specimen examined: Salam, 508, 15/10/2009, Ukhrul.

Clerodendrum colebrookianum Walp. (Verbenaceae)

Vern. Name: ***Nareihan***

It is a large shrub. Common, grows in the wasteland and foothill.

Uses: Young twigs with flowers are cooked and eaten as boiled vegetables. It is highly demand for its medicinal value in the market. Sold in market during July-September in bundles @ Rs 10/- per bundle of 8-10 twigs.

Specimen examined: Salam, 548, 15/5/2009, Ukhrul.

C. farinosum (Roxb.) Steud.(Verbenaceae)

Vern. Name: ***Ching Moirang khanum***

It is a small tree. Occasional, grows wild.

Uses: Flowers are eaten cooked as vegetable with small dry fish, it is quite bitter in taste. Not available in market.

Specimen examined: Salam, 999, 12/9/2010, Sikibung **(Plate-12-B).**

Crotolaria juncea L. (Fabaceae)

Vern. Name: ***U-Hawai maton***

It is a small shrub. Common, cultivated in the kitchen.

Uses: Young leaves with flowers are eaten raw or cooked with other vegetables. Sold in market during October-January in heaps @ Rs 5-10/- per heap.

Specimen examined: Salam, 1806, 3/3/2011, Hundung.

Cucurma angustifolia Roxb. (Zingiberaceae)

Vern. Name: ***Koktuiwon***

It is a stem less herb having small rootstocks. Occasional, planted as well as grows wild.

Uses: Flowers are eaten cooked especially with fish. Also, flowers are dipped in gram flour batter and fried and eaten. Flowers are also eaten

cooked in the form of *Iromba.* Sold in market during July-August in heaps @ Rs 10-15/- per heap.

Specimen examined: Salam, 1810, 3/8/2011, Maku (**Plate-12-C).**

Elettaria cardamomum Maton (Zingiberaceae)

Vern. Name**:** ***Nanithei***

It is an aromatic herb. Common, cultivated as well as grows wild.

Uses: The flower buds are eaten raw or cooked with other vegetables; generally it is eaten with chilly chutney. Sold in market during December-March in heaps @ Rs 15-20/- per heaps.

Specimen examined: Salam, 949,16/11/2010, Ukhrul

Elsholtzia blanda Benth. (Lamiaceae)

Vern. Name: ***Ngarikna***

It is an annual aromatic sub shrub. Cultivated in the kitchen garden.

Uses: Flowers used as condiment in meat curry, also used as an ingredients in the preparation of dry beef *Ringneokashai.* Sold in markets during September-December in heaps @ Rs 3-5/- per heap.

Specimen examined: Salam, 506, 15/10/2009, Ukhrul.

E. communis (Coll.& Hemsl.)Diels (Lamiaceae)

Vern. Name: ***Yongpa***

It is a perennial shrub having obscurely quadrangular branches. Cultivated in the kitchen garden.

Uses: Inflorescence is taken as culinary herbs. Sold in markets during October-December in bundles @ Rs 5-10/- per bundle of 8-13 twigs.

Specimen examined: Salam, 587, 15/10/2009, Ukhrul.

Eryngium foetidum L. (Apiaceae)

Vern. Name: ***Lam sachikom***

It is an erect aromatic perennial herb. Commonly cultivated in home garden.

Uses: Inflorescence used as condiment especially in meat curies. Sold in market throughout the year in bundles @ Rs 3-5/- per bundle of 5-7plants.

Specimen examined: Salam, 595, 16/5/2009, Lambui.

Litsea cubeba Pers. (Lauraceae)

Vern. Name: ***Ushingsha***

It is a small deciduous tree. Occasional, grows wild.

Uses: Inflorescence is eaten raw with chilly chutney (*Khasathai nai)*. Sold in market during April-May in bunches @ Rs 10-15/- per bunch.

Specimen examined: Salam, 1835, 4/5/2011, Ningchou.

Moringa oleifera Lam. (Moringaceae)

Vern. Name: ***Malethei***

It is a fast growing middle sized tree. Rare, planted in the home garden.

Uses: Inflorescence are eaten cooked as vegetables or eaten fried. Not available in market.

Specimen examined: Salam, 3515, 17/8/2012, Litan.

Musa paradisiacal L. (Musaceae)

Vern. Name: ***Nana***

It is a stout and erect herb. Cultivated in the homestead compound.

Uses: Inflorescence are eaten cooked as vegetables with dry fish, also used in preparing various traditional dishes like *Iromba*, *Singju,Bora*

and *Paknam* by all the communities of Manipur. Sold in market throughout the year various shape, size inflorescence @ Rs 5-10/- per inflorescence.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul **(Plate-16-E).**

Ocimum americanum L. (Lamiaceae)

Vern. Name: ***Sari***

It is a much- branched highly aromatic erect herb. Common, cultivated in the kitchen garden.

Uses: Inflorescence used as condiment in the preparation of various food items. It has high demand for its aromatic character in the market. Sold in market during May-October in bundles @ Rs 10-15/- per bundle of 5-7 plants.

Specimen examined: Salam, 1858, 15/2/2011, Ukhrul.

Oenanthe javanica DC. (Apiaceae)

Vern. Name: ***Hanchamhan***

It is glabrous erect herb. Common, grows wild in marshy areas.

Uses: Inflorescence along with tender shoots are eaten raw in green vegetables salad *Ringneokashai* and *Iromba,* also insimple boiled form *Hupkashai.* Sold in market during March-May in bundles @ Rs 5-10/- per bundle of 6-8 Twigs.

Specimen examined: Salam, 589, 10/7/ 2009, Litan.

Parkia timoriana Merr. (Mimosaceae)

Vern. Name: ***Yongchak***

It is a middle sized unarmed tree. Common, cultivated as well as grows wild.

Uses: Inflorescence is eaten raw in the form of vegetables salad, also used as ingredients in the preparation of *Iromba*. The Inflorescence of

this plant is liked by all the communities of Manipur. Sold in market during October-November in heaps@ Rs 5-10/- per heap.

Specimen examined: Salam, 527, 15/12/2009, Ukhrul.

Phlogacanthus thyrsiformis (Roxb. ex Hardw.) Mabb. (Acanthaceae)

Vern. Name: ***Sipchang***

It is an evergreen shrub having smooth grey bark. Occasional, planted as hedge plant as well as grows wild in waste places.

Uses: Inflorescence is eaten either raw or fried. Sold in market throughout the year in heaps @ Rs 5-10/- per heap.

Specimen examined: Salam, 512, 10/1/2009, Litan **(Plate-12-D).**

Rhododendron arboreum Sm. (Ericaceae)

Vern. Name: ***Kokliwon***

It is a middle sized tree. Common, grows wild in sirohee.

Uses: Fleshy petals are eaten raw with chilly chutney or in the form of vegetables salad as well as cooked as vegetable suited with fish. Not available in market.

Specimen examined: Salam, 538, 15/5/2009, Ukhrul **(Plate-12-E).**

Rumex vesicarius L. (Polygonaceae)

Vern. Name: ***Hangam Ashinba***

It is a fleshy pale green annual. Common, cultivated in the kitchen garden.

Uses: Tender shoot with flower are eaten cooked with dry small fish. Sold in market during winter season in bunches @ Rs 5-10/- per bunch.

Specimen examined: Salam, 3541, 18/8/2012**,** Litan.

Strobilanthes auriculatus Nees (Acanthaceae)

Vern. Name: ***Kumtharuk khangrangwon***

It is medium sized shrub having spreading branches. Common, grows wild, flowering appears once in every six years.

Uses:*Fresh flower are eaten steamed cooked. Not available in the market.

Specimen examined: Salam, 3562, 8/7/2012, Ukhrul **(Plate-12-F).**

Wendlandia glabrata DC. (Rubiaceae)

Vern. Name: ***Pheija***

It is a small tree.Common, grows wild in the foot hills.

Uses: Inflorescences are eaten raw with dry roasted chilly chutney**.** Sold in market during November-January in bunches @ Rs 3-5/- per bunch.

Specimen examined: Salam, 3594, 10/12/2012, Ukhrul.

Zanthoxylum acanthopodium DC. (Rutaceae)

Vern. Name: ***Mangnangthei***

It is a straggling thorny aromatic shrub. Common, grows wild as well as cultivated in the kitchen garden.

Uses: Inflorescences are eaten raw with dry roasted chilly chutney**.** Sold in market during October -May in bunches @ Rs 5/- per bunch.

Specimen examined: Salam, 600, 10/7/2009, Litan.

Zingiber officinale Rosc. (Zingiberaceae)

Vern. Name: ***Hui***

It is an aromatic rhizomatous herb. Cultivated.

Uses: Fleshy unopened flowers are used as a condiment in various dishes especially in meat curry. Sold in market during July-August in

bundles @ Rs 5-10/- per bundle of 3-5 twigs.

Specimen examined: Salam, 540, 16/10/ 2009, Lunghar.

4.2.5: Edible fruits used as vegetable

Abelmoschus esculentus (L.) Moench. (Malvaceae)

Vern. Name: ***Bhelendi***

It is a very variable hispid annual, erect and stout stemmed bristly herb growing upto 2 metre. Cultivated in the kitchen garden and jhum fields.

Uses: The fruit is eaten either cooked or raw as vegetable. Sold in market throughout the year @ Rs. 15-20/-per kg.

Specimen examined: Salam, 931, 4/8/2010, Lamlang.

Bauhinia variegata L. (Caesalpinaceae)

Vern. Name: ***Haochokwon***

A moderate sized tree. Common, grows wild.

Uses: Mature fruits are eaten raw as vegetables salad or cooked as vegetables. Not available in market.

Specimen examined: Salam, 968, 16/4/2010, Ukhrul.

Benincasa hispida Cogn. (Cucurbitaceae)

Vern. Name: ***Katsenghei***

A large trailing climber having 2-fid tendrils. Common, cultivated as a vegetable crop.

Uses: Both mature and immature fruit are eaten cooked as simple boiled vegetables. It is also cooked with dal, which is considered as popular dish of *Tangkhul.*It is also used in the preparation of

traditional dish called *utti* by all the communities of Manipur. Sold in market throughout the year @ Rs. 15-20/- per fruit.

Specimen examined: Salam, 916, 27/10/2010, Bungpa khunou.

Cajanus cajan (L.) Millsp. (Fabaceae)

Vern. Name: ***Khaithei***

It is an erect branching shrub. Common, widely cultivated.

Uses: Immature fruit are eaten raw with fermented fish and red chilly, also cooked as simple boiled vegetables. Sold in market during November-December in heaps @ Rs 5-10/- per heap.

Specimen examined: Salam, 580, 16/5/2009, Lambui.

Canavalia gladiate (Jacq.) DC. (Fabaceae)

Vern. Name: ***Kebithei***

It is a large perennial climber. Common, cultivated and occasionally grows wild.

Uses: Young pods are eaten fresh as vegetables salad or cooked as vegetables mixing with other vegetables. Sold in market during August-December in bunches @ Rs 3-5/- per bunch.

Specimen examined: Salam, 983, 12/9/2010, Sikibung.

Capsicum annum L. (Solanaceae)

Vern. Name: ***Kasathei***

It is an herbaceous plant with profuse branching. Very common, cultivated as an important crop plant.

Uses: Pungent young fruit are eaten raw in various food items, also used as spices in various dishes, also prepare chutney. Fresh fruit sold

in heaps @ Rs 10 per heap and dried fruit sold @ Rs 200-250 /-per kg throughout the year.

Specimen examined: Salam, 586, 6/ 1/2009, Hundung.

Capsicum chinense Jacq. (Solanaceae)

Vern. Name: ***Sivathei***

It is perennial under shrubs. Very common, cultivated as an important crop plant.

Uses: Both ripe and unripe fruit are eaten as chutney, it gives a delicious scent. Among the capsicum spp, this is the most popular and costly one which is used by all the communities as spices in the preparation of fish, chicken, pork or meat curry. Also pickles are prepared from this fruit. Fresh fruit sold @ Rs 2-4/-per fruit and dried fruit sold @ 250-300/-per kg.

Specimen examined: Salam, 588, 6/1/2009, Hundung **(Plate-13-A).**

Citrus macroptera Mont. (Rutaceae)

Vern.Name: ***Heiripok***

It is a medium sized tree having compressed and angled branchlets. Rare, commonly planted in the hills.

Uses: Fleshy or dried pericarp is used as condiment. Sold in market throughout the year @ Rs 10-50/- per fruit.

Specimen examined: Salam, 996, 17/8/2010, Litan.

Cyphomandra betacea Cav. (Solanaceae)

Vern. Name: ***Mao Khamathei***

An evergreen small and fast growing tree. Common, cultivated in home garden.

Uses: Ripe fruits are eaten roasted or cooked as vegetables as substitute of *Lycopersicum esculentum.* It is very much liked by the

Tangkhul womenathough it is slightly acidic. Sold in market during September-December @ Rs 15-25 /-per kg.

Specimen examined: Salam, 917, 28/10/2010, Phange **(Plate-13-B).**

Dolichos biflorus L. (Fabaceae)

Vern. Name: ***Marongthei***

It is a climber vine having a long smooth stem. Common, cultivated in homestead compound as a vegetable crop.

Uses: Fruits are eaten cooked as vegetables with small fish. Sold in market during October-February in heaps @ Rs 10-15/-per heap.

Specimen examined: Salam, 569, 15/10/2009, Ukhrul.

Hibiscus sabdariffa L. (Malvaceae)

Vern. Name: ***Silotsougree***

It is an annual erect glabrous under shrub. Cultivated in the kitchen garden.

Uses: Red ripe fruits are eaten raw or cooked with dry small fish which are slightly sour in taste. It is also preserved after sun drying for future used. Fresh fruit sold in heaps @ Rs 10/- per heap.

Specimen examined: Salam, 553, 10/7/2009, Litan **(Plate-16-C).**

Luffa cylindrica (L.) Roem. (Cucurbitaceae)

Vern. Name: ***Narithei***

It is a large annual herbaceous climber. Cultivated as vegetables crop.

Uses: Fleshy fruit are eaten cooked as vegetable suited with fish and meat. Sometimes it is also cooked with pulses. Sold in market during July-September @ Rs 5-8/- per fruit.

Specimen examined: Salam, 1838, 16/6/2011, Lauphang.

Melothria heterophylla (Lour.) Cogn. (Cucurbitaceae)

Vern. Name: ***Hangkhapaitarere***

It is a perennial tendril climber. Common, grows wild.

Uses: Fruits are eaten cooked as simple boiled vegetables. Highly demand in market as it posseses medicinal value. Sold in market throughout the year in bunches @ Rs 5-10/- per bunch.

Specimen examined: Salam, 525, 16/5/2009, Phungrei.

Momordica dioica Roxb. (Cucurbitaceae)

Vern. Name: ***Lam kerela akhabi***

It is a perennial climber having tuberous root and slender stem.

Uses: Bitter ripe fruits are eaten cooked as vegetables mixed with other vegetables or eaten fried with potatoes and green chilly,it is suitable to use with good amount of chilies. Sold in market during summer season in bunches @ Rs 4-6/- per bunch.

Specimen examined: Salam, 1850, 18/8/2011, Lambui.

Moringa oleifera Lam. (Moringaceae)

Vern. Name: ***Malethei***

It is a fast growing middle sized tree. Rare, planted in the home garden.

Uses: Mature or immature fruits are cooked with fish or with fermented soya bean (*Theishu*). Sold in market during February –May in bundles @ Rs 10-15/- per bundle with 4-5 fruit.

Specimen examined: Salam, 3515, 17/8/2012, Litan.

Oroxylum indicum Vent. (Bignoniaceae)

Vern. Name**: *Phong***

It is a small or middle sized tree having light brown bark. Occasional, grows wild in scrub forest areas.

Uses: Unripe fruits are eaten raw in salad form mixed with roasted fermented fish and roasted red chilies.

Specimen examined: Salam, 913, 29/10/2010, Chassad.

Parkia timoriana Merr. (Mimosaceae)

Vern. Name: ***Yongchak***

It is a middle sized unarmed tree. Common, cultivated as well as grows wild.

Uses: Immature fruits are mixed with roasted fermented fish and roasted dry red chilies or raw chilies to make chutney like and eaten, also used as an ingredient in the preparation of smashed vegetables mixture (*Iromba*).The fruit of this plant is liked by all the communities of Manipur. It is also cooked with other vegetables. Sold in market in bunches during November-April @ Rs 5-20/-per fruit.

Specimen examined: Salam, 527, 15/12/2009, Ukhrul **(Plate-13-C).**

Phaseolus vulgaris L. (Fabaceae)

Vern. Name: ***Lingronthei***

It is an annual climbing herb. Cultivated in the kitchen garden

Uses: Mature fruits are eaten as simple boiled or steam cooked, also cooked mixed with other vegetables. Sold in market during October – January @ Rs 10-20/-per kg.

Specimen examined: Salam, 1882, 8/10/2012, Nambasi khunou.

Piper nigrum L. (Piperaceae)

Vern. Name: ***Gul-marich***

It is a climber. Rare, cultivated.

Uses: Mature dried fruit are used as a condiment in various dishes. Sold in market throughout the year @ Rs 10-15/- of about 100 gm.

Specimen examined: Salam, 3525, 26/3/2012, Sikibung.

Psophocarpus tetragonolobus DC. (Fabaceae)

Vern. Name: ***Tengnoumanbi***

It is a twinning herb with large tuberous root. Common, cultivated.

Uses: Fresh mature fruits are eaten raw with roasted or boiled red chilies chutney. It is also eaten cooked mixed with other vegetables as well as used as ingredients in *Iromba.* Sold in market during May-October @ Rs 15-20/-per kg.

Specimen examined: Salam, 3530, 9/10/2012, Nambasi khullen **(Plate-13-D).**

Sechium edule Sw. (Cucurbitaceae)

Vern. Name: ***Squash***

It is an extensive climber with perennial rootstock. Common, cultivated in the kitchen garden.

Uses: Fruits are eaten cooked as simple boiled vegetables or mixed with other vegetables; also it makes a popular dish with pork or with dal.

Specimen examined: Salam, 335, 23/7/2012, Phungyar.

Sesbania sesban Merr. (Fabaceae)

Vern. Name: ***Chuchuramei***

It is a small soft wooded tree. Ocassional, grows wild as well as cultivated in the kitchen garden

Uses: Fruits are eaten fresh with roasted dry chilies chutney or used as ingredients in the preparation of mixed smashed vegetables (*Iromba*).

Sold in market in bunches during August-November @ Rs 3-5/-per bunch.

Specimen examined: Salam, 3547, 18/8/2012, Litan.

Solanum anguivi Lam. (Solanaceae)

Vern. Name: ***Kapkhathei***

It is a much branched and very prickly under shrub. Common, grows wild.

Uses: Fruits are eaten fresh with roasted dry chilies chutney or mixed with green chilies. Sold in market in bunches during May- November @ Rs 3-5/-per bunch.

Specimen examined: Salam, 536, 16/5/2009, Lambui.

Solanum gilo Raddi. (Solanaceae)

Vern. Name: ***Ayanthei Kachar***

It is an erect herbaceous plant. Common, cultivated in the kitchen garden.

Uses: Fruits are eaten fresh or fried. Sold in market throughout the year @ Rs 10-15/- per kg.

Specimen examined: Salam, 1863, 18/8/2011, Lambui.

Solanum spirale Roxb. (Solanaceae)

Vern. Name: ***Hanchonghan***

It is a small fruiting shrub. Cultivated in the kitchen garden.

Uses: *Fruits are eaten fresh with roasted fermented fish and red chilies or fried. Not available in the market.

Specimen examined: Salam, 325, 18/11/2012, Phungcham **(Plate-13- E).**

Solanum torvum Schltdl. (Solanaceae)

Vern. Name: ***Kapkhathei***

It is a tomentose shrub having a stout stem. Common, grows wild.

Uses: Fruits are eaten fresh with roasted dry chilies chutney. Sold in market in bunches during May-September @ Rs 3-5/-per bunch.

Specimen examined: Salam, 545, 15/5/2009, Ukhrul **(Plate-13-F).**

Vicia faba L. (Fabaceae)

Vern. Name: ***Hawai mubi***

It is a herb. Common, cultivated in the kitchen garden.

Uses: Fruits are eaten cooked as vegetable mixed with other vegetables.Sometimes it is also cooked with fermented soybean along with the fruit of *Parkia timoriana.* Also, it is used as an ingredient in the preparation of traditional dish *Iromba.* Sold in market during November-March @ Rs 15-30/-per kg.

Specimen examined: Salam, 3586, 8/10/2012, Nambasi khunou **(Plate-16-F).**

Vigna sesquipedalis (L.) Fruw. (Fabaceae)

Vern. Name: ***Ayokrathei***

It is an annual climbing herb. Cultivated in home garden.

Uses: Fruits are eaten raw in salad form with roasted fermented fish and red chillies as well as cooked as vegetable with small dry fish. Sold in market in bunches during May-August @ Rs 5-10/- per bunch.

Specimen examined: Salam, 3588, 8/10/2012, Nambasi Khunou.

V. unguiculata (L.) Walp. (Fabaceae)

Vern. Name: ***Mareithei***

It is an annual climbing herb. Cultivated in home garden.

Uses: Fruits are eaten fried or cooked as a vegetable with small dry fish. Sold in market in bunches during June-October @ Rs 5-10/- per bunch.

Specimen examined: Salam, 3589, 9/10/2012, Nambasi khullen.

Zanthoxylum acanthopodium DC. (Rutaceae)

Vern. Name: ***Mangnangthei***

It is a straggling thorny aromatic shrub. Common, grows wild as well as cultivated in the kitchen garden.

Uses: Fruits are eaten raw with chutney (*khasathei nai*), also it is used as a condiment in various dishes. Sold in market during October -May in bunches @ Rs 5/- per bunch.

Specimen examined: Salam, 600, 10/7/2009, Litan.

4.2.6: EDIBLE FRUITS

Ananas comosus (L.) Merr. (Bromeliaceae)

Vern. Name**: *Chingomthei***

It is a tufted stem less herb having numerous, elongated and finely toothed rosulate leaves. Cultivated large scales in slopes of hills.

Uses: Fleshy ripe fruits are eaten raw and unripe fruits are cooked with sugar. Fruits are used for jelly and squash preparation. Also, the whole fruit are used for the preparation of traditional fruit beer of *Tangkhul.* The plant is suitable for commercial cultivation. Sold in market during July -September @ Rs 10-15/- per fruit. Fruit beer @ Rs 50-80/- per bottle.

Specimen examined: Salam, 505, 10/7/2009, Litan.

Antidesma bunius Spreng. (Euphorbiaceae)

Vern. Name: ***Mikchurathei***

It is a deciduous shrub or small tree. Common, grows wild in forests.

Uses: Ripe fruits are eaten raw. Sold in market during June-August in bunches @ Rs 10-15/- per bunch.

Specimen examined: Salam, 952, 28/10/2010, Phange.

Artocarpus lakoocha Roxb. (Moraceae)

Vern.Name: ***Harikonthong***

It is a large deciduous tree with a large spreading crown. Common, planted.

Uses: Ripe fruits are eaten raw. Not available in market.

Specimen examined: Salam, 956, 12/9/2010, Sikibung.

Averrhoa carambola L. (Oxalidaceae)

Vern. Name: ***Heinoujam***

A small tree having fluted and dark- grey irregular stem. Occasional, cultivated or wild.

Uses: Ripe fleshy fruits which are quite acidic are eaten raw or cooked with sugar. Fruits are also used for the preparation of jam and candy. It is highly demand in market as it posses medicinal properties. It can also be preserved by slicing and sun drying and usually chewed after meal. Sold in market during October-January @ Rs 5/- per fruit.

Specimen examined: Salam, 962, 30/10/2010, Bungpa khullen.

Baccaurea ramiflora Lour. (Euphorbiaceae)

Vern. Name: ***Kaphekra***

An evergreen middle sized tree. Planted in the homestead compound and grows wild.

Uses: The delicious pulp of the fruit is eaten raw. Sold in market during May-July @ Rs 20-25/- per kg.

Specimen examined: Salam, 964, 16/7/2010, Leishi.

Calamus tenuis Roxb. (Arecaceae)

Vern.Name: ***Mathirathei***

It is a slender climber. Rare, cultivated in home garden.

Uses: Fruits are eaten raw. Sold in market during February-April @ Rs 40-60/- per kg.

Specimen examined: Salam, 977, 20/8/2010, Khangkhui khullen. **(Plate-15-A).**

Carica papaya L. (Caricaceae)

Vern. Name**: *Awathabi***

It is a branches fast growing tree. Very common, cultivated.

Uses: Ripe fruit are eaten raw. The immature fruit are also eaten raw mixed in vegetables salad or cooked as simple boiled vegetables. Sold in market throughout the year @ Rs 8-15/-per fruit.

Specimen examined: Salam, 546, 15/5/2009, Ukhrul.

Celtis australis L.(Ulmaceae)

Vern. Name: ***Heikreng***

It is a tree having slender branches. Occasional, planted in homestead compound.

Uses: Ripe fruit are eaten raw. Not available in market.

Specimen examined: Salam, 992, 15/7/2010, Phalang.

Citrus aurantium L. (Rutaceae)

Vern. Name: ***Komla***

It is a small tree. Common, planted in homegarden.

Uses: Ripe fruits are eaten fresh. Fruit juice is also prepared. Sold in market during winter season @ Rs 5/-per fruit.

Specimen examined: Salam, 909, 12/9/2010, Sikibung.

C. jambhiri Lush. (Rutaceae)

Vern. Name: ***Shigomthei***

It is a small tree. Common, planted in home garden

Uses: Ripe fruits which are very sour are eaten fresh with red chilly powdered and common salt, also used to make a very refreshing drink in hot weather. Fruits are used for pickles, also epicarp are used for the preparation of candy. Sold in market throughout the year @ Rs 2-4/- per fruit.

Specimen examined: Salam, 994, 30/10/2010, Sampui.

C. limon (L.) Burm. f. (Rutaceae)

Vern. Name: ***Champra lembu***

It is an evergreen shrub. Common, planted in homegarden

Uses: same as *C. jambhiri.*Sold in market throughout the year @ Rs 4-6 per fruit.

Specimen examined: Salam, 995, 30/10/ 2010, Sampui.

C. maxima (Burn.) Merr. (Rutaceae)

Vern. Name: ***Nobab***

It is a small profusely branching tree. Common, planted in homestead compound.

Uses: The fleshy fruits are eaten raw with chilly and common salt. Sold in market during winter season @ Rs 10-15/- per fruit.

Specimen examined: Salam, 912, 30/10/2010, Sampui **(Plate-15-B).**

C. medica L. (Rutaceae)

Vern. Name: ***Heijang***

It is a big shrub having erect thorns. Common, cultivated.

Uses: The fleshy mesocarp of the fruit which is sweet scented is eaten fresh. The fruit is used in ritual ceremony by the Manipuri community. Sold in market throughout the year @ Rs 15-25/- per fruit.

Specimen examined: Salam, 997, 12/9/2010, Sikibung **(Plate-14-A).**

Dillenia indica L. (Dilleniaceae)

Vern. Name: ***Heigri***

It is an evergreen tree that are often fluted and buttressed at the base with a large oval crown. Rare, cultivated or wild.

Uses: Fruits are eaten either raw or cooked as vegetable. Not available in market.

Specimen examined: Salam, 565, 10/7/2009, Litan.

Docynia indica (Colebr.) Decne. (Rosaceae)

Vern. Name: ***Theithukthei***

It is a moderate-sized deciduous tree with young parts and inflorescence woolly.

Uses: Ripe and unripe fruit which are very sour are eaten raw or roasted. Sometimes fresh rhizome of *Colocasia esculenta* and *Docynia indica* fruits are grounded together in a wooden mortar, common salt and pepper are also added for better taste. This is the most common traditional food item for all the communities in Manipur which is locally known as *hei singju.*Ripe fruit after slicing, it is boiled and the

liquid is preserved for local drinks. Fruits are also used for the preparation of local candy. Sold in market during February-September @ Rs 15-25 /-per kg. Fruit beer @ Rs 70-80/- per bottle.

Specimen examined: Salam, 567, 15/10/2009, Shiroy chingkha **(Plate-14-B).**

Duchesnea indica L. (Rosaceae)

Vern. Name: ***Lam hei***

It is a perennial herb. Common, grows wild.

Uses: Ripe fruits are eaten raw. *Tangkhul* children are fond of this fruit. Not available in market.

Specimen examined: Salam, 570, 15/10/2009, Ukhrul.

Elaegnus conferta Roxb. (Elaeagnaceae)

Vern.Name: ***Tapunthei***

A much branched scandent woody shrubwith spine. Common, grows wild as well as cultivated in home garden.

Uses: The red ripe fruits are eaten raw with common salt.Also fruit beer is prepared from it. Sold in market during Febraury-April @ Rs 10-15/-kg. Fruit beer @ Rs 60-80/- per bottle.

Specimen examined: Salam, 574, 15/12/2009, Ukhrul.

Elaeocarpus floribundus Blume (Elaeocarpaceae)

Vern. Name**: *Fashongthei***

It is a middle sized tree having glabrous branchlets. Occasional, cultivated as well as grows wild.

Uses: The mature fruits are eaten raw, or cooked with cane sugar and

also prepared pickles and fruit beer. Sold in market during October-November @ Rs 10-15/-kg. Fruit beer @ Rs 40-60/- per bottle.

Specimen examined: Salam, 906, 4/8/2010, Lamlang.

Ficus cunea Steud. (Moraceae)

Vern. Name: ***Heirit***

It is a small or middle sized tree. Occasional, grows wild.

Uses: Ripe fruits are eaten fresh, it has a beautiful aroma. Among the traditional fruit beer, the fruit beer made from this fruit are the most costly one. Sold in market throughout the year@ Rs 5-10/-per kg.

Specimen examined: Salam, 594, 15/10/2009, Shiroy chingkha.

F. glomerata Roxb. (Moraceae)

Vern. Name: ***Khourathei***

It is a large deciduous tree. Occasional, grows wild.

Uses: Ripe and unripe fruits are eaten raw. Sometimes unripe fruits are eaten mixed with fermented fish (*Ngari*), pepper and common salt. Not available in market.

Specimen examined: Salam, 597, 16/5/2009, Lambui.

F. palmata Forsk.(Moraceae)

Vern. Name: ***Heiba***

It is a small evergreen tree whose young parts are pubescent. Occasional, grows wild or cultivated in home garden

Uses same as *F. glomerata.* Not available in market.

Specimen examined: Salam, 599, 15/10/2009, Shiroy chingkha.

Flacourtia jangomas Raeusch.(Flacourtiaceae)

Vern. Name: ***Heitroi***

It is a small deciduous tree. Occasional, grows wild.

Uses: Sweet blackish fruits are eaten raw. Not available in market.

Specimen examined: Salam, 908, 17/ 8/2010, Litan.

Garcinia pedunculata Roxb. (Clusiaceae)

Vern. Name: ***Changneira***

It is a large tall tree.Grows wild as well as planted.

Uses: The ripe fruits which are very sour are eaten raw or cooked with sugar. Also,it can also be preserved by slicing and drying. Sold in market during October-February @Rs 15-30 per fruit.

Specimen examined: Salam, 919, 17/12/2010, Tungou **(Plate-15-C).**

G. indica Choisy (Clusiaceae)

Vern. Name*:* ***Atheikathur***

It is a tall evergreen tree. Grows wild as well as planted.

Uses: Ripe fruits are eaten raw but very acidic. Sold in market in bunch during April-July @ Rs 15-20 per bunch.

Specimen examined: Salam, 915, 16/2/2010, Ukhrul.

Juglans regia L. (Juglandaceae)

Vern. Name: ***Shirangthei***

It is a large deciduous tree. Rare, grows wild.

Uses: Dried mature fruits are eaten. Sold in market throughout the year @ Rs 15-2 kg.

Specimen examined: Salam, 926, 30/10/2010, Sampui.

Meyna spinosa Robyns. **(**Rubiaceae)

Vern. Name: ***Theibethei***

It is a small tree with ascending branches. Common, planted in home garden.

Uses: Ripe dried fruits are eaten with salts and pepper. It is threaded with thin bamboo stripe and hung for sun drying for future used. Sold in market during June-November in heaps @ Rs 4-6/- per heap.

Specimen examined: Salam, 1857, 16/6/2011, Chungkai.

Morus nigra L. (Moraceae)

Vern. Name**: *Kaharathei***

It is a small deciduous tree. Occasional, cultivated for feeding silk worm.

Uses: Ripe fruits are eaten raw. Not available in market.

Specimen examined: Salam, 1863, 16/6/2011, Chungkai.

Musa paradisiacal L. (Musaceae)

Vern. Name: ***Mothei***

It is a stout and erect herb. Common, cultivated in the homestead compound.

Uses: Ripe fruits are eaten raw. Fruits are also used for the preparation of traditional fruit beer. Sold in market in bunches throughout the year @ Rs 15-60/- per bunch. Fruit beer @Rs 100/- per bottle.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Myrica esculenta Ham. (Myricaceae)

Vern. Name: ***Mahuithei***

It is a small evergreen tree. Occasional, cultivated as well as grows wild.

Uses: Ripe fresh fruits are eaten raw. Ripe fruits are also used for the preparation of traditional fruit beer**.** Sold in market during March-May @ Rs 15-6/- per bunch.

Specimen examined: Salam, 1867, 12/9/2011, Nampisha **(Plate-14-C).**

Passiflora edulis Sims. (Passifloraceae)

Vern. Name: ***Sitapor***

It is a twinner plant. Common, cultivated in the home garden.

Uses: Pulp of the ripe fruits are eaten, fruit juice such as squash are also prepared. Ripe fruits are also used for the preparation of fruit beer. Sold in market during May-September-@Rs 20-25/-kg. Fruit beer @ Rs 80-100/-per bottle.

Specimen examined: Salam, 550, 15/5/2009, Ukhrul.

Phoenix sylvestris (L.) Roxb. (Arecaceae)

Vern. Name: ***Khaneithei***

It is a dwarf palm.Grows wild on open hills.

Uses: Kernel of the ripe fruits is eaten raw. Sold in market in bunches during May-June @ Rs 10-15/-per bunch.

Specimen examined: Salam, 1883, 1/12/2011, Grihang.

Phyllanthus emblica L. (Euphorbiaceae)

Vern. Name: ***Shakshathei***

It is a middle sized tree having crooked trunk. Common, planted in the home garden as well as grows wild.

Uses: Fruits are eaten raw, or dried; pickles are also prepared. Fruit is candied with sugar, also prepared traditional fruit beer. Sold in market

during September-Febraury@Rs 10-15/-kg. Fruit beer @Rs 80-100/-per bottle.

Specimen examined: Salam, 514, 17/10/2009, Lamlang.

Prunus armeniaca L. (Rosaceae)

Vern. Name: ***Malhei***

It is a middle sized tree.Occasional, planted in the home garden.

Uses: Ripe yellowish fruits which are very acidic are eaten raw with salt, also pounded with red chillies and salt and eaten by young girls. Sold in market during May-July @ Rs 10-15/-kg.

Specimen examined: Salam, 1900, 15/2/2011, Ukhrul.

P. cerasoides D. Don. (Rosaceae)

Vern. Name: ***Saharthei***

It is a large deciduous tree. Common, grows wild.

Uses: Ripe blackish fruits are eaten raw with delicacy. Sold in market in bunches during October - June @Rs 10-15-per bunch of 20-25 fruits.

Specimen examined: Salam, 1874, 1/12/2011, Grihang.

P. salicina Lindl.(Rosaceae)

Vern. Name: ***Heikhathei***

It is a deciduous small tree.Common, planted in the kitchen garden

Uses: Ripe fruits are eaten raw with salt. Traditional fruit beer is also prepared. Sold in market during August -September @ Rs 10-15/-Kg. Fruit beer @ Rs 40-60/-per bottle.

Specimen examined: Salam, 900, 15/7/2010, Phalang **(Plate-14-D).**

P. persica (L.) Batsch (Rosaceae)

Vern. Name: ***Mayangthei***

It is a small and middle sized deciduous tree.Common, planted in the kitchen garden.

Uses: Ripe fruits are eaten raw which are slightly sour to sweet in taste.Fruit beer is also prepared. Sold in market during May-June @Rs 10-15/-per kg. Fruit beer @ Rs 40-60/-per bottle.

Specimen examined: Salam, 927, 16/4/2010, Ukhrul.

P. nepalensis L. (Rosaceae)

Vern. Name: ***Theikanthei***

It is a small deciduous woody tree. Occasional, planted in the home garden or grows wild.

Uses: Ripe blackish fruits are eaten raw with delicacy. Jelly and fruit juice are also prepared from it. Fruit juice @ Rs 50-60/- per bottle.

Specimen examined: Salam, 3529, 6/4/2012, Tolloi **(Plate-15-D).**

Psidium guajava L. (Myrtaceae)

Vern. Name**: *Pungdonrong***

It is a small branched tree.Common,planted in the kitchen garden.

Uses: Ripe and unripe fruits are eaten raw. Sold in market during November-Janaury @Rs 15-20/-Kg. Fruit beer @ Rs 40-60/- per bottle.

Specimen examined: Salam, 554, 15/10/2009, Ukhrul.

Punica granatum L. (Punicaceae)

Vern. Name: ***Kaphoi***

It is a big shrub or small tree. Common, cultivated in the home garden.

Uses: Testa of ripe fruits is eaten raw with salt and green chillies by the young girls. Sold in market during November- febraury @ Rs 5-10 per fruit.

Specimen examined: Salam, 1894, 18/8/2011, Lambui.

Pyrus communis L. (Rosaceae)

Vern. Name: ***Kapaithei***

It is a middle sized deciduous tree. Occasional, grows wild as well as planted in the kitchen garden.

Uses: Sweet ripe fruits are eaten raw with delicacy. Sold in market during June-August @ Rs 2-5per fruit.

Specimen examined: Salam, 904, 4/8/2010, Lamlang.

P. pashia Buch.-Ham. (Rosaceae)

Vern. Name: ***Lam Kapaithei***

It is a middle sized decidous tree. Occasional, grows wild.

Uses: Sweet ripe fruits are eaten raw by young girls and boys. Not available in market.

Specimen examined: Salam, 3531, 6/4/2012, Tolloi.

Rhus semialata Murr. (Anacardiaceae)

Vern. Name: ***Khamkhuithei***

It is a deciduous shrub or small tree. Common, planted as well as grows wild.

Uses: Reddish ripe fruits which are very sour are eaten fresh or powdered with salt. Fruits are soaked in water overnight and the juice

is taken. Fruit is also candied with cane sugar. Sold in market during June-August @ Rs 2-5/-per fruit.

Specimen examined: Salam, 3559, 18/8/2012, Litan **(Plate-14-E).**

Rosa sericea Lindl. (Rosaceae)

Vern. Name: ***Hashongthei***

It is a small bushy shrub. Occasional, grows wild.

**Uses: ***Ripe fruits are eaten raw. Not available in market

Specimen examined: Salam, 1847, 16/2/2011, Ukhrul.

Rubusalceifolius poir. (Rosaceae)

Vern. Name: ***Karathei***

It is a subscandent shrubs.Occasional, grows wild.

Uses: Ripe fruits are eaten raw with much relish by the children. Not available in market.

Specimen examined: Salam, 3539, 5/4/2012, Phadang.

R. ellipticus Smith (Rosaceae)

Vern. Name: ***Karathei***

It is a large straggling, robust shrub. Common, grows wild.

Uses same as *R.alceifolius* .Not available in market

Specimen examined: Salam, 3540, 5/4/2012, Phadang.

Spondias axillaris Roxb. (Anacardiaceae)

Vern. Name: ***Khursongthei***

It is a middle sized deciduous tree.Rare, grows wild as well as planted in the home garden.

**Uses: ***Ripe fruits are eaten raw. Sold in market during July-October @ Rs 15-20/-per kg.

Specimen examined: Salam, 3558, 5/8/2012, Phadang.

S. pinnata (L.f.) Kurz. (Anacardiaceae)

Vern. Name: ***Heining***

It is a middle sized deciduous tree.Rare, planted in the home garden.

Uses: Ripe fruits are eaten raw; unripe green fruits are cooked with cane sugar, also prepared pickles. Sold in market during July-October @Rs 15-20/-kg.

Specimen examined: Salam, 549, 10/7/2009, Litan.

Syzygium cumini (L.) Skeels (Myrtaceae)

Vern. Name: ***Chomshathei***

It is a large evergreen tree. Occasional, cultivated.

Uses: Blackish ripe fruits are eaten raw.Jam is also prepared from it. Sold in market in heaps during May-July @ Rs 10-20/- per heap.

Specimen examined: Salam, 3565, 18/8/2012, Litan.

Tamarindus indica L. (Caesalpinaceae)

Vern. Name: ***Mange***

It is a large handsome tree. Occasional, cultivated as well as grows wild.

Uses: Sour ripe fruits are eaten raw with salt, sugar and red dry chillies. It is also eaten cooked with sugar, candied are also prepared. Sold in market throughout the year @ Rs 15-20/-kg.

Specimen examined: Salam, 3568, 18/8/2012, Litan **(Plate-15-E).**

Terminalia citrina Roxb. (Combretaceae)

Vern. Name: ***Manahi***

It is a medium sized to large deciduous tree. Occasional, cultivated or grows wild.

Uses: Ripe and unripe fruits are eaten raw with salt. Sold in market during February - March @ Rs 3-5/-per fruits.

Specimen examined: Salam, 346, 16/11 /2012, Sikibung.

Tetrastigma bracteolatum (Wall.) Planch. (Vitaceae)

Vern. Name: ***Theibumthei***

It is a large climber. Common, grows wild in shaded damp region of forests.

Uses: Ripe fruits are eaten raw with salt as well as cooked with sugar. Sold in market in bunches during July-September @ Rs 5-10/-per bunch.

Specimen examined: Salam, 3572, 5/8/2012, Phadang.

Toddalia asiatica (L.) Lam. (Rutaceae)

Vern. Name: ***Nayong komla***

It is a large scandent evergreen.Common, grows wild.

Uses: ******Ripe fruits are eaten raw with much relish by the children. Not available in the market.

Specimen examined: Salam, 3579, 10/10/2012, Lunghar.

Viburnum foetidum Wall. (Caprifoliaceae)

Vern. Name: ***Raikuirathei***

It is a shrub having the young parts pubescent.Occasional, grows wild.

Uses: Ripe fruits are eaten raw. Not available in the market.

Specimen examined: Salam, 3585, 10/10/2012, Lunghar **(Plate-14-F).**

Vitis vinifera L. (Vitaceae)

Vern. Name: ***Trakhathei***

It is a stout climber.Cultivated in home garden.

Uses: Ripe fruits are eaten fresh. Squash and fruit beer is also prepared. Sold in market during winter season @ Rs 5/-per fruit.

Specimen examined: Salam, 3592, 8/7/2012, Ukhrul.

Ziziphus mauritiana Lam.(Rhamnaceae)

Vern. Name: ***Boroi***

It is a small tree.Common, cultivated.

Uses: Sweet ripe fruits are eaten raw. Fruits is also candied with sugar. Pickles are also prepared. Sold in market during Janaury-March @ Rs 10-15/-per kg.

Specimen examined: Salam, 3597, 18/8/2012, Litan.

4.2.7: Edible seeds

Artocarpus heterophyllus Lam. (Moraceae)

Vern. Name: ***Theibo***

It is a large evergreen tree having large dense crown. Common, planted in home garden.

Uses: Seeds are eaten roasted. Sold in market during May-August @ Rs 10-25/- per fruit.

Specimen examined: Salam, 955, 4/8/2010, Lamlang.

Brassica campestris L. (Brassicaceae)

Vern. Name: ***Kayanghan***

It is an erect annual herb. Very common, cultivated as an important vegetable crop.

Uses: Seeds are pounded or crushed and the oil obtained is used as vegetable oil. Sold in market throughout the year @ Rs 25-30/- per kg.

Specimen examined: Salam, 1000, 12/9/2010, Sikibung.

Cajanus cajan (L.) Millsp. (Fabaceae)

Vern. Name: ***Khaithei***

It is an erect branching shrub. Common, widely cultivated.

Uses: Seeds are dried and eaten cooked. Sold in market throughout the year @ Rs 30-60/- per kg.

Specimen examined: Salam, 580, 16/5/2009, Lambui.

Castanopsis hystrix A.DC. (Fagaceae)

Vern. Name: ***Kahaothing***

It is a large evergreen tree. Grows wild in the forest.

Uses: Nuts are eaten raw or roasted. Very rarely sold in market during August-January @ Rs 10/-per kg.

Specimen examined: Salam, 989, 29/10/2010, Khoikai.

Coriandrum sativum L. (Apiaceae)

Vern. Name: ***Sachikom***

It is an annual glabrous plant. Very common, cultivated as an important condiment.

Uses: Seeds powdered are used as condiment in the preparation of various food items. Sold in market throughout the year @ Rs 5-8/- of about 100gm.

Specimen examined: Salam, 568, 15/10/2009, Ukhrul.

Cucurbita maxima Duch. (Cucurbitaceae)

Vern. Name: ***Khaimaithei***

It is a large climbing annual herb. Very common, cultivated in jhum fields considered as important crop.

Uses: Seeds are eaten fried mixed with other vegetables. Sold in market he year @ Rs 15-25/- per fruit.

Specimen examined: Salam, 911, 17/7/2010, Shakok.

Elettaria cardamomum Maton (Zingiberaceae)

Vern. Name: ***Elaichi***

It is a pungent aromatic herbaceous perennial plant. Ocassional cultivated as well as grows in wild.

Uses: Seeds are used as spices as well as chewable for mouth freshners, also dried seeds are used as ingredients in the preparation of pan. Sold in market throughout the year @ Rs 30-45 /- per kg.

Specimen examined: Salam, 578, 15/12/2009, Ukhrul.

Euryale ferox Salisb. (Nymphaceae)

Vern. Name: ***Thangjing***

It is a very prickly aquatic herb. Commonly found in the valley.

Uses: Seeds are eaten raw or cooked with other vegetables. Also used as an ingredient in the preparation of *Iromba.* Sold in market during June-August @ Rs5-10/- per fruit.

Specimen examined: Salam, 591, 10/7/ 2009, Litan.

Glycine max Merr. (Fabaceae)

Vern. Name: ***Maranthei***

It is a sub-erect, stout annual herb. Common, cultivated in jhum fields considered as important pulse.

Uses: Seeds are eaten fried or boiled. Fermented soyabean (*Theishui*) are also used for preparing variety of local dishes. Sold in market throughout the year @ Rs 25-40/-per kg.

Specimen examined: Salam, 318, 20/9/2012, Awang kasom.

Hibiscus sabdariffa L. (Malvaceae)

Vern. Name: ***Silotsougree***

It is an annual erect glabrous undershrub. Common, cultivated in the kitchen garden.

Uses: Seeds are cooked with dry fish. Sold in market throughout the year @ Rs 15 -20 /-kg.

Specimen examined: Salam, 553, 10/7/2009, Litan.

Parkia timoriana Merr. (Mimosaceae)

Vern. Name: ***Yongchak***

It is a middle sized unarmed tree. Common, cultivated as well as grows wild.

Uses: Mature seeds are eaten raw or cooked with other vegetables. Dried seeds sold in market throughout the year @ Rs 25-30 /-per kg.

Specimen examined: Salam, 527, 15/12/2009, Ukhrul.

Perilla frutescens (L.) Britt. (Lamiaceae)

Vern. Name: ***Hanshi***

It is annual aromatic undershrubs. Common, cultivated in the home garden.

Uses: Seeds are roasted and pounded and used as an ingredient in the preparation of indigenous vegetables salad by all the communities of Manipur. Also, it is pounded and mixed with cane sugar and prepared candy and traditional cake which are very delicious. Sold in market throughout the year @ Rs 15-25 /-per kg.

Specimen examined: Salam, 1879, 15/2/2011, Ukhrul.

Phaseolus lunatus L. (Fabaceae)

Vern. Name: ***Kalendri***

It is a perennial climber. Common, cultivated in the kitchen garden.

Uses: Seeds are eaten cooked with other vegetables, suitable with dry fish. Sold in market in heaps during November-March @ Rs 10-15/-per heap.

Specimen examined: Salam, 1881, 15/2/2011, Ukhrul.

Phaseolus angularis (Willd.) W.F.Wight (Fabaceae)

Vern. Name**:** ***Theirathei***

It is a perennial climber. Common, cultivated in the kitchen garden.

Uses: Fresh seeds are eaten cooked with dry fish or dry meat. Dry seeds are used as pulse. Fresh one sold in market during November-March @ Rs 15-30/-kg and dry one sold throughout the year @ Rs 20-25/-per kg.

Specimen examined: Salam, 3522, 8/10/2012, Nambasi khunou.

Phaseolus vulgaris L. (Fabaceae)

Vern. Name: ***Lingronthei***

It is an annual climbing herb. Common, cultivated in the kitchen garden.

Uses: Fresh seeds are eaten cooked with other vegetables along with small dry fish. Fresh one sold in market throughout the year @ Rs 15-30/-kg.

Specimen examined: Salam, 1882, 16/6/2011, Lauphang

Piper nigrum L. (Piperaceae)

Vern. Name**:** ***Uchithi***

It is a climber. Rare, cultivated.

Uses: Seeds are used as condiment in the preparation of various food items. Sold in market throughout the year @ Rs 5-8/- of about 100gm.

Specimen examined: Salam, 3525, 26/11/2012, Sikibung.

Punica granatum L. (Punicaceae)

Vern. Name: ***Kaphoi***

It is a big shrub or small tree. Common, cultivated in the kitchen garden.

Uses: Testa of ripe fruits along with seeds is eaten raw with salt and green chillies. Sold in market during November- Febraury @ Rs 5-10/- per fruit.

Specimen examined: Salam, 1894, 18/8/2011, Lambui.

Vicia faba L. (Fabaceae)

Vern. Name: ***Hawai mubi***

It is a herb. Common, cultivated in the kitchen garden.

Uses: Fresh seeds are eaten cooked with dry fish or dry meat or mixed Dry seeds are used as pulse. Fresh one sold in market during November-March @ Rs 15-30/-per kg and dry one sold throughout the year @ Rs 20-25/-per kg.

Specimen examined: Salam, 3586, 8/10/2012, Nambasi khunou. **(Plate-16-F).**

4.2.8: CEREALS AND MILLETS

Coix lacryma-jobi L. (Poaceae)

Vern. Name: ***Ngum***

It is an annual grass. Common, cultivated in the

Uses: Grains are eaten cooked, used as a substitute for rice. Sold in markets @ Rs 20-25 /- per kg.

Specimen examined: Salam, 3506, 8/10/2012, Jessami **(Plate-31-B).**

Oryza sativa L. (Poaceae)

Vern. Name: ***Maa***

It is an annual herb. Cultivated as staple food.

Uses: Grain husked into rice used as staple food of the *Tangkhul* community. Sold in markets @ 25-30/- per kg.

Note: Since paddy is the most important crop that sustain life for the *Tangkhul* tribe. Both jhum and terrace (wet) cultivation are practiced and about 65 varieties of rice are grown in the district. Several varieties of Sweet or Sticky rice are also grown which constituted an essential item for its conversion into wine and rice beer besides making *Tangkhul* cakes in its specialty for normal consumption and rituals.

Specimen examined: Salam, 3520, 8/7/2012, Ukhrul.

Setaria italica (L.) P. Beauv.(Poaceae)

Vern. Name**: *Lang***

It is an annual herb. Common, cultivated in the jhum fields.

Uses: Grains are eaten cooked, used as a substitute for rice. Sold in markets @ Rs 6-8/- per corn.

Specimen examined: Salam, 336, 21/12/2012, Khangkhui khullen **(Plate-29-H).**

Zea mays L. (Poaceae)

Vern. Name: ***Khamathei***

It is a monoecious annual tall herb with stalk stem. Common, cultivated in the jhum fields.

Uses: Grains are eaten mostly boiled or roasted. Sold in markets @ Rs 6-8/- per corn.

Note: A good number of corn species are raised by the *Tangkhul* farmers which are broadly categories into two groups namely *Khamasa* corn yellowish colour, *Khamanui* corn violet to reddish colour.

Specimen examined: Salam, 3596, 8/7/2012, Lambui.

4.2.9: EDIBLE FUNGI

Agaricus campestris L. (Agaricaceae)

Vern . Name: ***Sipovar***

Sporophore centrally stipitate, white, solitary, growing on soil, may form fairy rings. Common, grows wild.

Uses: Fleshy mushroom are eaten fried or cooked with meat curry. Sold in market during summer season in bundles @ Rs 15-20 per bundle.

Specimen examined: Salam, 939, 4/ 8/2010, Lamlang

Auricularia polytricha (Mont.) Sacc. (Auriculariaceae)

Vern. Name: ***Shiokkhanavar***

Basidiocarp gelatinous, red to brown when fresh but light grey or tan on drying, sessile to slightly stipitate, ear-shaped, grows solitary, gregarious on dead wood. Common, grows wild.

Uses: Fruiting bodies are eaten fried or cooked with dal. Sold in market throughout the year (dried) @ Rs 180-200/-per kg and fleshy one during March-September @ Rs 50-70/-per kg.

Specimen examined: Salam, 347, 19/8/2012, Lambui.

Auricularia delicata (Fr.) Henn. (Auriculariaceae)

Vern. Name: ***Shiokkhanavar***

Basidiocarp sessile to substipilate grows solitary or gregarious on dead wood, gelatinous, ear-shaped, and brownish black to black when fresh but black and hard on drying. Common, grows wild.

Uses: Uses same as ***A. polytricha.*** Sold in market throughout the year (dried) @ Rs 180-200/-per kg and fleshy one during March-September @ Rs 50-70/-per kg.

Specimen examined: Salam, 511, 16/5/2009, Lambui**.**

Lactarius princeps Berk. (Russulaceae)

Vern. Name: ***Chengum khomthokpi***

Sporophores centrally stipitate, brick red colour, solitary or gregarious, grown on soil in fine or mixed forest. Occasional, grows wild.

Uses: Fresh mushroom are eaten cooked as vegetable with dry fish. Sold in market during May-September in small bunches @ Rs 20-25/-per bunch.

Specimen examined: Salam, 583, 10/7/2009, Litan **(Plate-18-A).**

Laetiporus sulphureus (Fr.) Murr. (Polyporaceae)

Vern. Name: ***Uyen***

Sporophores growing on dead or living trees, bracket-like fruit bodies sessile or sub-stipitate. Occasional, grows wild.

Uses: Fleshy fungi are eaten cooked with potato in the form of *Iromba.* Sold in market during June-September @ Rs 30-45/-per kg.

Specimen examined: Salam, 589, 10/7/2009, Litan.

Lentinula edodes (Berk.) Pegler (Polyporaceae)

Vern. Name: ***Thangjiyen***

Sporophore solitary, centrally stipitate growing on dead woods of *Quercus* spp, *Castanopsis* spp. Common grows wild.

Uses: Fresh or dried are eaten cooked as vegetable in mixing with others Sold in market during June-September @ Rs 40- 50/- per kg.

Specimen examined: Salam, 595, 16/5/2009, Lambui **(Plate-18-B).**

Lentinula lateritia (Berk.) Pegler (Polyporaceae)

Vern. Name: ***Thangjiyen***

Sporophore solitary, centrally stipitate growing on dead woods of *Quercus* spp. *Castanopsis* spp. Common grows wild.

Uses: Fresh or dried are eaten cooked with potato in the form of *iromba* (mashed with fermented fish). Also, eaten cooked with dal, fish or pork. Sold in market during June-September @ Rs 40- 50/- per kg.

Specimen examined: Salam, 1828,3/3/2011, Hundung.

Lentinus conatus Berk. (Polyporaceae)

Vern. Name: ***Uyen***

Sporophore growing on soil in solitary or in groups. White to cream

when fresh turning yellowish colour, funnel shaped. Occasional, grows wild.

Uses: Fleshy fungi are consumed either boiled or cooked with meat. Sold in market during June-September @ Rs 60-70/- per kg.

Specimen examined: Salam, 1827, 3/3/2011, Hundung.

Lentinus squarrossulus Mont. (Polyporaceae)

Vern. Name: ***Uyen***

Sporophore grown on partly decomposed wood in groups or solitary. Common, grows wild.

Uses: Uses same as *L.* ***conatus***. Sold in market during June-September @ Rs 60-70/- per kg.

Specimen examined: Salam, 329, 23/7/2012, Khangkhui khullen.

Pleurotus flabellatus (Berk. and Br.) Sacc. (Polyporaceae)

Vern. Name: ***Uyen***

Sporophores growing on dead tree trunk, snow white when young, turn yellowish on maturity, flattened or slightly incurved.

Uses: Fleshy fungi are eaten cooked as simple boiled vegetables with dry fish. Sold in market during May-August @ Rs 40-50/-per kg.

Specimen examined: Salam, 3536**,** 8/7/2012, Ukhrul.

Ramaria sanguine (Pers.) Quel. (Clavariaceae)

Vern. Name: ***Uchek khong***

Sporophore growing on the soil in mixed forest in groups or in solitary, flesh generally white, changing to reddish brown when bruised. Occasional, grows wild.

Uses: Fleshy fungi are eaten fried or cooked with fish. Sold in market during June-August @ Rs 40-50/-per kg.

Specimen examined: Salam, 3534,8/7/2012, Ukhrul. **(Plate-18-C).**

Schizophyllum commune Fr. (Schizophyllaceae)

Vern. Name: ***Lengphong***

Sporophores growing on branches or trunks of trees in groups. Common, grows wild.

Uses: Fruiting bodies are eaten cooked as simple boiled vegetable, also cooked with fish or pork, it is considered the most favourite food among the *Tangkhul*. It is highly demand for its medicinal value in the market. Sold in market during March-September (Fresh) and dried one throughout the year @ Rs 150-200/- per kg.

Specimen examined: Salam, 3544, 8/7/2012, Ukhrul.

Termitomyces clypeatus Heim. (Tricholomataceae)

Vern. Name: ***Varlang***

Sporophore solitary or in groups, centrally stipulate growing on soils associated with termite nests. Occasional, grows wild.

Uses: Fleshy mushroom are eaten cooked as vegetable, suitable with fish. Sold in market during May-September @ Rs 35-45/- per kg.

Specimen examined: Salam, 3571, 8/7/2012, Lambui **(Plate-18-D).**

Termitomyces eurrhizus (Berk.) Heim. (Tricholomataceae)

Vern. Name: ***Shipungvar***

Sporophore solitary or in groups, growing on soil associated with termite nests. Occasional, grows wild.

Uses: Fleshy mushroom are eaten fried with potatoes or cooked as vegetables with fish or meat. It is high demand in market. Sold in market during May-Septemberin small bunches @ Rs 10-20/- per bunch.

Specimen examined: Salam, 3559, 8/7/2012, Ukhrul **(Plate-18-E).**

4.2.10: BEVERAGES

Beverages are the drinks which are specifically prepared for human consumption. It can be placed under two categories, alcoholic and non-alcoholic.

Alcoholic beverage

From time immemorial, indigenous rice beer which they locally call '*Khor*'had been prepared by fermenting different varieties of sticky rice in Ukhrul district, Manipur. It is a popular traditional alcoholic drink consumed during marriages and religious festivals. Sufficient amount of '*Khor*' is required for offering to the deities, domestic consumption and to entertain guests.

Preparation of yeast (*Chamri*)

For preparation of*Chamri*, finely grinded sticky rice powder, where the rice was previously soaked in water for 2-3 hrs is thoroughly mixed with the bark powders of *Yangli* (*Albizia myriophylla*).

The mixture is kept in large vessels and water is added slowly till the mixture made into paste with the required amount. A rounded cake like structure is prepared from the paste, which is known as *Chamri.* The prepared cake are sun dried and can be stored in cool, dry place for over a year. For 1 kg of rice, around 8-10gm *Chamri* is added.

Two types of alcoholic beverages are consumed. They are:

a) ***Khor*: Preparation of *khor***

The sticky rice is soaked in water for 2 hours along with germinating *Oryza sativa*. After the water is drained out, soaked rice is pounded into powdered and added to the boiled water with continuous stirring till it gets cooled. It is then poured in a typical pot which is of the shape of conical flask. After pouring the content, it is sealed with cow dung and preferably placed in the warm corner of the house. They use no yeast. This result in a sweet favoured *Khor* which is now ready to consume. It plays an important role in *Tangkhul* socio-cultural life and accompanies every religious festival and ceremony.

b) ***Zam*: Preparation of *Zam***

In this type of alcoholic beverages rice is washed with tap water and cooked in the pot. The cooked rice is cooled and spread in *Yamkok* (Bamboo tray) and mixed with yeast (*Chamri*). The whole content is then put in an *ephuk* (Brewster) and a little amount of water is added just to dip it. It is then covered with *Musa paradisiaca* leaves. The mixtures are completely wrapped in green leaves and are left for fermentation. When it is fully fermented, the brew is separated from the rice, being floated upwards. The brew is then allowed to exude from the *ephuk* by means of a hollow reed and is inserted in an earthen ware. A proper *zam* is formed after 4-5 days of fermentation during summer and 7-8 days of fermentation in winter.

Albizia myriophylla Benth. (Fabaceae)

Vern. Name: ***Yangli***

It is a deciduous middle sized tree. Occasional, grows wild

Uses: Dried stem bark is pounded into powdered and used in the preparation of yeast cake. Sold in market @ Rs 50-60/-per bundle.

Specimen examined: Salam, 3518, 18/8/2012, Litan.

Coix lacryma jobi L. (Poaceae)

Vern. Name: ***Ngum***

It is a tall perennial grass. Occasional, grows wild.

Uses: Grains are used as main ingredients in the preparation of alcoholic beverages.

Specimen examined: Salam, 3506, 8/10/2012, Jessami **(Plate-31-B).**

Oryza sativa L. (Poaceae)

Vern. Name: ***Maa***

It is an annual herb. Cultivated as staple food.

Uses: Same uses as *Coix lacryma jobi*

Specimen examined: Salam, 3520, 8/7/2012, Ukhrul.

Tangkhul tribe also prepared indigenous alcoholic beverages or fruit beer by fermenting various locally available fruits such as *Ananas comosus, Docynia indica*, *Elaegnus conferta, Elaeocarpus floribundus, Musa paradisiaca, Passiflora edulis, Phyllanthus emblica, Prunus salicina, Prunus nepalensis, Psidium guajava* etc. These are prepared by fermenting the fruits in a closed container with a little amount of water. These beverages have been a part of socio-cultural life of people in Ukhrul district.

Non-alcoholic beverages

Tangkhul tribe consumed various non-alcoholic beverages which have medicinal and nutritional value.

Camellia sinensis (L.) Kuntze (Theaceae)

Vern. Name: ***Cha***

It is a large evergreen shrub or small tree.Rare, Cultivated.

Uses: Homemade dried tea leaves are boiled for 10 minutes in water and used as refreshing drinks by the *Tangkhul* people of Kamjong sub-division.

Specimen examined: Salam, 3513, 20/10/2012, Chassad.

Cymbopogon citratus Stapf. (Poaceae)

Vern. Name: ***Keyarphei***

It is a tall aromatic perennial grass. Occasional, grows wild.

Uses: Two or three leaves are boiled in half litre of water and taken as general tonic for good health.

Specimen examined: Salam, 1818, 16/6/2011, Shiroy chingkha.

Oryza sativa L. (Poaceae)

Vern. Name: ***Maa***

It is an annual herb.Cultivated as staple food.

Uses: The extract obtained from the cooked rice is commonly used as beverages by the small children as lactagog.

Specimen examined: Salam, 3520, 16/2/2011, Ukhrul.

Sphenomeris chinensis Maxon (Lindsaeaceae)

Vern. Name: ***Macha***

It is a fern. Common, grows wild.

Uses: *A small amount of leaves are boiled and taken as refreshing drink.

Specimen examined: Salam, 3507, 6/2/2012, Kasom Khunou.

Glycine max (L.) Merr. (Fabaceae)

Vern. Name: ***Maranthei***

It is a sub-erect, stout annual herb. Common, cultivated in jhum fields considered as important pulse.

Uses: Seeds are boiled with water for about 45 minutes. The extract obtained is taken as beverage for good health.

Specimen examined: Salam, 318, 20/9/2012, Awang kasom.

Note: Apart from these, daily consumption of fresh fruit juice is an important item among the *Tangkhul* tribe.

4.3: ETHNOMEDICINAL PLANTS

Ukhrul district is rich in floral diversity, most of which possesses medicinal properties. From time immemorial, the *Tangkhuls* are familiar with local herbs found in the village surroundings and forest areas not only for their food but also provide a major part of the medicine for the treatment of various diseases and ailments especially for the poor people living in the district. They are largely dependent on their traditional healing system for their healthcare and the information is passed on from generation to generation through the word of mouth. In every village, there are some person locally known as '*khanong*' (medicine man) who generally treat the persons by indigenous methods by employing different plants and various parts for different kind of ailments according to the kind of disease, degree of ailments and nature of drugs plants. The medicinal plant species that are used ethno medicinally by *Tangkhul* community are enumerated below in alphabetical order. The status (whether rare or common) and distributional

range in the district (whether cultivated or wild) of the plant is given along with the plant parts and the mode of uses including the form of preparation of the herbal drugs and name of the ingredients used are mentioned wherever it is possible.

Abelmoschus esculentus (L.) Moench. (Malvaceae)

Vern. Name: ***Bhelendi***

A very variable hispid annual, erect and stout stemmed bristly herb. Cultivated in the kitchen garden.

Uses: Tender shoots of 80g are boiled with ½ litre of water and the filtrate decoction of (10-20ml) is taken twice daily for one week for diuretic. Fresh flower extract of about two teaspoonfuls is added to one cup of milk and prescribed in sexual weakness. Fruit extract is also given in goitre.

Specimen examined: Salam, 931, 4/8/2010, Lamlang.

Achyranthes aspera L. (Amaranthaceae)

Vern. Name: ***Manarina***

A perennial stiff erect herb with pubescent branches. Common, grows wild on roadside and other wasteland.

Uses: The smashed fresh leaves made into paste are applied to treat wounds and injuries, also applied around anus against piles. Fresh leaves of 200 g are boiled with one and half litres of water and the filtrate decoction of about half glass is taken twice daily in diabetes for fifteen days. The smashed fresh leaves are made into paste and applied externally at the abdomen portion against painful urination. Stem twigs are also used as toothbrush twice a day in toothache.

Specimen examined: Salam, 935, 17/12/2010, Tungou.

Acorus calamus L. (Asteraceae)

Vern. Name: ***Oak-hidak***

An aromatic erect marshy herb with creeping rootstocks. Common in marshy areas.

Uses: Two or three fresh rhizomes are pounded and the juice of about two teaspoonfuls with honey is given in severe cough and chest congestion for one week.

Specimen examined: Salam, 937, 17/12/2010, Tungou.

Adiantum philippense L. (Pteridaceae)

Vern. Name: ***Mayur-pambi***

It is a fern. Common, grows wild.

Uses: Whole plant about 100g are boiled in one litre of water and the decoction of about 200ml is given twice daily in diabetes for one month.

Specimen examined: Salam, 938, 16/7/2010, Leiting.

Ageratum conyzoids L. (Asteraceae)

Vern. Name: ***Khongjainapi***

An erect strongly scented annual herb. Common grows along dried up streams, low moist situation and abandoned in jhum land.

Uses: The smashed leaf of the plant is applied on cuts and wounds to check bleeding and early healing. A handful of fresh leaves are crushed and the extract (100-200ml) is given to stomach trouble and liver patients.

Specimen examined: Salam, 940,30/10/2010, Sampui.

Alangium chinense (Lour.) Harms (Alanginaceae)

Vern. Name: ***Kokan***

A small straggling tree having grey varty bark. Common grows wild near foothill.

Uses: Fresh leaves of about 200g are boiled in two litres of water for 25 mins and the decoction of about 200ml is taken twice daily for a week in malaria fever, cough and cold.

Specimen examined: Salam, 943, 17/8/2010, Litan.

Allium cepa L. (Alliaceae)

Vern. Name: ***Tarui***

A perennial herb having a thick bulb that is glandular having membranous tunics. Common, cultivated.

Uses: The extract obtained by crushing the fresh bulb is ear dropped in earaches and otitis. The paste made by crushing the leaf is applied around the boils for early suppuration.

Specimen examined: Salam, 510, 15/10/2009, Ukhrul.

A. hookeri Thw. (Alliaceae)

Vern. Name: ***Namrei***

An herb having tunicate bulb. Common, cultivated.

Uses: Whole plant is used for reducing high blood pressure. Juice of the fresh leaves of one cup mixed with a pinch of salt is prescribed against stomach ulcers twice a day for 2 or 3 days. Fresh leaves are also eaten raw in pile case.

Specimen examined: Salam, 1814, 3/3/2011, Hundung.

A. tuberosum Roxb. (Alliaceae)

Vern. Name: ***Namra***

An herb tuniucate blub. Common, cultivated.

Uses: A handful of leaves are boiled and the decoration ½ cup is given twice daily for 7 days in painful urination in urinary tract stone.

Specimen examined: Salam, 1873, 18/8/2011, Lambui.

A. Sativum L. (Alliaceae)

Vern. Name: ***Hanam***

A Perennial bulbous herb. Common, cultivated in the kitchen garden.

Uses: Juice obtained by crushing the whole plant of 2 teaspoonfuls is taken orally twice a day with water in reducing blood pressure, also in stomach troubles for one week. A pounded bulb mixed with honey is given in cold and cough.

Specimen examined: Salam, 502, 6/1/2009, Hundung.

Alpinia galanga Willd. (Zingiberaceae)

Vern. Name: ***Hirui***

A perennial rhizomatous herb. Common, grows wild in the wastelands and also cultivated.

Uses: One or two teaspoonful of fresh rhizome extracts mixed with honey twice daily for one week is prescribed in stomach complaints. Fresh rhizome is also chewed for throat problems. Juice obtained by crushing the fresh rhizome is given one teaspoonful twice a day on intestinal worm. Crushed rhizome 30g boiled with 1litre of water, 2g of beer heart and 3g of opium for 30mins and the decoction is given 1/2 cup thrice a day for one week against dry cough and fever.

Specimen examined: Salam, 1847, 19/8/2011, Landang.

Alpinia officinarum Hance (Zingiberaceae)

Vern. Name: ***Pulliemanbi***

It is a perennial herb. Common, grows wild in the wastelands and also cultivated.

Uses: The rhizome juice of about 300ml is taken thrice daily for one week for the treatment of excessive bleeding during menstruation period of women.

Specimen examined: Salam, 947, 4/8/2010, Lamlang.

Amaranthus spinosus L. (Amaranthaceae)

Vern. Name: ***Somchan***

It is an erect glabrous much branched weed, armed with sharp spines. Common, grows in waste places.

Uses: *Fresh leaf paste is wrapped on affected portion in boils and burns, also applied in snake bite.

Specimen examined: Salam, 950, 17/8/2010, Litan.

Ananas comosus (L.) Merr. (Bromeliaceae)

Vern. Name: ***Chingomthei***

It is a tufted stemless herb having numerous, elongated and finely toothed rosulate leaves. Cultivated large scales in slopes of hills.

**Uses: ***One piece of fresh mature leaf is boiled and to the decoction a pinched of sugar candy is added and given half glass three times a day for one week against urinary tract stones.

Specimen examined: Salam, 505, 10/7/2009, Litan.

Andrographis paniculata Nees (Acanthaceae)

Vern. Name: ***Vubati***

It is an erect annual herb. Common, cultivated as well as grows wild.

Uses: Fresh six or seven leaflets are boiled with five cups of water for 20 mins and the decoction is given 1/2 glass twice a day for 7 days against stomach troubles. Also, fresh leaf is chewed raw for curing whooping cough.

Specimen examined: Salam, 951, 12/4/2010, Sikibung.

Argyreia nervosa (Burm.f.) Boj. (Convolvulaceae)

Vern. Name: ***Puding uri***

A scandent climber. Common, grows wild in roadside and other wasteland.

Uses: Root of the plant is crushed and used the paste obtained as massage in rheumatism twice a day for one week. Fresh leaves are crushed into paste and applied on boils and skin diseases.

Specimen examined: Salam, 942, 4/8/2010, Lamlang.

Artemisia maritima L. (Asteraceae)

Vern. Name: ***Maharua***

A deciduous shrub having a rough fibrous bark. Common, grows wild.

Uses: Fresh leaves are crushed into paste and applied externally for one or two hours on muscular sprain twice a day until it recovers.

Specimen examined: Salam, 954, 16/11/2010, Ukhrul.

A. nilagarica (C.B. Clarke) Pamp. (Asteraceae)

Vern. Name: ***Harana***

A tall aromatic undershrub. Common, abandoned jhum land.

Uses: A handful of fresh leaves juice mixed with diluted honey (1-2 teaspoonful) is taken orally once daily for a week to cure diarrhoea and dysentery. Root extract is given in stomach troubles. Leaf decoction is used externally to cure mouth sores, also in fever 3teaspoonful thrice a day for one week. The leaves of *Harana* isboiled and applied around the anus for piles case.

Specimen examined: Salam, 1854, 12/9/2011, Nampisha.

Artocarpus heterophyllus Lam. (Moraceae)

Vern. Name: ***Theibong***

A large evergreen tree having large dense crown. Common, Planted.

Uses: Latex of the plant is applied in skin sores and boils. Root bark of 50g are boiled with 1/2 litre of water and the decoction three teaspoon is given twice daily against diabetes for 15 days.

Specimen examined: Salam, 955, 4/8/2010, Lamlang.

Asparagus racemosus Willd. (Alliaceae)

Vern. Name: ***Kameoseihawon***

A slender scandent plant with reflexed spines. Common, wild as well as planted.

Uses: Root decoction is also used for improving memory in impotency and gynaecological complaints. 30g of grounded root is boiled in 1 litre of water, and about 2 teaspoon of decoction is given thrice daily to cure night blindness.

Specimen examined: Salam, 961, 12/9/2010, Sikibung.

Auricularia delicata (Fr.) Henn. (Auriculariaceae)

Vern. Name: ***Shiokkhanavar***

It is an edible fungus. Common, grows wild.

Uses: About 20g of whole plant is boiled with 1/2 litre of water and the decoction of the plant is prescribed 1/2 cup thrice a day for one week in stomach troubles.

Specimen examined: Salam, 511, 16/5/2009, Lambui

Azadirachta indica A. Juss. (Meliaceae)

Vern. Name**:** ***Neem***

A large to middle sized tree. Occasional, planted or grows wild in the roadsides.

Uses: Fruit pulp extract is used in skin diseases. Leaf extract three teaspoon is mixed with one spoon of honey and given once daily for one week for intestinal worm.The leaves are also boiled with *Phlogacanthus thyrsiflorus* and *Zanthoxylum acanthopodium* in equal proportion and the decoction 1/2 cup is administered orally twice a day for 15 days in diabetes.

Specimen examined: Salam, 963, 12/4/2010, Sikibung.

Bambusa nutans Wall. (Poaceae)

Vern. Name: ***Pha***

An arboreous, tufted bamboo whose culms are hollow, green and white tinged below the nodes. Common, planted in homestead compound.

Uses: Tender shoot is crushed into paste and applied on wounds or any poisonous bites by all the communities of Manipur. A handful of leaves boiled in one bucket of water are taken during bath in case of itching.

Specimen examined: Salam, 966, 17/8/2010, Litan.

Bauhinia variegata L. (Caesalpinaceae)

Vern. Name: ***Haochokwon***

A medium sized deciduous tree. Common, planted as an ornamental and also grows wild.

Uses: Flower decoction half glass is given orally twice daily for one week against menstrual disorder. Shade dried leaves 30g are boiled with 1/2 litre of water and the decoction 3teaspoon is given twice for 15 days in piles and constipation.

Specimen examined: Salam, 968, 16/4/2010, Ukhrul.

Benincasa hispida Cong. (Cucurbitaceae)

Vern. Name: ***Katsenghei***

A large trailing climber having 2-fid tendrils. Common, cultivated as a vegetable crop.

Uses: Fresh fruit juice mixed with sugar in equal amount and taken half glass thrice daily for 15 days against diuretic. Thin slice is applied on forehead in headache and dizziness. Fresh extract juice one glass is taken in the morning in empty stomach against stomach ulcers.

Specimen examined: Salam, 916, 27/10/2010, Bungpa khunou.

Bidens pilosa L. (Asteraceae)

Vern. Name: ***Phanang***

An erect, glabrous, pilose or pubescent herb. Common, grows as wild weed in waste places.

Uses: Fresh leaves of 100g are boiled with 1 litre of water and the decoction of 1/2 cup is given twice daily in the morning and at bedtime for 1or 2 week in stomach troubles. Fresh leaf juice is applied as eye drops thrice daily against conjunctivitis and cleaning of dust from eyes.

Specimen examined: Salam, 973, 30/10/2010, Sampui.

Blumeopsis flava Gagnep. (Asteraceae)

Vern. Name: ***Uri***

A glabrous herb. Common, grows as wild weed in waste places.

Uses: The fresh leaf extract is applied externally on forehead and back of children to reduce high body temperature. Decoction of its leaves mixed with honey from a stingless bee (2-3ml) is taken twice daily for one week against dry cough. Leaf juice is used externally in fresh cuts and wounds, to stop bleeding. Six or seven fresh leaf is smashed and applied in joint pains.

Specimen examined: Salam, 308, 1/11/2012, Sikibung.

Bombax ceiba L. (Bombacaceae)

Vern. Name: ***Tera***

A lofty deciduous trees. Occasional, cultivated and also grows wild.

Uses: Fresh extract of the root is applied in muscle pain. About 50g of crushed root are boiled with water along with 3g of sugar candy and the decoction is given once daily for 15 days in sexual weakness. Four or five flowers are boiled with 1/2 litre of water and the decoction is given twice daily for one week in severe colitis.

Specimen examined: Salam, 972, 16/7/2010, Leishi.

Brassaiopsis polycantha (Wall.) R. N. Banerjee (Araliaceae)

Vern. Name: ***Sungphenghan***

It is a small sparsely branched, prickly tree. Occasional, grows wild as well as planted.

Uses: Fresh leaves of about 200g are boiled with 1 litre of water and the decoction two or three teaspoonful is taken twice daily for a week in kidney troubles.

Specimen examined: Salam, 504, 15/5/2009, Ukhrul.

Bryophyllum calycinum Salisb. (Crassulaceae)

Vern. Name: ***Manahidak***

A succulent plant. Common, grows in home garden.

Uses: Leaf juice is used for healing of wounds, also applied on cuts to stop bleeding. Juice extracted from the leaves mixed with 3g seeds powdered of *Piper nigrum* is prescribed 2 teaspoon twice daily for three days in diarrhea and dysentery.

Specimen examined: Salam, 975, 29/10/2010, Chassad.

Butea minor Buch.-Ham.(Fabaceae)

Vern. Name: ***Thiksho***

It is an erect shrub with long spreading branches. Occasional, grows wild.

Uses: Seeds are pounded into paste and applied on boils. Fresh leaves pounded 20 g are boiled in water with 2 spoon of honey and the decoction is given twice daily for one week in curing measles. Fresh leaves one or two are chewed daily for the treatment of diabetes.

Specimen examined: Salam, 976, 29/10/2010, Khoikai.

Cajanus cajan (L.) Millsp. (Fabaceae)

Vern. Name: ***Khaithei***

It is an erect branching shrub. Common, cultivated.

Uses: The immature pods of 100g are boiled with 1/2 litre of water along with sugar candy is taken 3 teaspoon twice a day for one week against stomach ulcers. A handful of leaves are boiled in one bucket of water and used at the time of bath in case of itching. Juice obtained by crushing the leaf is slightly warmed and used as gargle in neck swelling. Dried bark powdered of 20g with 1/2 litre of water is boiled

and the decoction is prescribed (2-3ml) twice daily for three days in dysentery.

Specimen examined: Salam, 580, 16/5/2009, Lambui.

Callicarpa arborea Roxb. (Verbenaceae)

Vern. Name: ***Chicothing***

It is an evergreen medium sized tree, much branching. Common, wild.

Uses: Fresh leaf is smashed or rubbed twice daily in body pain and swollen muscles.

Specimen examined: Salam, 981, 16/4/2010, Ukhrul.

Cannabis sativa L. (Canabinaceae)

Vern. Name: ***Ganja***

It is a scarcely branched and smelling annual herb of variable height. Occassional, Cultivated as well as grows wild.

Uses: Tender shoots of about 100g are boiled with water and 1/2 glass is prescribed twice daily for three days for the treatment of stomach pain and diarrhoea. Dried leaves powdered of 1teaspoon are mixed with 1 glass of milk and is given once a day in the morning for fifteen days for the treatment of Leucorrhoea.

Specimen examined: Salam, 982, 4/8/2010, Lamlang.

Cardamine hirsuta L. (Brassicaceae)

Vern. Name: ***Shiwokkayanghan***

It is an annual bitter herb. Common, grows wild in moist waste places

Uses: Whole plant of about 100g are boiled with water and to the decoction one spoon of honey is mixed and given (3-5ml) once in a day for a period of 2-4 days in urinary complaints.

Specimen examined: Salam, 986, 16/11/2010, Ukhrul.

Carica papaya L. (Caricaceae)

Vern. Name: ***Awathabi***

It is a branches fast growing tree. Very common, cultivated.

Uses: *Shade dried seeds of about 40g made into powdered is mixed with one glass of water and given twice daily for 2 or 3 days for intestinal worm especially for children. Fresh root are pounded into paste and applied on dog bite.

Specimen examined: Salam, 546, 15/5/2009, Ukhrul.

Cassia occidentalis L. (Fabaceae)

Vern. Name: ***Piwon***

It is an erect, foetid, annual herb or under shrub. Occasional, grows wild.

Uses: *Fresh leaves of about 200g are boiled with 2 litres of water for 30 mins and the decoction of about 200ml is taken twice daily for one week against urinary troubles. Shade dried leaves powdered of 2 teaspoon is added to a glass of milk and given twice daily in the morning and at bedtime for 15 days against diabetes.

Specimen examined: Salam, 988, 15/7/2010, Phalang.

Celosia argentea L. (Amaranthaceae)

Vern. Name: ***Haorie***

It is an annual herb having smooth, erect and branched stem. Common, cultivated as an ornamental.

Uses: Fresh leaf juice is used for healing of wounds, also applied on cuts to stop bleeding. About 200 g of fresh root with 3 teaspoon of sugar is boiled with water and prescribed 1/2 cup twice daily for 15 days in kidney and urinary tract stone.

Specimen examined: Salam, 991, 16/11/2010, Ukhrul.

Celtis australis L. (Ulmaceae)

Vern. Name: ***Heikreng***

It is a tree having slender branches .Occasional, planted in homestead compound

Uses: The juice obtained by crushing the fresh fruit is mixed with water and honey and prescribed in Jaundice and dysentery.

Specimen examined: Salam, 992, 15/7/2010, Phalang.

Centella asiatica (L.) Urban (Apiaceae)

Vern. Name: ***Kongrihan***

It is a common, herb having a long creeping stem rooting at the nodes. Common, grows in all the habitats

Uses: Fresh juice of *Centella asiatica* and *Oxalis corniculata* are mixed in equal proportion with one teaspoonful of honey about 1/2 glass is given thrice daily for 3 or 4 days in frequent diarrhoea and urinary trouble. Fresh plant are also eaten raw as vegetables as to increase digestive power, as blood purifier, to cure gastric problems and for good memory.

Specimen examined: Salam, 924, 12/9/2010, Sikibung.

Chenopodium album L. (Chenopodiaceae)

Vern. Name: ***Kazingtareihan***

It is an annual herb. Common, cultivated also wild.

Uses: Fresh tender shoot of about 200g are boiled with 1/2 litre of water and the decoction 200ml is given once daily for 15 days in luecoderma. The juice obtained by crushing the fresh leaves of 2 teaspoonfuls are given twice daily for one month in diabetes.

Specimen examined: Salam, 993, 17/12/2010, Tungou.

Cinnamomum zeylanicum Blume (Lauraceae)

Vern. Name: ***Sakomthing***

It is a moderate sized evergreen tree. Rare, planted as well as grows wild.

Uses: About 5ml of bark decoction is taken orally once daily in asthma.

*Bark extract is also used in fresh cuts and injury to stop bleeding and early healing.

Specimen examined: Salam, 907, 27/10/2010, Bungpa khunou.

Cissus discolor Blume (Vitaceae)

Vern. Name: ***Rameihanghor***

It is a climbing shrub with bifid tendrils. Rare, cultivated as well as wild.

Uses: The fresh leaves about 200gare boiled in two litres of water for 20minutes and to the decoction 250 gof sugar candy is mixed and is taken one glass twice daily against urinary tract stone.

Specimen examined: Salam, 508, 15/10/2009, Ukhrul.

Citrus macroptera Mont. (Rutaceae)

Vern. Name: ***Heiripok***

It is a medium sized tree having compressed and angled branchlets. Rare, commonly planted in the hills.

Uses: Root of *C. macroptera* andouter cover of *C.reticulata*fruitare grinded together in equal amount and the juice obtained is taken 2 teaspoon twice daily for whooping cough for 7 days. Juice obtained by crushing the fruit with a pinch of common salt is also given 3 teaspoon twice daily for 15 days in urinary tract and kidney stone.

Specimen examined: Salam, 996, 17/8/2010, Litan.

Clerodendrum colebrookianum Walp. (Verbenaceae)

Vern. Name: ***Nareihan***

It is a large shrub. Common, grows in the wasteland and foothill, also cultivated in the kitchen garden.

Uses: Boiled leaves are taken as vegetables to get relief from highblood pressure. Decoction of the fresh leaf is prescribed against cough, dysentery and stomach pain.

Specimen examined: Salam, 548, 15/6/2009, Phalang **(Plate-21-A).**

C. indicum Kuntze (Verbenaceae)

Vern. Name: ***Charoi utong***

It is a small shrub having fistular stem. Common, grows along roadside.

Uses: Decoction obtained by boiling the root of *C. indicum* with rhizome of *Zingiber officinale* in equal amount is prescribed three teaspoon twice daily for one week in cough.

Specimen examined: Salam, 3505, 26/11/2012, Sikibung.

C. farinosum (Roxb.) Steud. (Verbenaceae)

Vern. Name: ***Ching Moirang khanum***

It is a small tree. Ocassional, grows wild.

Uses: *About 6 or 7 fresh leaves are boiled with 1/2 litre of water for 20 mins and the decoction is given (10-15ml) once daily in the morning for fifteen days as a cure for period pain.

Specimen examined: Salam, 999, 12/9/2010, Sikibung.

Coix lacryma jobi L. (Poaceae)

Vern. Name: ***Ngum***

It is a tall perennial grass. Occasional, grows wild.

Uses: Fresh leaves of about 200g are boiled with 2 litres of water for 30 mins and the decoction of about 200ml is taken twice daily for one week against urinary tract stone.

Specimen examined: Salam, 3506, 8/10/2012, Jessami.

Colocasia gigantea (Blume) Hook.f. (Araceae)

Vern. Name: ***Kharinghor***

It is an annual herb with stout epigeal stem. Common, cultivated.

Uses: Juice obtained by crushing the fresh petiole is mixed with honey and given in mouth and tongue sores.

Specimen examined: Salam, 573, 17/5/ 2009, Nungbi khullen.

Commelina benghalensis L. (Commelinaceae)

Vern. Name: ***Wangden khoibi***

It is a glabrous and diffused small herb rooting at lower nodes. Common, grows in moist area.

Uses: Fresh leaves are grinded into paste and are tied with a piece of cloth against swelling of finger tip.

Specimen examined: Salam, 1802, 1/11/2011, Sikibung.

Conyza bonariensis (L.) Crong (Asteraceae)

Vern. Name: ***Arirong***

It is an erect herb. Common, grows wild.

Uses: About 15-20 leaves are pounded into paste and are rubbed daily at bed time in muscular sprain and swollen muscles. A handful of leaves are also boiled in one bucket of water and used to bath in case of itching.

Specimen examined: Salam, 1803, 19/8/2011, Landang.

Costus speciosus Sm. (Zingiberaceae)

Vern. Name: ***Talaiwon***

It is a tuberous herb having horizontal rootstocks. Common, grows on roadsides moist areas.

Uses: Fresh rhizome is boiled in 2 litres of water and the decoction is given frequently against thirst as general health tonic. Freshstem juice is dropped in earaches. Fresh crushed rhizome of about 200g is boiled with water and sugar candy and the decoction is given (10-15ml) twice daily for the treatment of kidney failure.

Specimen examined: Salam, 1805, 16/6/2011, Lauphang.

Crassocephalum crepidiodes S. Moore (Asteraceae)

Vern. Name: ***Revival***

It is a large succulent herb. Common, grows wild.

Uses: A handful of fresh leaves are boiled with 1 litre of water for 30 mins and the extract is taken 1/2 cup once in a day in stomach ulcers and other stomach complaints for one week. *Crushed leaves are also applied around anus against piles. The fresh grounded leaves made into paste and apply on the forehead against dizziness. The decoction of the leaf is taken regularly to check high blood pressure.

Specimen examined: Salam, 186, 1/12/2011, Grihang.

Curculigo orchoides Gaertn. (Hypoxidaceae)

Vern. Name: ***Phai***

It is a small perennial herb. Rare, grows wild.

Uses: Rhizome juice is applied on cuts and wounds for immediate healing and relief from pain. *Fresh rhizome of about 300g is boiled

with water and the decoction is taken in the morning once in a day for one month for the treatment of menstrual disorder.

Specimen examined: Salam, 1812, 16/6/2011, Chungkai.

Cucurma angustifolia Roxb. (Zingiberaceae)

Vern. Name: ***Koktuiwon***

It is a stemless herb having small rootstocks. Occasional, planted as well as grows wild.

Uses: Rhizome paste is applied twice daily on burning wounds. Rhizome is smashed and applied at the spot of the bite to reduce pain in dog bite. Rhizome is boiled with *Schizophyllum commune* and a pinch of salt is added and thus the decoction ½ glass is given twice daily for 2 or 3 days in stomach troubles.

Specimen examined: Salam, 1810, 3/8/2011, Maku.

C. caesia Roxb. (Zingiberaceae)

Vern. Name: ***Yaimu***

It is a stemless tuberous herb. Rare, cultivated.

Uses: *The fresh crushed rhizome juice of about 3 teaspoon is mixed with two cups of filter water and a pinch of sugar is added and thus the liquid (10-15-ml) is given twice daily for 2 or 3 days in gastric problems and also in vomiting. Crushed rhizome is also applied in injury to control bleeding and quick healing. Dried outer skin of the rhizome is pounded and made into pills; one pill thrice a day is prescribed in stomach complaints.

Specimen examined: Salam, 507, 17/5/2009, Nungbi khullen.

C.longa L. (Zingiberaceae)

Vern. Name: ***Yaigang***

It is a rhizomatous perennial herb having irregular shaped rhizome. Very common, cultivated.

Uses: The fresh rhizome smashed is applied on whitlow and paronychia and the fresh crushed rhizome juice of about two teaspoon mixed with one spoon of honey is given in fever and malaria. Rhizome juice is applied as antiparasitic for skin infections.

Specimen examined: Salam, 902, 28/10/2010, Phange

Cuscuta reflexa Roxb. (Cuscutaceae)

Vern. Name: ***Sangrei***

It is a parasitic twinner having a creamy- yellow, somewhat thick and fleshy stem.Common, grows wild over fences.

Uses: Whole plant is boiled with *Pavetta indica* in equal proportions and the decoction 1/2 cup is prescribed once daily for 15 days in jaundice. Fresh extract of the plant is used as massage in muscular sprain. *While the decoction of the plant with sugar crystal is prescribed (6-7ml) twice daily for one week against fever and stomachache.

Specimen examined: Salam, 1816, 1/11/2011, Sikibung.

Cynodon dactylon (L.) Pers. (Poaceae)

Vern. Name**: *Kaho***

It is a creeping herb having a slender and prostrate stem. Very common, grows wild.

Uses: The paste obtained by grounding the fresh twigs with seeds of *Brassica campestris* is externally applied in nasal bleeding. Fresh

extract juice of three teaspoon with one spoon of honey is given as tonic during excess bleeding.

Specimen examined: Salam, 518, 10/7/ 2009, Litan.

Cymbopogon citratus Stapf. (Poaceae)

Vern. Name: ***Keyarphei***

It is a tall aromatic perennial grass. Occasional, grows wild.

**Uses: ***Fresh leaves of 50g are pounded and boiled with water and the decoction (10-15ml) is given twice daily in the morning and at the bedtime for 15 days in kidney stone.

Specimen examined: Salam, 1818, 16/2/2011, Shiroy chingkha.

Cyperus rotundus L. (Cyperaceae)

Vern. Name: ***kaho***

It is an herb having stolineferous rhizome. Very common, grows everywhere in wastelands.

Uses: Fresh whole plant extract juice of 2 or 3 teaspoon is mixed with honey and given to children for intestinal worm for 3 days. Rhizome extract juice of 2 teaspoon is mixed with honey and prescribed against high body temperature, cough, bronchitis, malaria fever.

Specimen examined: Salam, 1819, 18/8/2011, Lambui.

Datura metel L. (Solanaceae)

Vern. Name: ***Farikna***

It is a short shrub having an ovate leaf with few teeth. Common, wild or even cultivated in the boundary.

**Uses: ***Fresh leaves are pounded into paste and applied in the forehead against intestinal worm especially for children.

Specimen examined: Salam, 1820, 16/2/2011, Ukhrul.

Datura stramonium L. (Solanaceae)

Vern. Name: ***Sagol hidak***

It is a small glabrous under shrubs whose leaves are ovate oblong to triangular with unequal base. Rare, planted as ornamental, also grows wild.

Uses: Smoke of dried leaves is inhaled in bronchitis and chest congestion. The paste obtained by pounding the leaf with turmeric is applied in swelling and joint pains.

Specimen examined: Salam, 522, 15/5/2009, Ukhrul.

Debregeasia longifolia (Burm.f.) Wedd. (Urticaceae)

Vern. Name:***Harongthing***

It is a small tree whose branchlets are slender and pilose. Rare, grows wild near river banks, foothills.

Uses: Fresh leaves of about 40g are boiled with 1litre of water for 30mins and the decoction of about 200ml is given thrice daily in the morning for 15-20 days in diabetes. One cup of root decoction is also given twice daily in gout.

Specimen examined: Salam, 1823, 12/9/2011, Nampisha **(Plate-19-A).**

Dendrobium denudans D. Don. (Orchidaceae)

Vern. Name: ***Shailengwon***

It is a perennial epiphytic orchid. Grows wild, occasional.

Uses: Whole plant is crushed and the juice obtained is applied in fresh cuts and injury to stop bleeding. *Decoction of the whole plant is also given in stomach ulcer for one week.

Specimen examined: Salam**,** 334, 21/12/2012, Khangkhui khullen **(Plate-19-B).**

Dichrocephala integrifolia Kuntze (Asteraceae)

Vern. Name: ***Lalukok***

It is an annual herb. Common, wild in moist places.

Uses: Crushed extract of the leaves (1-2 teaspoonful) is taken orally once daily in fever. Boiled extract of the leaf ½ glass twice daily for one week is prescribed in stomach upsets. Fresh tender shoot is smashed into paste and applied externally on ringworm and itching of the skin. *****Decoction of the leaf is also applied as lotion over the lower abdomen of pregnant lady for relieving of labour pain.

Specimen examined: Salam, 513, 16/5/2009, Lambui.

Dillenia indica L. (Dilleniaceae)

Vern. Name: ***Heigri***

It is an evergreen tree that are often fluted and buttressed at the base with a large oval crown. Rare, cultivated or wild.

Uses: Thin slice of immature fruits of 100g are boiled with 1/2 litre of water along with sugar candy is taken 3 teaspoon twice a day for one week against abdominal disorders especially in children.

Specimen examined: Salam, 565, 10/7/ 2009, Litan.

Docynia indica (Colebr.) Decne. (Rosaceae)

Vern. Name: ***Theithukthei***

It is a moderate-sized deciduous tree with young parts and inflorescence woolly.Ocassional grows wild.

Uses: The juice obtained by fermenting the fruit with sugar is given oneglass daily for 10-15 days in urinary troubles.

Specimen examined: Salam,567, 15/10/2009, Shiroy chingkha.

Drymaria cordata Willd. (Caryophyllaceae)

Vern. Name: ***Biviyena***

It is a diffused dichotomously branched herb. Common, grows near roadsides or moist wastselands.

Uses: Boiled extract of the whole plant is prescribed 1/2 glass twice daily for 2 or 3 days in diarrhoea. Fresh leaf juice mixed with honey (1-2teaspoonful) is taken twice daily to get relief from whooping cough. The crushed leaf paste is applied as an antidote against snakebite. The slight roasted leaf is applied over the boils for early suppuration and also applied in earache by the *Tangkhul.* A handful of fresh leaves is wrapped with *Musa paradisiaca* leaf and slightly warmed up on fire; it is applied on forehead to get relief from sinus problem.

Specimen examined: Salam, 515, 10/7/ 2009, Litan.

Elsholtzia blanda Benth. (Lamiaceae)

Vern. Name: ***Ngarikna***

It is an annual aromatic sub shrub. Cultivated in the kitchen garden.

Uses: Boiled extract of the inflorescence is used as gargle for tonsillitis or throat trouble.Tender shoot extract is rubbed against body pain and stiff neck.

Specimen examined: Salam, 506, 15/10/2009, Ukhrul.

Elsholtzia communis (Coll. & Hemsl.) Diels (Lamiaceae)

Vern. Name: ***Yongpa***

It is a perennial shrub having obscurely quadrangular branches. Cultivated in the kitchen garden.

Uses: The inflorescence is chewed in tonsillitis by the *Tangkhul*. Leaves with inflorescence of about 100g are boiled with 1 litre of water and

the decoction 100ml is taken twice daily against fever, menstrual disorder and cough.

Specimen examined: Salam, 587, 15/10/2009, Ukhrul.

Emilia sonchifolia (L.) DC. (Asteraceae)

Vern. Name: ***Revivalmacha***

A slender herb growing wild in shaded and moist places. Common, grows near roadsides or moist wastelands.

Uses: Crushed extract of the plant is prescribed externally in fresh cuts and wounds. The fresh root extract of about 2-3 teaspoon is also given twice a day for 3 days in diarrhoea and fever.

Specimen examined: Salam, 517,10/7/2009, Litan.

Entada pursaetha DC. (Mimosaceae)

Vern. Name: ***Saotheila***

A large climber having greyish brown or blackish bark. Occasional, grows wild.

Uses: Mesocarp of the fruit is crushed with water and given in tonsillitis and neck swelling. *****Dried seeds are pounded into powder and mixed with water and given (4-5ml) twice a day for one week in fever and worm infections.

Specimen examined: Salam, 579, 16/5/2009, Lambui **(Plate-21-B).**

Eryngium foetidum L. (Apiaceae)

Vern. Name: ***Lam sachikom***

It is an erect aromatic perennial herb. Common, cultivated in home garden.

Uses: A handful of fresh leaves are boiled with one litre of water and the filtrate decoction 1/2 cup is administered twice daily for 3 days

against diarrhoea, dysentery and leucorrhoea. Fresh plant is crushed and the extract is given in tonsillitis. Also fresh extract of the leaf about 3teaspoon is mixed with 1 spoon of honey and given twice daily for 3 or 4 days in blood dysentery.

Specimen examined: Salam, 595, 16/5/2009, Lambui.

Erythrina variegata L. (Fabaceae)

Vern. Name: ***Thikchowon kahunga***

It is a medium to large tree with small black prickles cover the stem and branches. Occasional, grows wild.

Uses: Pounded bark of the plant is made into paste and applied externally in rheumatic complaints. Young stem of about 200g are crushed and boiled with water and the decoction (10-15ml) is given twice daily after meals for 7 days in stomach troubles. Flower decoction with honey1/2 glass is also given twice daily for 15 days in liver troubles.

Specimen examined: Salam, 582, 20/5/2009, Ukhrul.

Euphorbia antiquorum L. (Euphorbiaceae)

Vern. Name: ***Tengnou***

It is a large and much branched, succulent, xerophytic shrub with spines. Common, planted as ornamental.

Uses: Stem is pierced to make a hole and finger infected with paronychia, whitlow and other nail diseases are gently nudge inside the hole. The latex of the plant is rubbed and scratched over warts for eradication by the *Tangkhul* people.

Specimen examined: Salam, 585,6/1/2009, Hundung.

Eupatorium adenophorum Spreng.(Asteraceae)

Vern. Name: ***Naga khawo***

It is a tall branching herb. Common, grows wild in the foothills.

Uses: Leaf juice is applied on cuts and injuries for clotting blood and quick healing. Decoction of the leaf half glass is taken twice daily for 3 days in dysentery.

Specimen examined: Salam, 521, 15/5/2009, Ukhrul.

E. odoratum L. (Asteraceae)

Vern. Name: ***Sheleirung***

It is a pubescent and profusely branching straggling shrub. Common, grows wild on roadsides.

Uses: Fresh leaf juice is applied on cuts and wounds to check bleeding and early healing, also given in gonorrhoea.*Tender twigs of about 20g are boiled with water and a piece of rhizomeof *Curcuma longa* and the decoction is given twice daily for one week in liver troubles.

Specimen examined: Salam, 543, 15/10/2009, Shiroy chingkha.

Euphorbia hirta L. (Euphorbiaceae)

Vern. Name: ***Pakhangleiton***

It is an annual trailing herb with branched and hairy stem herb. Very common, grows in the wastelands.

Uses: The fresh leaf smashed is applied on cuts and wounds for early healing. The decoction of the plant mixed with honey (3-5ml) is given once in a day for a period of 2-4 days to cure cough. A handful of tender twig with one litre of water are boiled and the decoction is given in kidney stone and menstrual disorder thrice daily for one week.

Specimen examined: Salam, 519, 10/7/2009, Litan.

Equisetum ramosissinum Desf.Subsp.***debile*** (Roxb.) Hauke (Equisetaceae)

Vern. Name: ***Lai-utong***

An herb occasionally grows near the river banks or moist places.

Uses: Paste of the plant is tied with bandage over fractured bone for early healing and settings. Ash obtained by burning the whole plant is applied on burning wounds.

Specimen examined: Salam, 503, 10/7/ 2009, Litan.

Ficus benghalensis L. (Moraceae)

Vern. Name: ***Khongnang***

It is an evergreen tree. Rare, planted.

Uses: *Bark powdered is mixed with *Zingiber montanum*rhizome powdered in equal proportion and made into pills. It is given once a day in the morning for a week to regulate irregular menstruation. The gum of the plant is also applied around boils for early suppuration and healing.

Specimen examined: Salam, 596, 18/5/2009, Sikibung.

F. cunea Steud. (Moraceae)

Vern. Name: ***Heirit***

It is a middle sized tree. Common, grows wild.

Uses: Fruit endosperm is used to made porridge and applied for gout. One glassful decoction of root bark is prescribed orally in the morning for 7 days in liver complaints. Bark is pounded into paste and applied externally in skin eruptions and pimples on the face.

Specimen examined: Salam, 594, 15/10/2009, Shiroy chingkha.

F. hispida L. f. (Moraceae)

Vern. Name: ***Theilungthei***

It is a shrub or small tree having hispid young shoot. Common, grows wild in waste places.

Uses: Fresh fruit is eaten raw in diabetes and dysentery. Latex of the plant is applied in boils for early suppuration. Fresh leaf is crushed into paste and applied on ringworm.

Specimen examined: Salam, 598, 10/7/2009, Litan.

Garcinia penduculata Roxb. (Clusiaceae)

Vern. Name: ***Changneira***

It is a large tall tree. Occasional, grows wild as well as planted.

Uses: Thin slice of fruit is boiled and given for urinary line clearance. Immature fruit are eaten raw for diabetes, jaundice and dysentery.

Specimen examined: Salam, 919, 17/12/2010, Tungou.

Gmelina arborea Roxb. (Verbenaceae)

Vern. Name: ***Edanthing***

It is a middle sized deciduous tree. Common, grows wild.

Uses: Boiled extract of the leaf is applied in any skin diseases. While root decoction is given in gonorrhoea. *Bark is pounded into paste and applied over the affected parts to treat fracture or dislocation of bones.

Specimen examined: Salam, 923, 12/9/2010, Sikibung.

Hedychium marginatum C.B. Clarke (Zingiberaceae)

Vern. Name: ***Tontairuikahunga***

It is a perennial herb having stout rhizomatous horizontal tuberous rootstocks. Common, cultivated, as well as grows in wild.

Uses: Fresh rhizome of 50g are crushed and boiled with water and the decoction is prescribed (10-15ml) twice daily for 15 days in diabetes, white discharge, pile bleeding and urinary tract stone.

Specimen examined: Salam, 551, 17/10/2009, Lamlang.

Heydyotis auricularia L. (Rubiaceae)

Vern. Name: ***Langban koukha***

It is an erect annual decumbent herb. Common, grows in grazing ground.

Uses: Boiled extract of the leaves half glass is given daily for 2weeks in diabetes. Fresh extract of the leaf is also applied in boils and burns.

Specimen examined: Salam, 3514, 26/11/2012, Sikibung.

Hibiscus abelmoschus L. (Malvaceae)

Vern. Name: ***Tawonrong***

It is a tall annual shrub. Common, grows wild on roadsides.

Uses: Pounded shoot is made into paste and applied in paralysis. *Juice obtained by crushing the root is also applied in inflammation.

Specimen examined: Salam, 928,12/9/2010, Sikibung.

H. sabdariffa L. (Malvaceae)

Vern. Name: ***Silotsougree***

It is an annual erect glabrous undershrub. Cultivated in the kitchen garden.

Uses: A handful of fresh leaves are boiled with 1litre of water along with crab and the decoction is given 1/2 glass twice a day for 10-15 days to the patients having stone in urinary bladder or kidney.

Specimen examined: Salam, 553, 10/7/2009, Litan **(Plate-21-C).**

Homalomena aromatica Schott. (Araceae)

Vern. Name: ***Hongoo kakla manbi***

It is a rhizomatous herb. Common, grows wild in wasteland.

Uses: Fresh leaves is smashed and applied as poultice on dog bite.

Specimen examined: Salam, 3504, 26/3/2012, Sikibung.

Homskioldia sanguine Retz. (Verbenaceae)

Vern. Name: ***Kharam leishok***

It is a large straggling shrub. Occasional, grows wild at the outskirt of forest.

Uses: Boiled extract of the leaf are used as massage in joint pains. While a glassful of leaf decoction is given daily for blood purification.

Specimen examined: Salam, 3529, 18/8/2012, Litan **(Plate-21-D).**

Houttuynia cordata Thunb. (Saururaceae)

Vern. Name: ***Ngayung***

It is a perennial aromatic herb with creeping rootstocks. Common, cultivated as well as grows wild.

Uses: Leaf is crushed and used as massage in muscular sprain and in any skin infection.

Specimen examined: Salam, 555, 15/5/2009, Ukhrul.

Hydrocotyle sibthorpioides Lam. (Apiaceae)

Vern. Name: ***Lai Kongrihan***

It is a diffused prostrate herb rooting at the nodes.

Uses: Fresh leaves of 40g and 20g of *Mishri* are crushed and mixed with a cup of water and given (5-10ml) twice daily for one week in stomach troubles.

Specimen examined: Salam, 3598, 26/11/2012, Sikibung.

Hyptis suaveolens Poit. (Lamiaceae)

Vern. Name: ***Tukma***

It is a tall rigid annual herb. Common, grows wild on roadsides.

Uses: One teaspoonful of root powdered is added to one glass of milk and taken every morning to give more strength. A glassful of root decoction is given once daily for one week in stomach ulcers.

Specimen examined: Salam, 556, 10/7/ 2009, Litan.

Ipomoea batatas (L.) Lam. (Convolvulaceae)

Vern. Name: ***Meiteipai***

It is a prostrate perennial herbaceous vine. Common, cultivated.

Uses: Paste of the leaf is applied and tied with bandage during bone fracture. Pounded tubers are rubbed on spots as coolant in burns. A glassful of fresh leaf decoction is given daily to women lacking sufficient lactation.

Specimen examined: Salam, 560,15/12/2009, Ukhrul.

Justicia adhatoda L. (Acanthaceae)

Vern. Name: ***Sipchang***

A tall dense bushy shrub having many long opposite ascending branches. Common,planted as a hedge plant.

Uses: Leaves are boiled along with rhizome of *Zingiber officinale* and given in chronic bronchitis, cold and cough with fever. Fresh leaves 6 or 7 are crushed and the extract of about 2 teaspoon is mixed with honey and given thrice daily for 3 days in diarrhoea and dysentery.

Specimen examined: Salam, 918, 16/4/2010, Ukhrul.

Juglans regia L. (Juglandaceae)

Vern. Name: ***Shirangthei***

It is a large deciduous tree. Rare, grows wild.

Uses: Fresh leaves are crushed into paste and applied in any skin diseases. Decoction of the bark is also given in intestinal worm for children. Kernel of the fruit is taken for improving memory and nervous disorder. Also, kernel of the seed is crushed and the paste obtained is applied on snake bite.

Specimen examined: Salam, 926, 30/10/2010, Sampui.

Kaempferia galanga L. (Zingiberaceae)

Vern. Name: ***Yaithamnamanbi***

It is an herb having tuberous rootstocks and fleshy root fibres.Occassional, grows wild.

Uses: Fresh rhizome 20g is crushed and the juice obtained is taken 2 teaspoon twice daily for three days in dysentery. Decoction of the rhizome with honey is given in muscle weakness.

Specimen examined: Salam, 1826, 26/11/2012, Sikibung.

Lantana camara L. (Verbenaceae)

Vern. Name: ***Nganam shirong***

It is a straggling aromatic shrub. Common, planted as hedge plant.

Uses: The decoction of the fresh leaf three teaspoonfuls is taken three times per day against heavy diarrhoea. Fresh leaf extract is also used as poultice in fresh cuts and wounds. Fresh leaf is also eaten raw to cure whooping cough.

Specimen examined: Salam, 530, 15/10/2009, Shiroy Chingkha.

Leucus aspera Link. (Lamiaceae)

Vern. Name: ***Mayanglambum***

It is a small annual herb. Common, grows wild on roadsides.

Uses: A glassful decoction of the plant is prescribed orally daily for 3 or 4 days in period pain, bronchitis, piles and body pain.

Specimen examined: Salam, 1829, 26/11/2012, Sikibung.

Ligustrum compactum Hook.f. (Oleaceae)

Vern. Name: ***Uyangan***

It is a small tree having more or less lenticellate branches. Common, grows wild on roadsides.

**Uses: ***Fresh leaf is chewed and sap is swallowed against mouth ulcers and tongue sores.

Specimen examined: Salam, 1832, 9/10/2012, Nambasi khullen.

Lilium mackliniae Sealy (Alliaceae)

Vern. Name: ***Timrawon***

It is a herb. Rare, grows only in sirohee hill.

**Uses: ***About 100-200g fleshy rhizome is boiled in 1 litre of water for 45 mins and the decoction 50ml is taken thrice daily for one week in stomach troubles.

Specimen examined: Salam,1833, 16/4/2012, Sirohill

Litsea sebifera Blume (Lauraceae)

Vern. Name: ***Khamarinarong***

It is a small evergreen tree. Common, grows wild.

Uses: Fresh leaf extract is made into paste and applied on cuts and injuries to stop bleeding. 200g bark is boiled in 1.5litres and the decoction 250ml is given thrice daily for 3 days in diarrhoea and

dysentery. While decoction of the leaf with common salt is given in diabetes.

Specimen examined: Salam, 1836, 20/6/2011,Riha.

Lycopersicum esculentum Mill. (Solanaceae)

Vern. Name: ***Khavathei kathura***

It is a pubescent herb. Common, cultivated as vegetables crop.1

Uses: Fresh leaf is smashed or rubbed on backside of the child in reducing high body temperature. Ripe fruit is applied on the head in dizziness.

Specimen examined: Salam, 1839, 9/10/2012, Nambasi khullen.

Lygodium japonicum (Thunb.) Sw. (Lygodiaceae)

Vern. Name: ***Chao-ma-libna***

It is a glabrous or slightly hairy frond. Common, grows wild in the forest area.

Uses: The fresh whole plant is pounded and the juice obtained is given 2 teaspoonfuls thrice daily for one week as expectorant in cough. Fresh 3-10 leaves are chewed and the sap is sucked for rejuvenating energy.

Specimen examined: Salam, 528, 17/5/2009, Nungbi khunou.

Lyonia ovalifolia (Wall.) Drude (Ericaceae)

Vern. Name: ***Heirukreng***

It is deciduous shrub having a rough and reddish brown bark. Common, grows wild.

Uses: Juice extracted from the fresh leaf is used in scabies, itches, and other skin diseases.

Specimen examined: Salam, 1841, 19/8/2011, Landang.

Machilus bombycina King ex Hook.f. (Lauraceae)

Vern. Name: ***Chaomanew***

It is a middle sized tree with spreading branches. Ocassional grows wild.

Uses: Fresh leaf extract is made into paste and used as massage to lower the body temperature. The smashed fresh leaf is also applied in joint pains.

Specimen examined: Salam, 1843, 1/11/2011, Sikibung.

Mentha spicata L. (Lamiaceae)

Vern. Name: ***Suiruihan***

It is a herbaceous rhizomatous perennial plant having obscurely quadrangular branches. Common, cultivated in the kitchen garden.

Uses: Three teaspoonfuls of leaf juice is mixed with one spoon of honey and given orally in diarrhoea and dysentery. Fresh shoot juice is also given in menstrual disorder. Dried powder leaf is used as tooth powder in toothache and other gum complaints. *A handful of fresh whole plant is boiled in 2 litres of water for 20 mins and the decoction 250ml is given twice daily for 15-20 days for the treatment of liver complaints. Fresh juice of *M. spicata* and rhizome of *Zingiber officinale* are mixed in equal proportion and given in severe colic pain.

Specimen examined: Salam, 547, 10/7/2009, Litan.

Melastoma malabathricum L. (Melastomaceae)

Vern. Name: ***Yachubi***

It is an erect shrub. Common, grows wild on roadsides.

Uses: Fresh leaves of 40g are boiled in one litre of water for 40 mins and the filtrate decoction of about 100ml is given thrice daily for one month for the treatment of diabetes. Fresh leaf with *Cyperus rotunda* is

pounded into paste and applied in boils. A cup of rhizome or fruit decoction is given twice daily for three days in diarrhoeaand dysentery.

Specimen examined: Salam, 1851, 1/12/2011, Grihang.

Melothria perpusilla Cogn. (Cucurbitaceae)

Vern. Name: ***Lam karopthei***

It is a monoecious tendril climber. Common, grows wild over fences and bushes.

Uses: About 200g of entire plant is boiled in 2 litres of water along with 2g gall bladder of bear and 250ml of honey and the boiled extract is filtered and given (1-2teaspoonful) twice daily for a week to cure jaundice.

Specimen examined: Salam, 1855, 20/ 8/2011, Khangkhui khullen.

Mesua ferrea L. (Clusiaceae)

Vern. Name: ***Nageswor***

It is a middle sized glabrous tree. Common, grows wild.

Uses: A glassful of decoction of the flower is prescribed twice daily for 2 weeks in bronchitis, menstrual disorder and bleeding piles.

Specimen examined: Salam, 1856, 19/8/2011, Landang.

Mikania cordata (Burm.f.) B.L.Robinson (Asteraceae)

Vern. Name: ***Naga–ra***

It is an aggressive twinning herb. Common, grows wild over fences and bushes.

Uses: Fresh leaf extract is given in cuts and injuries to stop bleeding, also applied in skin itches, ringworm and any other skin infection. Leaf decoction of *M.cordata* and *Cuscuta reflexa* is mixed in equal amount

and given in paralysis. A handful of tender twigs are boiled and a glass of decoction is given thrice daily in stomach ulcers and liver problem.

Specimen examined: Salam, 1860, 18/8/2011, Lambui.

Mimosa pudica L. (Mimosaceae)

Vern. Name: ***Kangphal- ikaithabi***

It is a straggling prickly herb. Common, grows wild in the waste land.

Uses: About 250ml of decoction of the shoot is prescribed twice daily after meals for one month against diabetes, kidney trouble and piles. Decoction of the root with sugar candy is also given ½ cup daily for 15 days in urinary complaints and white discharge.

Specimen examined: Salam, 1862, 1/11/2011, Sikibung.

Mussaenda roxburghii Hook.f. (Rubiaceae)

Vern. Name: ***Kongrawon***

It is a large shrub. Common, grows wild.

Uses: A glassful of leaf decoction with sugar crystals is given for indigestion, gastric problems, cough and fever.

Specimen examined: Salam, 1866, 20/8/2011, Khangkhui khullen

Musa paradisiaca L. (Musaceae)

Vern. Name: ***Mothei***

It is a stout and erect herb. Cultivated in the homestead compound.

Uses: Decoction of the inflorescence is taken in malaria fever. Immature fruits are preserved in bottle for a week, and the liquid thus obtained is taken once in a day by the *Tangkhul* women as a good health tonic in weaknesses. Tender leaf is slightly smashed and applied in boils. The crushed extract of the fleshy petiole (3-5ml) is also taken

in diarrhoea. Boiled stem with salt is given to women lacking sufficient lactation.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Nicotiana tabacum L. (Solanaceae)

Vern. Name: ***Hidak mana***

It is an erect viscidly –pubescent herb. Cultivated for tobacco leaves.

Uses: A piece of tobacco leaf is applied at the affected area in toothache. Fresh leaves are crushed and the juice obtained is applied on any poisonous bite.

Specimen examined: Salam, 1870, 19/8/2011, Landang.

Ocimum americanum L. (Lamiaceae)

Vern. Name: ***Sari***

It is a stout and erect herb. Cultivated in the homestead compound.

Uses: A handful of fresh young shoot boiled in 2 litres of water for 30 mins and the decoction of about 300ml is taken twice daily for 4 days in indigestion and painful urination. The ash of the petiole mixed with honey is also prescribed in diabetes.

Specimen examined: Salam, 1858, 15/2/2011, Ukhrul.

Oroxylum indicum Vent. (Bignoniaceae)

Vern. Name: ***Phong***

It is a small or middle sized tree having light brown bark. Occasional, grows wild in scrubforest areas.

Uses: About 15ml of the decoction of the root is taken three times per day for 3-4 days in irregular menstruation troubles of women. Boiled extract of the bark mixed with the leaf juice of *Mussaenda roxburghii* is taken orally to cure jaundice. Boiled extract of the pod is taken in

throat complaints. *About 250g bark with 2 litres of water is boiled and to the decoction, 250ml of honey and 2g of bear heart is added and given 300ml thrice daily for one week in intestinal and stomach problems.

Specimen examined: Salam, 913,29/10/2010, Chassad.

Oxalis corniculata L. (Oxidaceae)

Vern. Name: ***Shaithur***

It is a diffuse herb with procumbent branches. Common, grows wild.

Uses: Boiled extract of the plant is given against stomach complaints, painful urination, colic, indigestion and acidity. Whole plant with *Allium ascalonicum* is grinded and 2 teaspoonfulof juice is given twice daily for seven days to treat accumulation of stones in urinary tracts. Fruit is crushed and the juice is used as eye drops for eye troubles.

Specimen examined: Salam, 524, 16/5/2009, Lambui.

Oryza sativa L. (Poaceae)

Vern. Name: ***Maa***

It is an annual grass having long narrow flat leaves.Very common, cultivated

Uses: The dehusked grain is chewed and applied on dog-bite area by all the communities in Manipur.

Specimen examined: Salam,3520, 8/7/2012, Ukhrul.

Paederia foetida L. (Rubiaceae)

Vern. Name: ***Painamra***

It is a glabrous or puberulous twinning herb. Common, grows wild.

Uses: Paste of the leaf is tied with bandage over fractured bone for early healing and settings. Leaves are fried and eaten for piles.

Specimen examined: Salam, 1875, 5/8/2012, Khangkhui khullen.

Parkia timoriana Merr. (Mimosaceae)

Vern. Name: ***Yongchak***

It is a middle sized unarmed tree. Common, cultivated as well as grows wild.

Uses: The decoction of the bark (10-15ml) is given twice daily for three days to cure diarrhoea and dysentery. The decoction of the pod is given in bleeding piles.

Specimen examined: Salam, 527, 15/12/2009, Ukhrul.

Paris polyphylla Sm. (Alliaceae)

Vern. Name: ***Kazeapai***

It is an herb. Rare, grows wild.

Uses: Decoction of the rhizome is prescribed thrice daily for one week in bronchitis. *Fresh rhizome is eaten raw for stomach ulcers. Decoction of the leaf is administered in diarrhoea, dysentery, sore throat, and also taken as appetizer.

Specimen examined: Salam, 509, 15/5/2009, Ukhrul **(Plate-21-E).**

Pasania pachyphylla Schott. (Fagaceae)

Vern. Name: ***Kuhi***

It is a large evergreen tree. Common, grows wild.

Uses: Bark is pounded into paste and applied as poultice on snake bite.

Specimen examined: Salam, 1876, 18/8/2011,Lambui.

Pavetta indica L. (Rubiaceae)

Vern. Name: ***Sipchanghan Kathura***

It is a shrub. Common, grows wild as well as planted.

Uses: Fresh leaves of 40g are boiled in one litre of water for 40 mins and the filtrate decoction of about 100ml is given thrice daily for three weeks in jaundice.

Specimen examined: Salam, 1877, 1/11/2011, Sikibung **(Plate-21-F).**

Persicaria chinense L. (Polygonaceae)

Vern. Name: ***Hannaha***

It is a perennial herb. Common, grows wild

Uses: A half cup decoction of the leaf is prescribed against indigestion and gastric problems. While boiled extract of the root is also given in diarrhoea and dysentery.

Specimen examined: Salam, 1895, 3/8/2011, Maku.

Phaseolus lunatus L. (Fabaceae)

Vern. Name: ***Kalendri***

It is a perennial climber. Common, cultivated in the kitchen garden.

Uses: The fresh leaf is smashed and applied as massage in high body temperature especially for children. A glassful of leaf decoction is taken twice a day for 2 days in stomach complaints and worm affection.

Specimen examined: Salam, 1881, 1/12/2011, Grihang.

Phlogacanthus thyrsiformis (Roxb. ex Hardw.) Mabb. (Acanthaceae)

Vern. Name: ***Sipchang***

It is an evergreen shrub having smooth grey bark. Occasional, planted as hedge plant as well as grows wild in waste places.

Uses: Boiled extract of the leaf (3-4ml) is prescribed in cough, fever and in high body temperature. Leaves are boiled in water and used at the time of bath to get relief from flu especially for small children.

Specimen examined: Salam, 512, 10/1/2009, Litan.

Phlogacanthus tubiflorus Nees (Acanthaceae)

Vern. Name: ***Sipchang Kahunga***

It is a medium evergreen shrub. Common, grows wild in waste places.

Uses: Leaves are smashed and rubbed daily at bed time in body pain. Root decoction mixed with honey is given in female white discharge. Red flowers are eaten raw with chilly chutney and are considered good for relieving cough.

Specimen examined: Salam, 1884, 15/2/2011, Ukhrul.

Phyllanthus emblica L. (Euphorbiaceae)

Vern. Name: ***Shakshathei***

It is a middle sized tree having crooked trunk. Common, planted in the home garden as well as grows wild.

Uses: Fresh fruit juice is applied externally as eye dropped in eye diseases. The boiled extract of the fruit halfglass is prescribed in constipation. About 30g fresh fruit is pounded and the juice is mixed with a pinch of sugar and is taken orally to get relief from irregular menstruation trouble. Extract of the fruits with little lime is given against stone in the urinary tract and kidney.

Specimen examined: Salam, 514, 17/10/2009, Lamlang.

Pinus kesiya Royle (Pinaceae)

Vern. Name: ***Matangthing***

It is a tall gregarious tree having whorled branches. Common, planted along the hill slopes.

Uses: Resinous gum of the plant is applied for treating scabies and parasitic skin diseases and also applies in crack heel.

Specimen examined: Salam, 1890, 18/8/2011, Lambui.

Platycodon grandiflorum (Jacq.) A. DC. (Campanulaceae)

Vern. Name: ***Balloonwon***

It is an herb. Rare, grows wild.

Uses: Decoction of the root is prescribed against cough and cold.

Specimen examined: Salam, 3550, 8/7/2012, Ukhrul.**(Plate-20-A)**

Plantago erosa Wall. (Plantaginaceae)

Vern. Name: ***Havathan***

It is a glabrous perennial herb. Common, grows wild in moist places.

Uses: Slightly heated leaves are applied on boils to heal it within few days after automatic oozing out the pus, also in the affected parts of the body to get relief from muscular sprain. A handful of fresh whole plant boiled in 2 litres of water for 30 mins and the decoction of about 100ml is taken twice daily for 3 days against stomach ulcers. Fresh leaf juice is applied externally in fresh cuts and wounds to stop bleeding

Specimen examined: Salam, 523, 16/5/2009, Lambui.

Plumbago zeylanica L. (Plumbaginaceae)

Vern. Name: ***Telhidak***

It is a tall erect undershrub.Rare, cultivated.

Uses: About 3 teaspoonful of fresh leaf juice is given twice daily for 7 days in menstrual disorder. Leaf decoction is given daily to expel intestinal worm.

Specimen examined: Salam, 1892, 20/8/2011, Sikibung.

Pogostemon benghalensis kuntze (Lamiaceae)

Vern. Name: ***Huirongrai-ri***

It is a perennial aromatic shrub.Occasional, cultivated.

Uses: Decoction of the leaf as well as 2-3 leaves is eaten raw against bleeding piles.

Specimen examined: Salam, 1893, 16/6/2011, Lauphang **(Plate-19-C).**

P. parviflorus Benth. (Lamiaceae)

Vern. Name: ***Karihan***

It is an aromatic herbaceous plant. Occasional, grows wild.

**Uses: ***A half cup decoction of the leaf is given twice daily for 3 days in throat problem.

Specimen examined: Salam, 326, 20/11/2012, Shangshak khullen.

Polygala arillata Buch-Ham. (Polygaceae)

Vern. Name: *Mayongwon*

It is a shrub with young parts pubescent. Grows wild, occasional.

Uses: Root is pounded into paste and applied in the forehead in dizziness and headaches.

Specimen examined: Salam, 3526, 5/8/2012, Phadang.

Pouzolzia viminea Wedd. (Urticaceae)

Vern. Name: ***Ari-arong***

It is a perennial shrub. Occasional, grows wild

**Uses: ***Stem after removing the outer layer is boiled with water and the decoctionhalf glass is given in the morning for one week against stomach ulcers.

Specimen examined: Salam, 329, 28/11/2012, Sampui.

Pratia nummularia Benth. (Campanulaceae)

Vern. Name: ***Lunkhor Kongrihan***

It is a small prostrate trailing herb. Common, grows wild in moist places.

Uses: Fresh whole plant 200g boiled with 1 litre of water and the decoction half glass is taken twice daily for 10-15 days against urinary tract stone.

Specimen examined: Salam, 526, 16/10/2009, Lunghar **(Plate-20-B).**

Prunus persica (L.) Batsch (Rosaceae)

Vern. Name: ***Mayangthei***

It is a small and middle sized deciduous tree. Common, planted in the kitchen garden.

Uses: The smashed leaf is made into paste and applied on cuts and wounds. Bath is taken with slightly boiled fresh leaf to cure any skin diseases.

Specimen examined: Salam, 927, 16/4/2010, Ukhrul.

Psidium guajava L. (Myrtaceae)

Vern. Name: ***Pungdonrong***

It is a small branched tree. Common,planted in the kitchen garden.

Uses: Crushed extract of the tender leaf or boiled extract of the root is mixed with a tablespoon of honey andgiven in diarrhoea and blood dysentery. The smashed leaf paste is also applied in bleeding piles.

Specimen examined: Salam, 554, 15/10/2009, Ukhrul.

Punica granatum L. (Punicaceae)

Vern. Name: ***Kaphoi***

It is a big shrub or small tree. Common, cultivated in the kitchen garden.

Uses: A half cup decoction of the outer skin of fruit is given twice daily for 3 days in diarrhoea and dysentery. Leaves are crushed together with petiole of *Colocasiagigantea* and the juice obtained is given (10-15ml) twice daily for 3 days in stomach complaints and acidity. The juice obtained by crushing the leaves 2 teaspoon is mixed with honey and given twice daily for 7 days in blood vomiting and cholera. Fresh leaf juice is also used as nasal drops in nasal bleeding.

Specimen examined: Salam, 1894, 18/8/2011, Lambui.

Quercus serrata Thunb. (Fagaceae)

Vern. Name: ***Hoktheithing***

It is a middle- sized tree. Common, grows wild.

**Uses: ***The ash obtained by burning the leaves are mixed with water until it turns coffee colour and given half cup in white discharge. Roasted seeds are used in diarrhoea.

Specimen examined: Salam, 3532, 5/8/2012, Phadang.

Ranunculus sceleratus L. (Ranunculaceae)

Vern. Name: ***Kakyel khujil***

It is an annual herb having hollow stem and branches. Common, grows wild in moist places.

Uses: A half cup decoction of the leaf is given twice daily for 6-7 days in stomach ulcers. Fresh extract is made into paste and applied in ringworm.

Specimen examined: Salam, 564, 10/7/ 2009, Litan.

Rhododendron arboreum Sm. (Ericaceae)

Vern. Name: ***Kokliwon***

It is a middle sized tree. Common, grows wild in sirohee.

Uses: Fresh petals are eaten in diarrhoea and dysentery.*****Decoction of the leaf is given before delivery for easy delivery and also given after delivery to control dizziness of women due to excess bleeding or to recover from general weakness. The leaf is also used for easy removal of fish bones when stuck in the throat.

Specimen examined: Salam, 538, 15/5/2009, Ukhrul.

Rhus semialata Murr. (Anacardiaceae)

Vern. Name: ***Khamkhuithei***

It is a deciduous shrub or small tree. Common, planted as well as grows wild.

Uses: *****Seeds are soaked in water and the liquid is given in person suffering from food poisioning, also in stomach ulcer, urinary tract stone. Tender shoot is eaten raw in diarrhoea and indigestion.

Specimen examined: Salam, 3559, 18/8/2012, Litan.

Rubus ellipticus Sm. (Rosaceae)

Vern.Name: ***Karathei***

It is a large straggling, robust shrubs. Common, grows wild.

Uses: Tender shoot of 300g boiled with 1.5 litres for 40 mins and the decoction 100ml is taken twice daily for 10-15 days in urinary tract stone and kidney stone. Fresh tender leaves 3-4 are chewed and sap is swallowed against tongue sores. A half cup of root decoction is given twice daily for 3 days in dysentery.

Specimen examined: Salam, 3557, 26/11/2012, Sikibung.

Sansevieria zeylanica (L.) Willd. (Agavaceae)

Vern. Name: ***Napiarangba***

It is an herbaceous perennial plant. Common, planted as ornamental plant in the garden.

Uses: Fresh leaves are crushed and the extract obtained is applied as antidote to snake and dog bite.

Specimen examined: Salam-3556, 26/11/2012, Sikibung.

Sapindus emarginatus Vahl. (Sapindaceae)

Vern. Name: ***Chaochumthei***

It is a small or medium sized deciduous tree. Occasional, planted or grows wild.

Uses: Mesocarp part of the fruit is externally applied against toothache. Epicarp of the fruit is crushed in a cup of water and the extract is given 2 spoons twice a day for 3 days in dysentery. Decoction of the fruit pulp mixed with stingless bee honey is given against fever and stomachache. *The extract obtained by rubbing the fleshy part of the fruit on stone with water is applied to forehead for worm affection in

children. Also, the extract obtained by crushing the fruit pulp is mixed with vegetables oil and put inside the anus in constipation.

Specimen examined: Salam, 537, 16/5/2009, Lambui.

Schima wallichii Choisy (Theaceae)

Vern. Name: ***Mashuithei***

It is a large tree having lenticellate branches. Common, grows wild.

Uses: Bark is pounded into paste and applied on cuts and injuries for clotting blood and quick healing.

Specimen examined: Salam, 535, 15/5/2009, Ukhrul.

Scoparia dulcis L. (Scrophulariaceae)

Vern. Name: ***Nungpambi***

It is an annual or perennial herb having a much branched erect stem. Very common, grows wild

Uses: A glassful of tender shoot decoction with sugar candy is given twice daily for one month in urinary tract stone. Fresh leaves are crushed and the juice obtained is added to a glass of milk and given daily in the morning as tonic in general weakness.

Specimen examined: Salam, 3545, 26/11/2012, Sikibung.

Scutelleria discolor Colebr. (Lamiaceae)

Vern. Name: ***Yenakha***

It is a slender erect annual herb. Occasional, grows wild in moist places

Uses: A half cup decoction of the whole plant is taken twice daily for 7 days against cough, stomach upsets and malaria fever.

Specimen examined: Salam, 1885, 1/11/2011, Sikibung **(Plate-19-D).**

Sida acuta Burm. (Malvaceae)

Vern. Name: ***Uhan***

It is a small undershrub.Common, grows wild.

Uses: A glassful decoction of the root is given twice daily for 7 days in bronchitis and asthma. Juice obtained by crushing the leaves 2-3 teaspoon is mixed with one spoon of honey and given twice daily in whooping cough, diarrhoea and vomiting.

Specimen examined: Salam, 3548, 18/8/2012, Litan.

Solanum anguivi Lam. (Solanaceae)

Vern. Name: ***Kapkhathei***

It is a much branched and very prickly undershrub. Common, grows wild.

Uses: About 20 fresh fruits are crushed and the juice obtained 2 teaspoon with one spoon of honey and bear heart2g are mixed and prescribed twice daily for one week in typhoid fever. Fresh fruit of the plant is applied externally against toothache. Fresh fruits are eaten raw in cough and fever by all the communities in Manipur.

Specimen examined: Salam, 536, 16/5/2009, Lambui.

Solanum nigrum L. (Solanaceae)

Vern. Name: ***Hantehan***

It is an annual herbaceous herb. Common, grows in the wasteland.

Uses: Fruit is also eaten raw in fever. Root decoction (10-20 ml) is taken twice daily for a period of 3-4 days in cough and lung congestion. Leaf decoction mixed with honey is prescribed as a remedy for kidney and pancreatic disorders.

Specimen examined: Salam, 533, 17/ 5/2009, Nungbi khunou.

Solanum torvum Schltdl. (Solanaceae)

Vern. Name: ***Kapkhathei***

It is a tomentose shrub having a stout stem.Common, grows wild.

Uses: Fresh fruit 8-10 boiled with water and the decoction is given ½ cup twice daily for 5 days in wormicide.

Specimen examined: Salam, 545, 15/5/2009, Ukhrul.

Sonchus wightianus DC. (Asteraceae)

Vern. Name: ***Kameomeikachi***

It is an annual glabrous herb. Common, grows wild in moist areas.

Uses: Soft fleshy stem is pounded with a pinch of kerosene and the paste is put inside the anus once daily for 2-3 days to cure piles bleeding.

Specimen examined: Salam, 1878, 1/11/2011,Sikibung

Smilax lanceifolia A. DC. (Smilacaceae)

Vern. Name: ***Shangha-yung***

It is a small slender wiry unarmed climber. Ocassional, grows wild.

**Uses: ***Fresh rhizome of 300-400g boiled with 1 litre of water for 45 mins and the decoction of 200ml is taken as a substitute of tea thrice daily for one week for good complexion.

Specimen examined: Salam, 1891, 1/11/2011, Sikibung.

Spilanthes acmella Murray (Asteraceae)

Vern. Name: ***Ansa han***

It is an annual herb. Common, grows wild.

Uses: A half cup decoction of the plant is given twice daily for 3days in dysentery.Flower is steamed cooked and taken for curing tongue sores and foul breadth smell. Fresh flower is crushed into paste and applied

in toothache. Fresh leaves are crushed and the extract obtained is applied as poultice in snakebite

Specimen examined: Salam, 1872, 18/8/2011, Lambui.

Spondias pinnata Kurz. (Anacardiaceae)

Vern. Name: ***Khursongthei***

It is a middle sized deciduous tree. Rare, planted in the home garden.

Uses: About 250g bark with 2 litres of water is boiled and the decoction 300ml twice daily for 3 days is prescribed in dysentery and diarrhoea. The juice obtained by crushing the fresh leaf is dropped into ears to cure earache.

Specimen examined: Salam, 549, 10/7/2009, Litan.

Stachytrapheta cayennensis (Rich.) Vahl. (Verbenaceae)

Vern. Name: ***Tharoi pijup angouba***

It is a bushy undershrub.Common, grows wild in wasteland.

**Uses: ***Fresh leaves are pounded into paste and are used as massage in bodypain.

Specimen examined: Salam, 1869, 18/8/2011, Lambui.

Stellaria media (L.) Vill. (Caryophyllaceae)

Vern. Name: ***Yerum-Keirum***

It is an erect herb having procumbent stem. Common, grows wild.

Uses: Fresh plant is crushed into paste and applied in fresh wounds, skin itches, swelling.

Specimen examined: Salam, 1865, 18/8/2011, Lambui.

Stephania hernandifolia (Willd.) Walp. (Menispermaceae)

Vern. Name: ***Koubru yai***

It is a climber with ovate-deltoid peltate leaves.Rare, grows wild.

Uses: Fresh leaves are crushed into paste and applied in any skin diseasese.The juice obtained by pounding the leaf 2 teaspoon is mixed with honey and prescribed twice daily for 3 days in diarrhoea and urinary trouble.

Specimen examined: Salam, 3561, 26/11/2012, Sikibung **(Plate-20-C).**

Strobilanthes auriculatus Nees (Acanthaceae)

Vern. Name: ***Kumtharuk khangrangwon***

It is medium sized shrub having spreading branches. Common, grows wild, flowering appears once in every six years.

Uses: About 150g of root and equal quantity of *Phlogocanthus tubiflorus* roots are boiled together and the decoction half cup twice daily for 5 days is given in fever.

Specimen examined: Salam, 3562, 8/7/2012, Ukhrul.

Swertia chirata Buch.-Ham. (Gentianceae)

Vern. Name: ***Langchung***

It is a small herb. Common, grows wild in the hilly grasslands.

Uses: Whole plant decoction is a remedy for fever, cough, stomach ulcers, diabetes and indigestion.* Fresh or dried whole plant decoction is mixed with 100ml honey and 2g bear heart and is given one teaspoonful thrice daily for 7 days in jaundice.

Specimen examined: Salam, 3563, 8/10/2012,Shiroy chingkha **(Plate-19-E).**

Syzygium cumini (L.) Skeels (Myrtaceae)

Vern. Name: ***Chomshathei***

It is a large evergreen tree. Occasional, planted in the home garden.

Uses: The ash obtained by burning the bark of the plant 2 teaspoon is mixed with one spoon of honey and given in vomiting. *Dried bark is pounded into powdered mixed with little amount of water and given twice daily for 15 days in diabetes to control the blood sugar in the body. A half cup decoction of the seeds is given twice daily for 3 days in diarrhoea and dysentery.

Specimen examined: Salam, 3565, 17/2/2011, Lunghar.

Tacca laevis Roxb. (Taccacaceae)

Vern. Name: ***Yaipai***

It is an herb. Occasional, grows wild.

**Uses: ***Rhizome is pounded into paste and applied over boils for early suppuration.

Specimen examined: Salam, 3567, 26/11/2012, Sikibung. **(Plate-20-D).**

Tagetes patula L. (Asteraceae)

Vern. Name: ***Sanarei***

It is a hardy annual shrub having erect branching. Common, planted as an ornamental in the garden.

Uses: Fresh leaf is crushed and the juice obtained is applied in muscular pain. Smashed leaf is also applied for mosquitoes bite.

Specimen examined: Salam, 529, 15/10/2009, Shiroy chingkha.

Tamarindus indica L. (Caesalpinaceae)

Vern. Name: ***Mange***

It is a large handsome tree. Occasional, Cultivated as well as grows wild.

Uses: A glassful decoction of the leaf is given twice daily for 7 days in stomach trouble and ulcers. Crushed extract of the seed is made into paste and applied in snake and dog bite.

Specimen examined: Salam, 3568, 18/8/2012, Litan.

Taxus baccata *L*. (Taxaceae)

Vern. Name: ***Kathinaomatang***

It is an evergreen tree. Rare, planted in the home garden.

Uses: *About 5ml of leaf decoction is given twice daily for 5 days against cough and fever.

Specimen examined: Salam, 534, 3/1/2009, Ukhrul **(Plate-20-E).**

Terminalia arjuna (Roxb. ex DC.) Wight & Arn. (Combretaceae)

Vern. Name: ***Mayokpa***

It is a large tree having spreading branches. Rare, planted.

Uses: Decoction of the bark is given twice daily for 5-7 days in fever, bronchitis, colic and liver complaints.

Specimen examined: Salam, 584, 12/8/2009, Sikibung.

Terminalia citrina Roxb. (Combretaceae)

Vern. Name: ***Manahi***

It is a large deciduous tree. Common, grows wild.

Uses: Bark is pounded into paste and applied as poultice on snake bite.

Specimen examined: Salam, 338, 16/11/2012, Sikibung.

Thalictrum foliolosum DC. (Ranunculaceae)

Vern. Name: ***Kharuri***

It is a tall herb with compound leaves. Occasional, grows wild.

Uses: Juice extracted from the fresh leaf is used in scabies. About 200g root is boiled with1.5 litres of water and the decoction 250ml is given twice daily for one week in cold and cough with fever and stomachache.

Specimen examined: Salam, 3574, 8/10/2012, Shiroy chingkha **(Plate-20-F).**

Tinospora cordifolia (Willd.) Hook. f. & Thomson (Menispermaceae)

Vern. Name: ***Ningthoukhongli***

It is a large succulent deciduous climber. Occasional, grows wild.

Uses: Mixture of tender shoot of the plant, leaves of *Tectona grandis* and the roots of *Rubia cordifolia* is boiled with honey and the decoction is given twice daily for 6-7 days against rheumatic pain. Fresh leaf juice (3-4ml) is taken twice daily for 3 days against diarrhoea and dysentery. The boiled extract of the stem is taken twice daily against diabetes. *****Stem is cut into pieces and grinded, it is soaked in water overnight and to the residue a pinch of sugar is added and is given once daily in sexual weakness.

Specimen examined: Salam, 3577, 26/11/2012, Sikibung.

Toona ciliata M. Roem. (Meliaceae)

Vern. Name: ***Ipang***

It is a large deciduous tree. Common, grows wild.

Uses: A handful of leaves boiled in one bucket of water are used in treating scabies and any other skin diseases.

Specimen examined: Salam, 3580, 26/11/2012, Sikibung.

Urena lobata L. (Malvaceae)

Vern. Name: ***Phanamthei***

It is an erect herb. Common, grows wild.

Uses: Fresh leaf extract is rubbed or used as massage in high body temperature. A half cup decoction of the leaf is also given twice daily for 7 days in kidney stone and urinary tract stone.

Specimen examined: Salam, 3583, 5/8/2012, Phadang

Urtica parviflora Roxb. (Urticaceae)

Vern. Name: ***Lenghui***

A slender herb with stiff stinging hairs. Common, in dense and less lighted region of the forest.

Uses: Fresh leaf juice is used as nasal drops in frequent nasal bleeding especially for children.

Specimen examined: Salam, 340, 22/9/2012, Hundung.

Vanda tessellata Hook. (Orchidaceae)

Vern. Name: ***Shailengwon***

It is a perennial epiphytic orchid. Grows wild, occasional.

Uses: Whole plant is pounded into paste and tied with bandage over fractured bone for early healing and settings.

Specimen examined: Salam, 3584, 8 /7/2012, Lambui

Vitex negundo L. (Verbenaceae)

Vern. Name: ***Urikshibi***

It is a shrub or small tree. Occasional, grows wild.

Uses: Decoction of leaf is used as skin wash in scabies. A half glass decoction of the leaf mixed with honey is given twice daily for 5 days in rheumatic pain, piles, throat swelling.

Specimen examined: Salam, 3591, 18/8/2012, Litan.

Wedelia calendulacea DC. (Asteraceae)

Vern. Name: ***Tangkhul kaho***

It is a straggling herb.Occasional, grows in moist places.

Uses: A handful of fresh whole plant is boiled with 1.5 litres of water and given ½ cup twice daily for 10-15 days in jaundice.

Specimen examined: Salam, 3593, 26/11/2012, Sikibung.

Xanthium strumarium L. (Asteraceae)

Vern. Name: ***Phanang kahakpasi***

It is a coarse annual herb. Common, grows wild in waste places.

Uses: A handful of fresh leaves are pounded and the juice obtained 2-3 teaspoon is given thrice daily for 7 days in urinary problems.

Specimen examined: Salam, 539, 15/10/2009, Shiroy chingkha.

Xylosma longifolia Clos (Flacourtiaceae)

Vern. Name: ***Nongleisang***

It is a tree. Common, grows wild.

Uses: A half cup decoction of the leaf is given once daily for 5-7 days in cough, bronchitis, liver complaints. Fresh leaf extract is also used as massage in muscle sprain and joint pains. Also, the decoction obtained by boiling the leaf along with the leaves of *Phlogocanthus thyrsiflorus*

and *Acorus calamus* in equal amountis prescribed 250ml twice daily for 5-7 days in severe pile case. Leaf is boiled along with the leaf of *Phlogocanthus thyrsiflorus* and taken bath for skin diseases.

Specimen examined: Salam, 3595, 18/8/2012, Litan.

Zanthoxylum acanthopodium DC. (Rutaceae)

Vern. Name: ***Mangnangthei***

It is a straggling thorny aromatic shrub. Common, grows wild as well as cultivated in the kitchen garden.

Uses: Bark is used as toothbrush for toothache. Juice obtained by crushing the tender twig is given as nasal drops for sinusitis. Decoction of the leaf and seeds with common salt is applied against wart.

Specimen examined: Salam, 600, 10/7/2009, Litan.

Zingiber cassumunar Roxb. (Zingiberaceae)

Vern. Name: ***Ram hui***

It is an aromatic rhizomatous herb. Cultivated.

Uses: *Crushed rhizome Juice 2 teaspoon is given daily for 3 days to get relief from tonsillitis.

Specimen examined: Salam, 347, 20/5/2012, Ukhrul.

Zingiber montanum (K.D. Koenig) Link ex Dietr. (Zingiberaceae)

Vern. Name: ***Tekhao yaikhu***

It is a large aromatic herb having horizontal tuberous rootstocks. Common, cultivated as well as grows wild.

Uses: About 2 teaspoonful of crushed rhizome juice is given twice daily for 7 days in menstrual irregularity.

Specimen examined: Salam, 347, 20/5/2012,Ukhrul.

Zingiber officinale Rosc. (Zingiberaceae)

Vern. Name: ***Hui***

It is an aromatic rhizomatous herb. Cultivated.

Uses: Roasted rhizome juice 2 teaspoon is mixed with 2or 3 drops of honey and used as expectorant in dry cough. The rhizome is crushed and made into a paste along with the seeds of *Brassica campestris*, roots of *Carica papaya* and bulbs of *Allium sativum* is applied on rheumatic by the *Tangkhul* tribe.

Specimen examined: Salam, 540, 16/10/2009, Lunghar.

4.4: ETHNO-VETERINARY PLANTS

The *Tangkhul* people have been raising a good number of domestic animals right from the primitive time. They commonly rear pigs, cattle, buffalo and mithun but not rear sheep and goat, since it was forbidden to rear goats and eat its meat; poultry rearing is common practice among the *Tangkhul* tribe in Ukhrul district. Since plants have been used both in the prevention and cure of various diseases of humans and their pets. The data based information on the plants used by the *Tangkhul* tribe for veterinary purpose was collected.*Tangkhul* tribe generally depends upon the traditional methods of treatment of their animals. So, collection of data regarding common veterinary ailments of the locality with their causes, symptoms and traditional methods of treatment, plants/plant parts used for preparation of the traditional medicines, methods of drug administration are enumerated below in alphabetical order.

Aloe barbadensis Mill. (Alliaceae)

Vern. Name: ***Aloe-vera***

It is a herb with basal rosette of succulent leaves. Common, cultivated.

Uses: Fleshy pulp of the leaf is crushed and the juice obtained is applied on sores for removing maggot from wounds of all domestic animals.

Specimen examined: Salam, 946, 16/11/2010, Ukhrul.

Asparagus racemosus Willd. (Alliaceae)

Vern. Name: ***Kameoseihawon***

It is a slender scandent plant with reflexed spines. Common, wild as well as planted.

Uses: A glassful decoction of root rhizome is orally administered 3-4 times a day for about 10-12 days as cure for cough and cold of pig and cattle.

Specimen examined: Salam, 961, 12/9/2010, Sikibung.

Artemisia maritima L. (Asteraceae)

Vern. Name: ***Maharua***

It is a deciduous shrub having a rough fibrous bark. Common, grows wild.

Uses: Fresh leaves are crushed and thejuiceobtained is given by adding apinch of salt twice a day to control loose motion of cattle.

Specimen examined: Salam, 954, 16/11/2010, Ukhrul.

Azadiracta indica A. Juss. (Meliaceae)

Vern. Name: ***Neem***

It is a large to middle sized tree. Occasional, planted or grows wild in the roadsides.

Uses: A glassful decoction of leaves is orally administered thrice daily for about 7 days as cure for cough.

Specimen examined: Salam, 963, 12/4/2010, Sikibung.

Cassia fistula L. (Caesalpinaceae)

Vern. Name: ***Chouhee***

It is middle–sized tree with a spreading crown. Common, grows wild as well as planted along roadsides.

Uses: Fresh leaves of about 250g are boiled in 1 litre of water for 10-15 mins and the decoction 60ml is drenched to the cattle in the morning and the other half in the evening for 3 days as cure for dysentery.

Specimen examined: Salam, 562, 10/7/2009, Litan.

Cajanus cajan (L.) Millsp. (Fabaceae)

Vern. Name: ***Khaithei***

It is an erect branching shrub. Common, cultivated.

Uses: Leaf decoction of about 3 teaspoonfuls is given to dog to increase its appetite.

Specimen examined: Salam, 580, 16/5/2009, Lambui.

Canabis sativa L. (Canabinaceae)

Vern. Name: ***Ganja***

It is a scarcely branched and smelling annual herb of variable height. Occasional, Cultivated as well as grows wild.

Uses: ******Dried leaves of about 250g are pounded into powdered and mixed with stool of goat is fed to the poultry as cure for the treatment of fever for a week twice daily.

Specimen examined: Salam, 982, 4/8/2010, Lamlang.

Chenopodium album L. (Chenopodiaceae)

Vern. Name: ***Kazingtareihan***

It is an annual herb. Common, cultivated also wild.

Uses: Whole plant are crushed and the juice obtained 2 tablespoonfuls is administered3-4 times a day at an interval of 4-5 hours for about 3-4 days in dysentery.

Specimen examined: Salam, 993, 17/12/2010, Tungou.

Curcuma longa L. (Zingiberaceae)

Vern. Name: ***Yaigang***

It is a rhizomatous perennial herb having irregular shaped rhizome.Very common, cultivated.

Uses: Rhizome is pounded into paste and applied for healing bone fracture for domestic animals.

Specimen examined: Salam, 902, 28/10/2010, Phange.

Cucurbita maxima Duch. (Cucurbitaceae)

Vern. Name: ***Khaimaithei***

It is a large climbing annual herb. Very common, cultivated as an important crop.

Uses: *Fresh fruit is pounded into paste and applied to treat wounds and injuries in dog.

Specimen examined: Salam, 911, 17/7/2010, Shakok.

Cucumis sativus L. (Cucurbitaceae)

Vern. Name: ***Kharopthei***

It is a hispidly hairy climber. Very common, cultivated as vegetables crop.

Uses: Fresh leaves are boiled in water and the decoction is bottle-fed to the cattle to increase its appetite.

Specimen examined: Salam, 1813, 8/10/2012, Nambasi khunou.

Datura stramonium L. (Solanaceae)

Vern. Name: ***Sagol hidak***

It is small glabrous undershrubs whose leaves are ovate oblong to triangular with unequal base. Rare, planted as ornamental also grows wild.

Uses: Fresh leaves are pounded and the juice obtained is applied for removing maggot from wounds of cattle.

Specimen examined: Salam, 522, 15/5/2009, Ukhrul.

Entada pursaetha DC. (Mimosaceae)

Vern. Name: ***Saotheila***

It is a large climber having greyish brown or blackish bark. Occasional, grows wild.

Uses: Bark decoction about 60ml is given 3-4 times a day for 5 days as cure for dysentery in cattle. Immature fruits are crushed and the juice obtained is given thrice daily for 5-6 days in dog fever.

Specimen examined: Salam, 579, 16/5/2009, Lambui.

Euphorbia antiquorum L. (Euphorbiaceae)

Vern. Name: ***Tengnou***

It is a large and much branched, succulent, xerophytic shrub with spines. Common, planted as ornamental.

Uses: Latex is used in killing maggots of wounds in cattle and buffalo.

Specimen examined: Salam, 585, 6/1/2009, Hundung.

Ficus cunea Steud. (Moraceae)

Vern. Name: ***Heirit***

It is a middle sized tree. Common, grows wild.

Uses: Latex is applied on the wound with the help of cotton twice a day to remove the maggot from the wound of cattle.

Specimen examined: Salam, 594, 15/10/2009, Shiroy chingkha.

Hibiscus subdariffa L. (Malvaceae)

Vern. Name: ***Silotsougree***

It is an annual erect glabrous undershrub. Cultivated in the kitchen garden.

Uses: A handful of fresh leaves are boiled in 1litre of water for 10 minutes. The decoction is drenched twice daily for 3-4 days to cattle or any domestic animalas cure for dysentery.

Specimen examined: Salam, 553, 10/7/2009, Litan.

Psidium guajava L. (Myrtaceae)

Vern. Name: ***Pungdonrong***

It is a small branched tree. Common,planted in the kitchen garden.

Uses: Fresh leaves of about 500 gms are boiled in 200ml of water for 10 minutes. The decoction is drenched twice daily for 4-5 days to cattle as cure for dysentery.

Specimen examined: Salam, 554, 15/10/2009, Ukhrul.

Pasania spicata Oerst.(Fagaceae)

Vern. Name: ***Shilimgthing***

It is a small size tree. Common, grows wild.

Uses: Bark decoction is applied to cure blisters and leg sores in cattle.

Specimen examined: Salam, 1834, 18/8/2011, Lambui.

Melia azedarach L. (Meliaceae)

Vern. Name: ***Seizrak***

It is a deciduous middle sized tree. Occasional, grows wild or planted in the home garden.

Uses: Leaves are used in treatment of skin diseases, to kill worms of domesticated animals.

Specimen examined: Salam, 1852, 1/11/2011, Sikibung.

Mentha spicata L. (Lamiaceae)

Vern. Name: ***Suiruihan***

It is a perennial shrub having obscurely quadrangular branches. Common, cultivated in the kitchen garden.

Uses: Tender shoot are crushed and the juice obtained half glass is given thrice daily for 7 days as tonic in general weakness.

Specimen examined: Salam, 547, 10/7/2009, Litan.

Musa paradisiaca L.(Musaceae)

Vern. Name: ***Mothei***

It is a stout and erect herb. Cultivated in the homestead compound.

Uses: A glassful of crushed extract of the fleshy petiole is given thrice daily in cattle constipation.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Paederia foetida L. (Rubiaceae)

Vern. Name: ***Painamra***

It is a glabrous or puberulous twinning herb. Common, grows wild.

Uses: Fresh leaves are pounded into paste and applied on dislocated joint of cattle.

Specimen examined: Salam, 1875, 5/8/2012, Khangkhui khullen.

Prunus armeniaca L. (Rosaceae)

Vern. Name: ***Malhei***

It is a middle sized tree. Occasional, planted in the home garden.

Uses: Leaves are crushed into paste and applied as cure for maggot infested wounds.

Specimen examined: Salam, 1900, 15/2/2011, Ukhrul.

Prunus persica (L.) Batsch (Rosaceae)

Vern. Name: ***Mayangthei***

It is a small and middle sized deciduous tree. Common, planted in the kitchen garden.

Uses: Fresh fruits are pounded and the juice obtained is administered orally to calf for the treatment of dysentery. Leaves are crushed into paste and applied as cure for maggot infested wounds.

Specimen examined: Salam, 927, 16/4/2010, Ukhrul.

Psidium guajava L. (Myrtaceae)

Vern. Name: ***Pungdonrong***

It is a small branched tree. Common,planted in the kitchen garden.

Uses: Fresh leaves of about 500gms are boiled in 200ml of water for 10 minutes. The decoction is drenched twice daily for 4-5 days to cattle as cure for dysentery.

Specimen examined: Salam, 554, 15/10/2009, Ukhrul.

Ranunculus scleratus L. (Ranunculaceae)

Vern. Name: ***Kakyel khujil***

It is an annual herb having hollow stem and branches. Common, grows wildin moist places.

Uses: *Leaves are crushed and the juice obtained is dropped in ear in cattle unconsciousness.

Specimen examined: Salam, 564, 10/7/2009, Litan.

Rhus semialata Murr. (Anacardiaceae)

Vern. Name: ***Khamkhuithei***

It is a deciduous shrub or small tree. Common, cultivated as well as wild.

Uses: Fruits are soaked in water and the liquid is given 1/2 litre twice a day to cure diarrhoea and dysentery.

Specimen examined: Salam, 3559, 18/8/2012, Litan.

Ricinus communi L. (Euphorbiaceae)

Vern. Name: ***Kege***

It is a large annual or perennial shrub. Common, planted as well as grows wild near roadsides.

Uses: Leaves are boiled and 15ml of decoction is given twice daily for 4-5 days in treating constipation in cattle.

Specimen examined: Salam, 3536, 10/11/2012, New cannon.

Rubus ellipticus Sm. (Rosaceae)

Vern. Name: ***Karathei***

It is a large straggling, robust shrubs. Common, grows wild.

Uses: Tender shoots are pounded into paste and applied in eradicating worms and healing wounded areas.

Specimen examined: Salam, 3540, 5/4/2012, Phadang.

Tinospora cordifolia (Willd.) Hook. f. &Thomson (Menispermaceae)

Vern. Name: ***Ningthoukhongli***

It is a large succulent deciduous climber. Occasional, grows wild.

Uses: About 500gof bark are boiled in 200ml of water for 10 minutes. 60ml of the decoction is given twice daily for 4-5 days to cattle as cure for dysentery.

Specimen examined: Salam, 3577, 26/11/2012, Sikibung.

Vitex negundo L. (Verbenaceae)

Vern. Name: ***Urikshibi***

It is a shrub or small tree. Occasional, grows wild.

Uses: Boiled extract of the leaf is applied on eczema, scabies and other skin infections in domestic animals.

Specimen examined: Salam, 3591, 18/8/2012, Litan.

Xanthium strumarium L. (Asteraceae)

Vern. Name: ***Phanang kahakpasi***

It is a coarse annual herb. Common, grows wild in waste places.

Uses: A handful of fresh leaves are pounded and the juice obtained is collected and half litre is given twice daily for 7 days in loose motion in cattle.

Specimen examined: Salam, 539, 15/10/2009, Shiroy chingkha.

Zanthoxylum acanthopodium DC. (Rutaceae)

Vern. Name: ***Mangnangthei***

It is a straggling thorny aromatic shrub. Common, grows wild as well as cultivated in the kitchen garden.

Uses: The fresh leaf is smashed and applied on skin infections in domestic animals.

Specimen examined: Salam, 600, 10/7/ 2009,Litan.

4.5: PLANTS USED AS FODDER

Albizia lebbeck (L.) Benth. (Mimosaceae)

Vern. Name: ***Uil***

It is a moderate sized tree having branches with linear lenticels. Common, grows wild.

Uses: Leaves are used asfodders of cattle.

Specimen examined: Salam, 932, 12/9/2010, Sikibung.

Amaranthus spinosus L. (Amaranthaceae)

Vern. Name: ***Somchan***

It is an erect glabrous much branched weed, armed with sharp spines. Common, grows in waste places.

Uses: Aerial portion of the plants are used as fodders for cattle and fowls.

Specimen examined: Salam, 950, 17/8/2010, Litan.

Arundo donax L. (Poaceae)

Vern. Name**: *Kahui***

A tall and stout perennial grass with erect culm and a creeping rhizome. Common, planted as hedge plant.

Uses: Leaves are used as fodders for cattle and buffalo.

Specimen examined: Salam, 957, 17/12/2010, Tungou.

Alocasia indica Schott. (Areceae)

Vern. Name: ***Pankhot***

It is a robust herb having a considerable aerial stem with aerial adventitious roots.

Uses: Entire aerial parts of the plant are cooked along with rice and fed to pig for healthy growth.

Specimen examined: Salam, 922, 12/9/2010, Sikibung.

Alternanthera philoxeroides Griseb. (Amaranthaceae)

Vern. Name: ***Kabo-napi***

A much-branched prostrate herb. Common, grows as weed in moist places.

Uses: Whole plant mostly browsed by cattle and also fed to fowls.

Specimen examined: Salam, 948, 17/7/2010, Shakok.

Benincasa hispida Cogn. (Cucurbitaceae)

Vern. Name: ***Katsenghei***

A large trailing climber having 2-fid tendrils. Common, cultivated as a vegetable crop.

Uses: Fruit is cooked with rice and mixed with husk powder and fed to pigs.

Specimen examined: Salam, 916, 27/10/2010, Bungpa khunou.

Bidens pilosa L. (Asteraceae)

Vern. Name: ***Phanang***

It is an erect, glabrous, pilose or pubescent herb. Common, grows wild.

Uses: Green leaves and tender twigs are fed to cattle and buffaloes.

Specimen examined: Salam, 973, 30/10/2010, Sampui.

Colocasia gigantea Blume (Araceae)

Vern. Name**: *Kharinghor***

It is a herb with rootstock. Very common, cultivated.

Uses: Fresh leaves are fed to pig.

Specimen examined: Salam, 573, 17/5/2009, Nungbi khullen.

Crassocephalum crepidiodes S. Moore (Asteraceae)

Vern. Name: ***Revival***

It is a large succulent herb. Common, grows wild.

Uses: Young shoots are fed to cattle, buffalo and fowls.

Specimen examined: Salam, 1864, 1/12/2011, Grihang.

Debregeasia longifolia (Burm.f.) Wedd. (Urticaceae)

Vern. Name: ***Kahorathei***

It is a small tree whose branchlets are slender and pilose. Rare, grows wild nearriver banks, foothills.

Uses: Leaves are cooked with rice and fed to pig.

Specimen examined: Salam, 1823, 12/9/2011, Nampisha.

Eragrostis nigra Nees (Poaceae)

Vern. Name: ***Kaho***

It is a perennial plant. Common, grows wild in hilly tracts.

Uses: It is used as a good fodder for cattle.

Specimen examined: Salam, 314, 28/5/2012, Tuinem.

Fagopyrum esculentum Moench. (Polygonaceae)

Vern. Name: ***Harenhan***

It is an erect glabrous annual herb. Occasional, grows on roadsides.

Uses: Leaves are considered as good fodder for pig.

Specimen examined: Salam, 592, 10/7/2009, Litan.

Girardinia leschenaultiana Decne (Urticaceae)

Vern. Name: ***Anzar***

It is tall stout undershrubs with soft stem, bearing stinging bristles.

Uses: *Leaves are cooked along with feeding material and fed to pig.

Specimen examined: Salam, 317, 26/11/2012, Bungpa khullen.

Manihot esculenta Crantz (Euphorbiaceae)

Vern. Name: ***Thingpai***

It is a shrub. Common, cultivated as an important crop plant in the Ukhrul district.

Uses: Leaves are considered as good fodder for pig and cattle.

Specimen examined: Salam, 542, 17/10/2009, Lamlang.

Musa paradisiaca L. (Musaceae)

Vern. Name: ***Nana***

It is a stout and erect herb.Common, cultivated in the homestead compound.

Uses: Leaves are used as fodder for cattle.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Oryza sativa L. (Poaceae)

Vern. Name: ***Maa***

It is an annual herb. Cultivated as staple food.

Uses: Paddy straw is considered as the best fodder for cattle, buffalo and mithun.

Specimen examined: Salam, 3520, 8/7/2012, Ukhrul.

Pilea trinervia Wight (Urticaceae)

Vern. Name: ***Shatkharhan***

It is a robust succulent herb. Occasional, grows wild.

Uses: Young twigs and leaves are boiled and fed to pig.

Specimen examined: Salam, 1888, 3/3/2011, Hundung.

Phaseolus angularis Willd. (Fabaceae)

Vern. Name: ***Theirathei***

It is a perennial climber. Common, cultivated in the kitchen garden.

Uses: Young twigs are used as fodder for cattle and buffalo.

Specimen examined: Salam, 3522, 8/10/2012, Nambasi khunou.

*Q**uercus griffithii*** Hook.f. & Thoms**.** (Fagaceae)

Vern. Name: ***Thingchangthing***

It is a large deciduous tree. Common, grows wild.

Uses: Fruits are fed to pigs.

Specimen examined: Salam, 3532, 5/8/2012, Phadang.

Schima wallichii Choisy (Theaceae)

Vern. Name: ***Mashuithei***

It is a large tree having lenticellate branches.Common, grows wild.

Uses: Branches and young twigs are lopped for fodder of cattle.

Specimen examined: Salam, 535, 15/5/2009, Ukhrul.

Sechium edule Sw. (Cucurbitaceae)

Vern. Name: ***Squash***

It is an extensive climber with perennial rootstock.Common, cultivated in the kitchen garden.

Uses: Green leaves and tender twigs are cooked with rice and are fed to pig.

Specimen examined: Salam, 3554, 16/2/2011,Ukhrul.

Spilanthes acmella Murray (Asteraceae)

Vern. Name: ***Ansa han***

It is an annual herb. Common, grows wild.

Uses: Whole plant is used as fodder for cattle.

Specimen examined: Salam, 1872,18/8/2011, Lambui.

Themeda villosa Poir. (Poaceae)

Vern. Name: ***Kahinwon***

It is a large reed-like grass. Common, grows wild.

Uses: Whole plant is commonly used as fodder for grazing animals.

Specimen examined: Salam, 337, 26/11/2012, Grihang.

Urtica parviflora Roxb. (Urticaceae)

Vern. Name: ***Lenghui***

A slender herb with stiff stinging hairs. Common in dense and shaded region of the forest.

Uses: Green leaves are cooked with rice and are fed to pig for healthy growth.

Specimen examined: Salam, 340, 22/9/2012, Hundung.

4.6: PLANTS USED AS DYEING PURPOSES

In Manipur, both valley and hill dwellers practised dyeing by using varieties of plant leaves and barks right from ancient times, before chemical dyes were introduced in the state . In Manipur, it is believed that after the World War II, the tribal communities of Manipur practised the dyeing of textiles for their own individual use. In 1905, the chemical dye was on sale in the Imphal market and fast chemical dye was found to be known since 1930 AD. Even today, the *Tangkhul* coming to the Imphal market to buy dye for textiles is highlighted in dramatized ritual performance in the festival of *Kanglei Umang Lai Haraoba* (Celebration of sylvan deities) of the Meitei (Mutua,1997). Since time immemorial, *Tangkhul* women folk used natural colorants that were obtained from plant parts viz., roots, leaves, barks, flowers and fruits, found in their locality to make vegetable dye and they have a sound knowledge of dyeing in different hues and shades to their clothes, hands, hairs, bamboo baskets, flower pots, fishing nets and food items. Maximum plants have been used to dye cotton compared with silk and woolen yarns by the *Tangkhul* community. Different formulations either as fresh extracts or paste form were prepared by the use of traditional technology to obtain various colour palettes. The process of obtaining the dyes involves chopping, pounding, soaking, squeezing, boiling and evaporating in wide mouthed earthenware. Additional items like slake lime, brine water and alum are used to make a dye fast and for longitivity of the natural dyes in the clothes. Weaving is one of the most important occupations which come next to agriculture in *Tangkhul* society and therefore, the season is known as *Zaiham Kachang*, the month of the dyeing yarn**.** Dyeing process varies from village to village, traditionally each dyer had her own recipes and details are closely guarded secret. The indigenous knowledge of using the dyes extracted from plants has been carried out as their tradition from generation to generation without any transformation. The dye yielding plant species documented

during field survey in the Ukhrul district of Manipur, are enumerated below in alphabetical order with the names of the family, in parentheses is followed by plant status, vernacular names, indigenous mode of preparation and its uses.

Achyranthes aspera L. (Amaranthaceae)

Vern. Name: ***Manarina***

A perennial stiff erect herb with pubescent branches, attaining up to 1metre. Common grows wild on roadside and other wasteland.

Uses: The dried plant is pounded into powder and soaked in water for 2-3 days and the liquid is used as adhesive for dark colors and making the color brighter.

Specimen examined: Salam, 935, 17/12/2010, Tungou.

Alnus nepalensis D.Don. (Betulaceae)

Vern. Name:***Ngavathing***

It is a large deciduous tree. Common, grows wild.

Uses: *The bark is cut into pieces and pounded thoroughly; it is soaked in water for 24 hours. The thread is dipped in the filtrate and kept for some hours. The black dye obtained is used for dyeing bamboo splits, decorative items, and cotton fabrics. Addition of alkaloid mordant gives red dye.

Specimen examined: Salam, 945, 16/11/ 2010, Ukhrul.

Basella alba L. (Basellaceae)

Vern. Name: ***Urok sumbal***

It is a glabrous twining vine. Common, grows in waste places most commonly over hedges.

Uses: The ripe fruits are crushed and the extract obtained is mixed with water and violet dye obtained is used for dyeing fabrics and painting, also in tattooing.

Specimen examined: Salam, 958,17/8/2010, Litan.

Bixa orellana L. (Bixaceae)

Vern. Name: ***Ureirom***

It is a small evergreen tree having smooth brown bark. Rare, planted as well as grows wild.

Uses: The arils of the seed are soaked in water and pale red dye obtained is used for dyeing cotton fabrics and for painting. This is the easiest and common dye used by all the communities of Manipur.

Specimen examined: Salam,971, 17/8/2010, Litan **(Plate-23-A).**

Carthamus tinctorius L. (Asteraceae)

Vern. Name: ***Kusumlei***

It is an annual shrub having a glabrous branching stem. Occasional, planted as ornamental.

Uses: The fresh petals are collected and pounded; it is soaked in water for 3to 4 hours until it turns yellow colour.The filtrate is again boiled for 5 minutes by adding common salt. The golden dye obtained is used for dyeing cotton and silk fabrics and also for painting. Addition of alkalies obtained from *Achyranthes aspera* produced pink dye.

Specimen examined: Salam, 987, 17/8/2010, Litan**.**

Clerodendrum colebrookianum Walp. (Verbenaceae)

Vern. Name: ***Nareihan***

It is a large shrub. Common, grows in the wasteland and foothill.

Uses: The fresh leaves are crushed and boiled in water until it turns light green colour.The thread or cloth is soaked overnight and slightly squeezed and spread in shade. It is repeated 4 to 5 times until the desired colour is obtained. The green dye obtained is used in dyeing cloths or yarn threads, also in painting.

Specimen examined: Salam, 548, 15/5/2009, Ukhrul.

Curcuma longa L. (Zingiberaceae)

Vern. Name**:** ***Yaingang***

It is a rhizomatous perennial plant having irregular shaped tubers. Very common, cultivated.

Uses: Rhizome is grinded into powdered and is mixed with water. It is then filtered and is ready to use. This is the easiest dye which is readily absorbed by fibres. Addition of a pinch of lime juice produces an orange hue and addition of acidic mordant from *Tamarind indica* produced bright yellow.

Specimen examined: Salam, 902, 28/10/2010, Phange.

Cuscuta reflexa Roxb. (Cuscutaceae)

Vern. Name: ***Uri napu***

It is a parasitic twinner having a creamy- yellow, somewhat thick and fleshy stem. Common, grows wild over fences.

Uses: The whole plant is crushed in a vessel containing water until it turns yellow colour. The thread or cloth is soaked overnight and slightly squeezed and spread in shade. It is repeated 4 to 5 times until the desired colour is obtained.

Specimen examined: Salam, 1816, 1/11/2011, Sikibung.

Garcinia pedunculata Roxb. (Clusiaceae)

Vern. Name: ***Changneira***

It is a large tall tree .Grows wild as well as planted.

Uses: Fruits are thinly sliced and soaked in water for 3hours, and the filtrate liquid is used as adhesive to different dyes.

Specimen examined: Salam, 919, 17/12/2010, Tungou.

Isodon hispidus Benth. (Lamiaceae)

Vern. Name: ***Machurong***

It is an herb. Occasional, grows wild.

Uses: *A reddish brown dye is obtained by crushing the leaves and is used in dyeingwooden plates, decorative items, bamboo ornaments etc.

Specimen examined: Salam, 319, 26/11/2012, Bungpa khullen **(Plate-23-C).**

Juglans regia L. (Juglandaceae)

Vern. Name: ***Shirangthei***

It is a large deciduous tree. Rare, grows wild.

Uses: Stem bark is cut into pieces and is soaked in water for 2 or 3 days. The cotton yarn is dyed by dipping into it. For firmness of colour, the thread is kept buried in the mud for 6 to 7 days. Then, the thread is taken out and is cleansed off the mud .The black dye obtained is used for dyeing cloths or yarns.

Specimen examined: Salam, 926, 30/10/2010, Sampui.

Mallotus philippensis (Lam.) Mull. (Euphorbiaceae)

Vern. Name: ***Ureirom laba***

It is a small evergreen tree. Common, grows wild.

Uses: Mature fruits are sun dried and soaked in water for hours. A crimson red dye is obtained and is used for dyeing silk fabrics.

Specimen examined: Salam, 1846, 18/8/2011, Lambui **(Plate-23-B).**

Mahonia manipurensis Takeda. (Berberidaceae)

Vern. Name: ***Yaiganmachurong***

It is a shrub with compound leaves. Occasional, grows wild in Sirohee

Uses: The stem and root is pounded up and is boiled in water. Acids and alkalis are added for concentrating the dye and are used for dyeing silk fabrics. It is also used to dye the bamboo split for basketry.

Specimen examined: Salam, 1845, 6/5/2011, Itham **(Plate-23-D).**

Melastoma malabathricum L. (Melastomaceae)

Vern. Name: ***Yachubi***

It is an erect shrub. Common, grows wild on roadsides.

Uses: Fruits are crushed and the extract obtained is popularly used by all the communities of Manipur for colouring the teeth.

Specimen examined: Salam, 1851, 1/12/2011, Grihang.

Myrica esculenta Ham. (Myricaceae)

Vern. Name: ***Mahuithei***

It is a small evergreen tree. Occasional, cultivated as well as grows wild.

Uses: The bark is chopped finely and soaked in water for overnight. The yarn is soaked in the liquid for three days to fix the dye. A red dye is obtained.

Specimen examined: Salam, 1867, 12/9/2011, Nampisha.

Parkia timoriana Merr. (Mimosaceae)

Vern. Name: ***Yongchak***

It is a middle sized unarmed tree. Common, cultivated as well as grows wild.

Uses: The stem is chopped finely and soaked in water overnight .The filtrate is used for dyeing fishing net, fishing materials (*Khairengkhor, Khaitem*), bamboo split, flower pots , decorative items, also fishing materials etc. A reddish brown dye is obtained from the stem.

Specimen examined: Salam, 527, 15/12/2009, Ukhrul.

Pasania pachyphylla Schott. (Fagaceae)

Vern. Name: ***Kuhi***

It is a large evergreen tree. Common, grows wild.

Uses: The stem bark is pounded and it is boiled with water for 20 mins until it turns reddish brown. The liquid is filtered and the cloths or yarns are soaked overnight. The reddish brown dye is produced.

Specimen examined: Salam, 1876, 18/8/2011, Lambui **(Plate-23-E).**

Pasania spicata Oerst. (Fagaceae)

Vern. Name: ***Shilimgthing***

It is a small tree. Common, grows wild.

Uses: The stem bark is pounded and boiled with water until it turns brown colour. The burnt ash of *Musa* sp. is added for spreading the dye making process. The light brown dye obtained is used for dyeing cotton cloths, pottery, and decorative items.Crushed extract bark of *Pasania spicata* and *Pasania pachyphylla* is put together in a vessel containing water and is heated until the contents come to the boil. Dipping in this liquid produced navy blue dye.

Specimen examined: Salam, 1834, 18/8/2011, Lambui.

Phyllanthus emblica L. (Euphorbiaceae)

Vern. Name: ***Shakshathei***

It is a middle sized tree having crooked trunk. Common, planted in the home garden as well as grows wild.

Uses: The bark or fruits are pounded and is soaked in water for 48 hours. The dye is concentrated by adding common salt, a reddish black dye is obtained and is used for dyeing decorative items, basketry crafts, etc.

Specimen examined: Salam, 514, 17/10/2009, Lamlang.

Punica granatum L. (Punicaceae)

Vern. Name: ***Kaphoi***

It is a big shrub or small tree. Common, cultivated in the kitchen garden.

Uses: Outer cover of the fruits are removed and soaked in water for 24 hours. The black dye obtained is used for dyeing fishing nets, basketry crafts, decorative items etc.

Specimen examined: Salam, 1894, 18/8/2011, Lambui.

*Q**uercus serrata*** Thunb. (Fagaceae)

Vern. Name: ***Thingchangthing***

It is a middle- sized tree. Common, grows wild.

Uses: Stem bark is cut into pieces and soaked in a pitcher containing required amount of water for 2 or 3 days. The cotton yarn is dyed by dipping into it. To get fast colour, mud is applied to the dyed thread and kept in the sun. After the thread is well dried, it is washed thoroughly in the fresh river water. The black dye obtained is used for dyeing cloths or yarns.

Specimen examined: Salam, 3532, 5/8/2012, Phadang.

Rubia cordifolia L. (Rubiaceae)

Vern. Name: ***Mayong***

It is a climber, stem quadrangular, scarbrid. Rare, grows wild.

Uses: The root is properly washed and pounded into pulp. The pulp is with required amount of water and boiled in a big pot with the yarn for hours.The yarn is left to cool and dry.The red dye obtained is used for dyeing fabrics, bamboo split, decorative items, headgear, etc. This dye is commonly used by this community.

Specimen examined: Salam, 3538, 26/3/2012, Sikibung.

Solanum nigrum L. (Solanaceae)

Vern. Name: ***Hantehan***

It is an annual herbaceous herb. Common, grows in the wasteland.

Uses: Matured fruits are collected and slightly crushed and soaked in water for three hours, the material is frequently stirred. To make fast colour, the alkalies obtained from *Achyranthes aspera* is added. The deep chocolate dye obtained is used for painting and tattooing.

Specimen examined: Salam, 533, 17/5/2009, Nungbi khunou

Strobilanthes cusia Kuntze (Acanthaceae)

Vern. Name: ***Kim***

It is a glabrous shrub. Rare, cultivated.

Uses: A matured leaves are collected, pounded and placed in the earthenware jar, steeped in water until they are disintegrated through fermentation. After adding small amount of alkaloid prepared from *Musa paradisiaca* to the fermented liquid,it is stirred to mix thoroughly and is concentrated by boiling. When the solution is ready, the yarn or clothe is completely submerged in the dye overnight. Black dye is

obtained. Addition of *Curcuma longa* powderto the filtrate produces an olive green dye.

Specimen examined: Salam, 1898, 15/2/2011, Ukhrul **(Plate-23-F).**

Tectona grandis L. (Verbenaceae)

Vern. Name: ***Teak***

It is a large deciduous tree. Cultivated.

Uses: The fresh stem bark is slightly ground and boiled by adding the required amount of water for 45 minutes. Addition of acidic mordant produced deep brownish dye and it is used for painting, for colouring bamboo splits.

Specimen examined: Salam, 532, 3/3/2009, Ukhrul.

Terminalia citrina Roxb. (Combretaceae)

Vern. Name: ***Manahi***

It is a large deciduous tree. Common, grows wild.

Uses: The bark is cut into pieces and boiled in water for hours. A blackish dye is obtained by dipping the threads into the liquid. The dye is used for dyeing cotton, silk and wool fabrics as well as used in painting.

Specimen examined: Salam, 346, 16/11 /2012, Sikibung.

4.7: PLANTS USED AS FIREWOOD

Alnus nepalensis D. Don. (Betulaceae)

Vern. Name: ***Ngavaithing***

It is a large deciduous tree. Common, grows wild.

Uses: Plant is used commonly as firewood.

Specimen examined: Salam, 945, 16/11/2010, Ukhrul.

Castanopsis tribuloides A. DC. (Fagaceae)

Vern. Name:***Thingzithing***

It is a middle-sized large evergreen tree. Grows wild.

Uses: Wood is used as firewood.

Specimen examined: Salam, 990, 29/10/2010, Khoikai.

Engelhardtia spicata Blume (Juglandaceae)

Vern. Name: ***Limphop***

It is a middle sized deciduous tree. Occasional, grows wild.

Uses: Wood is used extensively as firewood.

Specimen examined: Salam, 3511, 18/2/2012, Litan.

Flacourtia jangomas Raeusch. (Flacourtiaceae)

Vern. Name: ***Heitroi***

It is a small deciduous tree. Occasional, grows wild.

Uses: Wood is used as firewood and for charcoal production.

Specimen examined: Salam, 908, 17/8/2010, Litan.

Melia azedarach L. (Meliaceae)

Vern. Name: ***Seizrak***

It is a middle –sized deciduous tree with a large spreading crown.

Uses: Wood is used as firewood.

Specimen examined: Salam, 1852, 1/11/2011, Sikibung.

Pasania pachyphylla Schott. (Fagaceae)

Vern. Name:***Kuhi***

It is a large evergreen tree. Common, grows wild.

Uses: Wood is used as firewood.

Specimen examined: Salam, 1876, 18/8/2011, Lambui.

Pasania spicata Qerst. (Fagaceae)

Vern. Name:***Shilimgthing***

It is a small tree. Common, grows wild.

Uses: Wood of this plant is considered one of the best firewood and the charcoal is in high demand. Charcoal sold @ Rs 350-450/-per 1 full gunny bag.

Specimen examined: Salam, 1834, 18/8/2011, Lambui.

Schima wallichii Choisy (Theaceae)

Vern. Name: ***Mashuithei***

It is a large tree having lenticellate branches. Common, grows wild.

Uses: Wood is used as firewood.

Specimen examined: Salam, 535, 15/5/2009, Ukhrul.

Toona ciliata M. Roem. (Meliaceae)

Vern. Name: ***Ipang***

It is a large deciduous tree. Common, grows wild.

Uses: Wood is used as firewood.

Specimen examined: Salam, 3580, 26/11/2012, Sikibung.

*Q**uercus serrata*** Thunb. (Fagaceae)

Vern. Name: ***Thingchangthing***

It is a large deciduous tree. Common, grows wild.

Uses: Wood is used as low class firewood.

Specimen examined: Salam, 3532, 5/8/2012, Phadang.

Rhus semialata Murr. (Anacardiaceae)

Vern. Name: ***Khamkhuithei***

It is a deciduous shrub or small tree. Common, planted as well as grows wild.

Uses: Wood is used as firewood.

Specimen examined: Salam, 3559, 18/8/2012, Litan.

Notes: Fuelwood is generally collected in a *Bangrah,*a traditional bamboo basket carried on the back.

4.8 : PLANTS USED AS FIBRE

Boehmeria macrophylla D. Don. (Urticaceae)

Vern. Name: ***Santhak manbi***

It is a deciduous shrub. Occasional, grows wild.

Uses: Bark fibre is used for making fishing net.

Specimen examined: Salam, 346, 29/ 9/ 2012, Hundung.

Bombax ceiba L. (Bombacaceae)

Vern. Name: ***Tera***

It is a lofty deciduous tree, buttressed at the base.

Uses: Fibre used for stuffing pillows, mattresses, cushion etc.

Specimen examined: Salam, 972, 17/8/2010, Litan.

Corchorus capsularis L. (Tiliaceae)

Vern. Name: ***Ruimon***

It is a tall erect annual shrub. Rare, planted as well as wild.

Uses: Fibre from stem bark is used for making gunny bags, mats and ropes.

Specimen examined: Salam, 1804, 16/6/2011, Lauphang.

Ficus cunea Steud. (Moraceae)

Vern. Name: ***Heirit***

It is a small or middle sized tree. Occasional, grows wild.

Uses: Fibre from stem bark is used for making ropes.

Specimen examined: Salam, 594, 29/10/2009, Chassad.

Gossypium arboreum L. (Malvaceae)

Vern. Name: ***Vat***

It is an erect shrub.

Uses: Soft fibre is used for stuffing pillows, mattresses, cushion etc. It is a main source of threads for weaving cloths.

Specimen examined: Salam, 925, 16/7/2010, Leiting.

Grewia serrulata DC. (Tiliaceae)

Vern. Name: ***Harungthing***

It is a middle sized shrub.Common, grows wild in the foothill.

Uses: Fibre from stem bark is widely used for weaving *Tangkhul* shawl *ha kachon.*

Specimen examined: Salam, 345, 16/11/2011, Sikibung.

Hibiscus abelmoschus L. (Malvaceae)

Vern. Name: ***Tawonrong***

It is a tall annual shrub. Common, grows wild on roadsides.

Uses: Fibre obtained from stem bark is used for making rope to tie the plant materials.

Specimen examined: Salam, 928, 12/9/2010, Sikibung.

Hibiscus Cannabinus L. (Malvaceae)

Vern. Name: ***Sougree***

It is a shrub having prickly stem. Common, cultivated in the kitchen garden.

Uses: Fibre obtained from stem bark is used for making rope.

Specimen examined: Salam, 929, 17/8/2010, Litan.

Musa paradisiaca L. (Musaceae)

Vern. Name: ***Nana***

It is a stout and erect herb. Common, cultivated in the homestead compound.

Uses: Fibre obtained from leaf sheath is used for making fabrics.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Morus nigra L. (Moraceae)

Vern. Name: ***Kaharathei***

It is a small deciduous tree. Occasional, cultivated for feeding silk worm.

Uses: Fibre obtained from stem bark is used for making fabrics.

Specimen examined: Salam, 1863, 6/2 /2012, Kasom Khunou.

Pandanus furcatus Roxb. (Pandanaceae)

Vern. Name: ***Ketuki***

It is a densely branched shrub. Occasional, grows wild.

Uses: The fibres from leaf sheath are used in various ways.

Specimen examined: Salam, 1873, 1/10/2011, Sikibung.

Phoenix sylvestris (L.) Roxb. (Arecaceae)

Vern. Name: ***Khaneithei***

It is a dwarf palm. Grows wild on open hills.

Uses: Bark fibre is used for making coir.

Specimen examined: Salam, 1883, 1/12/2011, Grihang.

Tetrastigma obtectum Planch. (Vitaceae)

Vern. Name: ***Samkangrathei***

It is a rare evergreen climber. Grows wild.

Uses: Stem bark is commonly used as a rope to tied fodder plants and fuel woods.

Specimen examined: Salam, 3573, 5/8/2012, Phadang.

Urena lobata L. (Malvaceae)

Vern. Name: ***Phanang***

It is undershrubs. Common, grows wild.

Uses: ******Stem fibres are used for making ropes.

Specimen examined: Salam, 3583, 6/4/2012, Tolloi.

Urtica parviflora Roxb. (Urticaceae)

Vern. Name: ***Lenghui***

A slender herb with stiff stinging hairs. Common in dense and less lighted region of the forest.

Uses: Fibre extracted from the stem bark is still used for fabrics.

Specimen examined: Salam, 340, 22/9/2012, Hundung.

4.9: PLANTS ASSOCIATED WITH FISH POISONING AND BIRD SNARING

4.9.1:FISH POISION PLANTS

Fishing is an alternative occupation of the *Tangkhul* tribe in Ukhrul district, Manipur. Since time immemorial, *Tangkhul* tribe of the Ukhrul District use indigenous knowledge about plants for catching fish easily. They are very fond of fishing and often spend the whole day for this purpose; they use their indigenous traditional knowledge to catch the fish by applying many plants/plant parts extract. They have practiced this method only in winter season when water level of streams and rivers is low, they use the plant extracts only in slow flowing streams, ponds, lakes and even rivers. The plants or their parts are crushed directly in or outside the water body and thrown or sprayed in water. The fish poison makes the fish lose consciousness and come to the surface of water from where they are easily captured by using different fishing gears. It is also important to note that the effect of fish poison does not adversely change the taste and quality of fish and affect human health. The fish poisoning plant species used by the *Tangkhul* tribe was collected and documented during field survey in the Ukhrul district of Manipur. The plant species are enumerated below in alphabetical order with the names of the family, in parenthesis followed by vernacular names, plant status, indigenous mode of preparation and its uses.

Acacia pinnata Dalzell & A.Gibson (Mimosaceae)

Vern. Name: ***Reting***

It is a glabrescent, stout climbing and prickly shrub. Common, grows wild.

Uses: Roots and barks are pounded up on flat stone and the extract obtained is allowed to flow into the water, and the fishes are easily

caught with help of fishing gear (*khaitem*).

Specimen examined: Salam, 934, 16/4/2010, Ukhrul **(Plate-24-E).**

Albizia lebbeck (L.) Benth. (Mimosaceae)

Vern. Name: ***Uil***

It is a large deciduous tree with a spreading crown. Common grows wild in the hills.

Uses: Bark is pounded into powder and mixed with water and sprayed over the surface of the water bodies. After sometime, fishes start gasping and are easily caught using different fishing gears.

Specimen examined: Salam, 932, 12/9/2010, Sikibung.

Croton tigilium L. (Euphorbiaceae)

Vern. Name: ***Yai***

It is a small evergreen tree. Rare, cultivated also grows wild.

Uses: Leaves and tender shoots are ground and the paste obtained is sprayed over the surface of the water bodies. After sometime, the fishes c come to the surface under the influence of the plant extract and start gasping. These fishes are easily caught by spears.

Specimen examined: Salam, 1808, 1/12/2011, Grihang.

Datura stromonium L. (Solanaceae)

Vern. Name: ***Sagol hidak***

It is a small glabrous under shrubs whose leaves are ovate oblong to triangular with unequal base. Rare, planted as ornamental also grows wild.

Uses: The leaves and flowers are crushed in water on stone and the extract obtained is mixed in water, small fishes are easily caught by hands.

Specimen examined: Salam, 522, 15/5/2009, Ukhrul.

Dillenia indica L. (Dilleniaceae)

Vern. Name: ***Heigri***

It is an evergreen tree that are often fluted and buttressed at the base with a large oval crown. Rare, cultivated or wild.

Uses: The leaves and tender twigs arecrushed in water on stone and the pasteis mixed with waterand applied on the water body.

Specimen examined: Salam, 565, 10/7/ 2009, Litan **(Plate-24-A).**

Engelhardtia spicata Bl. (Juglandaceae)

Vern. Name: ***Limphop***

It is a large deciduous tree. Rare, grows wild.

Uses: The leaves and barks are ground together in traditional *Shimkhur*and the paste obtained is sprayed over the surface of water bodies. After sometime, fishes start gasping and are easily caught using different fishing gears.

Specimen examined: Salam, 3511, 18/8/2012, Litan. **(Plate-24-B).**

Eupatorium odoratum L. (Asteraceae)

Vern. Name: ***Sheleirung***

It is a pubescent and profusely branching straggling shrub. Very common growing on roadsides.

Uses: The leaves and tender twigs are grinded into paste and are mixed in water forfish poisoning.

Specimen examined: Salam, 543, 15/10/2009, Shiroy chingkha.

Juglans regia L. (Juglandaceae)

Vern. Name: ***Shirangthei***

It is a large deciduous tree. Rare, grows wild.

Uses: The leaves are crushed in water on stone and the paste is mixed in water. After sometime, fishes starts gasping and are easily caught by spears. It is frequently used in stream and rivers.

Specimen examined: Salam, 926, 30/10/2010, Sampui **(Plate-24-C).**

Millettia pachycarpa Benth. (Fabaceae)

Vern. Name: ***Kaho***

It is a large climber. Common, grows wild.

Uses: The stems are ground in traditional *Shimkhur* and the paste obtained is applied on zathe water body. After sometime, fishes are intoxicated and start gasping and are easily caught by spears. It is very effective poison.

Specimen examined: Salam, 1861, 1/12/2011, Grihang. **(Plate-24-D).**

Parkia timoriana Merr. (Mimosaceae)

Vern. Name: ***Yongchak***

It is a middle sized unarmed tree. Common, cultivated as well as grows wild.

Uses: Bark is pounded and thrown into the water in stagnant water. After sometime, fishes start gasping and are easily caught using different fishing gears.

Specimen examined: Salam, 527, 15/12/2009, Ukhrul.

Spilanthes acmella Murray (Asteraceae)

Vern. Name: ***Ansa han***

It is an annual herb. Common, grows wild.

Uses: Whole plant is crushed and the extract obtained is mixed in water, small fishes are easily caught by hands.

Specimen examined: Salam, 1872, 18/8/2011, Lambui.

Zanthoxylum acanthopodium DC. (Rutaceae)

Vern. Name: ***Mangnangthei***

It is a straggling thorny aromatic shrub. Common, grows wild.

Uses: Fruits are crushed and the extract obtained is sprayed over the surface of the water bodies, soon after the fish float over the surface of the water and they can be easily caught.

Specimen examined: Salam, 600, 10/7/2009, Litan.

4.9.2: BIRD SNARING PLANTS

Castanopsis hystrix A. DC. (Fagaceae)

Vern. Name: ***Kahaothing***

It is a large evergreen tree. Grows wild in the forest.

Uses: Fresh fruits are used for birds snaring by keeping it inside the traps made of bamboo and cane.

Specimen examined: Salam, 989, 29/10/2010, Khoikai.

Garcinia Xanthochymus Hook.f. (Clusiaceae)

Vern. Name: ***Heirangkhoi***

It is a middle-sized evergreen tree with spreading crown. Rare, cultivated in home garden.

Uses: Resins are collected through cuts on the bark and fried with a mustard oil. When it is condensed, it is used for snaring of birds.

Specimen examined: Salam, 3512, 8/10/2012, Nambasi khunou.

Grevillea robusta A. Cunn. (Proteaceae)

Vern. Name: ***Koubila***

It is a large handsome tree. Cultivated as well as grows wild.

Uses: Gum obtained from this plant is used for bird snaring.

Specimen examined: Salam, 302, 20/9/2012, Litan sareikhong.

Scurrula parasitica L. (Loranthaceae)

Vern. name: ***Nei***

It is a large bushy parasite with tomentose young parts. Grows wild in the forest.

Uses: Gum obtained from the fruit is smeared to bamboo stick and placed over the watering places; birds are easily snared when they perch on the stick. This is the most common method practiced by the *Tangkhul* tribe since time immemorial.w

Specimen examined: Salam, 3546, 8/7/2012, Ukhrul.

4.10:PLANTS USED AS HAIR CARE

Tangkhul community residing in the hilly region relies on plant resources to fulfill their multidimensional necessities. They are well acquainted with the surrounding plants and their potential role are employed for different purposes.Since time immemorial, *Tangkhul* womenstill use varieties of plant parts viz., leaves, fruits and seeds, for the treatment of hair ailments and hair care such as hair fall, hair growth, dandruff and hair washing. *Hashai* (*Boehmeria* sp) is the only plant species used most commonly by the *Tangkhul* women from the time immemorial untill now, to keep their hair strong, shinny and healthy. Though plenty of modern shampoos launched by different companies are available in the Ukhrul district but still the villagers, specially the old age women use traditional indigenous herbal shampoos since they believe that they are safer and keep the hair in

good condition. Some of the common plants that are used by the *Tangkhul* tribe are *Azadirachta indica,Boehmeriasidaefolia*, *Dillenia indica, Glycine max*, *Oryza sativa, Prunus persica, Sapindus emarginatus* etc. The plant species documented during field survey in the Ukhrul district of Manipur, are enumerated below in alphabetical order with the names of the family, in parenthesis is followed by plant status, vernacular names, indigenous mode of preparation and its uses.

Acacia concinna DC. (Fabaceae)

Vern. Name: ***Kangon***

It is a climbing shrub. Rare, grows wild.

Uses: Seeds are crushed and soaked in water for some hours and used as shampoo to remove dirt and to make hair silky.

Specimen examined: Salam, 1825, 15/2/2011, Ukhrul.

Ageratum conyzoides L. (Asteraceae)

Vern. Name: ***Konjai Kaho***

An erect strongly scented annual herb. Common, grows along dried up streams, low moist situation and abandoned in Jhum land.

Uses: Leaves are boiled with rice water for about 1hour and cooled. It is used for hair wash to keep the hair smooth and healthy.

Specimen examined: Salam,940, 30/10/2010, Sampui.

Ajuga macrosperma Wall ex Benth. (Lamiaceae)

Vern. Name: ***Ching-Sangbrei***

It is an erect herb. Occasionally, grows wild.

Uses: Leaves are used as ingredients in the preparation of *Chingi* (Local hair conditioner) for keeping the hair smooth with good fragrance.

Specimen examined: Salam,303, 29/4/2012, Litan. Sareikhong.

Artemisia nilagarica (C.B. Clarke) Pamp. (Asteraceae)

Vern. Name: ***Harana***

A tall aromatic undershrub. Common, abandoned jhum land.

Uses: Leaves are used as ingredients in the preparation of *Chingi* (Local hair conditioner) for keeping the hair with good fragrance.

Specimen examined: Salam, 1854, 12/9/2011, Nampisha **(Plate-25-A).**

Azadirachta indica A.Juss. (Meliaceae)

Vern. Name: ***Neem***

A large to middle sized tree. Occasional, planted or grows wild in the roadsides.

Uses: Crushed extracts of the seeds mixed with sesame oil is applied on scalp to kill lice.

Specimen examined: Salam, 963, 12/4/2010, Sikibung.

Boehmeria sidaefolia Wedd. (Urticaceae)

Vern. Name: ***Hashai***

It is a perennial shrub. Common, grows wild.

Uses: *Outer skin of the twigs is removed and soaked overnight in water. It yields a mucilaginous extract which is used as hair shampoo by the*Tangkhul*women. It keeps the hair smooth and provides extra shine.

Specimen examined: Salam, 307, 19/8/2012, Shiroy Chingkha **(Plate-25-B)**.

Citrus jambhiri Lush. (Rutaceae)

Vern. Name: ***Shingomthei***

It is a small tree. Common, planted in home garden.

Uses: Juice of the fruits is applied on scalp to remove dandruff. Also, a handful of fresh leaves are boiled with rice water and used to wash hairs for keeping the hairs smooth and silky.

Specimen examined: Salam, 994, 30/10/2010, Sampui.

Cymbopogon citratus Stapf. (Poaceae)

Vern. Name: ***Keyarphei***

It is a tall aromatic perennial grass. Occasional, grows wild.

Uses: Leaves are used as ingredients in the preparation of *Chingi* (Local hair lotion) for keeping the hair with good fragrance.

Specimen examined: Salam, 1818, 16/6/2011, Shiroy chingkha.

(Plate-25-C).

Dillenia indica L. (Dilleniaceae)

Vern. Name: ***Heigri***

It is an evergreen tree that are often fluted and buttressed at the base with a large oval crown. Rare, cultivated or wild.

Uses: Fresh fruits are pounded into paste and are massaged on the scalp two or three times in a week to remove dandruff and dirt.

Specimen examined: Salam, 565, 16/6/2009, Leiting.

Glycine max Merr. (Fabaceae)

Vern. Name: ***Maranthei***

It is a sub-erect, stout annual herb. Common, cultivated in jhum fields considered as important pulse.

Uses: Seeds are boiled with water for about 45 minutes. The extract obtained is used as shampoo for hair wash.

Specimen examined: Salam, 318**,** 20/9/2012, Awang kasom.

Lycopersicon lycopersicum L. (Solanaceae)

Vern. Name: ***Khavathei kathura***

It is a pubescent herb. Common, cultivated as vegetables crop.

Uses: Juice obtained by crushing the leaves is applied on scalp to remove dandruff, to prevent hair fall and to cool the head.

Specimen examined: Salam, 1840,30/10/ 2010, Bungpa khullen.

Mussaenda roxburghii Hook.f. (Rubiaceae)

Vern. Name: ***Kongrawon***

It is a large shrub. Common, grows wild.

Uses: Leaves are boiled with rice water for about 45 minutes. The extract obtained is used for hair wash to prevent hair fall, dandruff and to cool the head.

Specimen examined: Salam, 1866**,** 3/3/2011, Hundung.

Oryza sativa L. (Poaceae)

Vern. Name: ***Maa***

It is an annual herb. Cultivated as staple food.

Uses: Paddy straw locally called as '*Charu*' is burned to ash. Water is poured over ash in the basket and the sieved water is used as an shampoo by all the communities of Manipur.

Specimen examined: Salam, 3520, 8/7/2012, Ukhrul.

Perilla frutescens Britton (Lamiaceae)

Vern. Name: ***Hanshi***

It is an annual aromatic under shrubs. Common, cultivated in the home garden

Uses: Oil obtained by crushing the seeds is applied on scalp to prevent hair fall and to blacken the hairs.

Specimen examined: Salam, 1879, 3/3/2011, Ukhrul **(Plate-25-E).**

Phyllanthus emblica L. (Euphorbiaceae)

Vern. Name: ***Shakshathei***

It is a middle sized tree having crooked trunk. Common, planted in the home garden as well as grows wild

Uses: Fresh fruit is boiled with rice water for about 10-15 mins and is used for hair wash. Fresh fruit juice is mixed with sesame oil and is applied to the scalp for long black hair.

Specimen examined: Salam, 514, 17/10/2009, Lamlang **(Plate-25-D).**

Prunus persica (L.) Batsch. (Rosaceae)

Vern. Name: ***Mayangthei***

It is a small and middle sized deciduous tree. Common, planted in the kitchen garden.

Uses: Juice obtained by crushing the leaves is applied on scalp to remove dandruff and fungal infection.

Specimen examined: Salam, 929, 17/2/2011, Lunghar.

Rhus semialata Murr. (Anacardiaceae)

Vern. Name: ***Khamkhuithei***

It is a deciduous shrub or small tree. Common, planted as well as grows wild.

Uses: A handful of fresh leaves are boiled with rice water and the extract is used for hair wash to stimulate growth of hair and also to control hair fall.

Specimen examined: Salam,958,12/9/2011, Sikibung.

Sapindus emarginatus Vahl. (Sapindaceae)

Vern. Name: ***Chomshuthei***

It is a small or medium sized deciduous tree. Occasional, planted or grows wild.

Uses: About 15-20 fruits are boiled in 1/2 litre of water and the extracts is used as shampoo.

Specimen examined: Salam, *537*,17/2/2011, Lunghar **(Plate-25-F).**

Solanum myriacanthum Dunal (Solanaceae)

Vern. Name: ***Kapkhathei***

It is a spiny diffuse herb. Common, grows wild.

Uses: *Crushed tender fruits are used for hair wash.

Specimen examined: Salam, 316, 26/11/2012, Sikibung.

4.11:PLANTS USED AS BIOFENCING

Fencing the house boundaries and kitchen garden with the live plant species such as shrubs, bushes and small tree is an important old practice among the *Tangkhul* tribe in Ukhrul district, Manipur. The cut plant species are commonly used as dead fence around kitchen garden and agricultural fields to protect the crops from damage by livestock, wild animals and peoples across a boundary as well as prevent soil erosion by wind. The plants are not only used as biofencing but also in some other traditional uses. Among the biofencing plants *Lantana camara,* and *Phlogocanthus thyrsiformis*are considered as the most useful to their day-to-day life for daily consumption as well as for medicinal purposes.Both homogenous and heterogeneous type of fencing is practiced in Ukhrul district. The biofencing plant species documented during field survey in the Ukhrul district of Manipur, are enumerated below in alphabetical order with the names of the family, in parenthesis is followed by plant status, vernacular names and its uses.

Arundo donax L. (Poaceae)

Vern. Name: ***Kahui***

It is a perennial with an erect culm and a creeping rhizome. Common.

Uses: The plants are grown in boundaries of houses both in homogenous and heterogenous types.

Specimen examined: Salam, 957, 17/12/2010, Tungou.

Bambusa nana Roxb. (Poaceae)

Vern. Name: ***Hava***

It is an erect arborescent small sized bamboo.

Uses: A patch of bamboo planted around the boundaries of houses as a live fence in homogenous ones.

Specimen examined: Salam, 3600, 18/8/2012, Litan.

Carica papaya L. (Caricaceae)

Vern. Name: ***Awathabi***

It is a branches fast growing tree. Very common, cultivated.

Uses: The plants are grown in boundaries of houses and kitchen garden in heterogenous fencing**.**

Specimen examined: Salam, 546, 15/5/2009, Ukhrul.

Clerodendrum colebrookianum Walp. (Verbenaceae)

Vern. Name: ***Nareihan***

It is a large shrub. Very common, cultivated.

Uses: The plants are grownalong with other plant species inboundaries of houses and kitchen garden in heterogenous fencing.

Specimen examined: Salam, 548, 15/ 5/2009, Ukhrul.

Datura metel L. (Solanaceae)

Vern. Name: ***Farikna***

It is a short shrub having an ovate leaf with few teeth.

Uses: The plants are grown in boundaries of houses in heterogenous fencing**.**

Specimen examined: Salam, 1820, 16/2/2011, Ukhrul.

Dendrocalamus giganteus Munro (Poaceae)

Vern. Name: ***Havang***

It is a tall with large culm bamboo.

Uses: The plants are planted in patches in boundaries of houses in homogenous fencing and also cut bamboo are used as pillars and splitted culms are used as horizontal guardsas dead fence around agricultural fields.

Specimen examined: Salam, 350, 6/2/2012, Kasom Khunou.

Duranta repens L. (Verbenaceae)

Vern. Name: ***Sambalwon***

It is a bushy shrub with thorns.

Uses: The plants are grown in boundaries of houses and gardens for fencing of homogenous ones.

Specimen examined: Salam, 571, 10/7/2009, Litan.

Euphorbia antiquorum L. (Euphorbiaceae)

Vern. Name: ***Tengnou***

It is a large and much branched, succulent, xerophytic shrub with spines. Common, planted as ornamental.

Uses: The succulent shrub with thorns on the stem is grown along with bamboo species in heterogenous fencing.

Specimen examined: Salam, 585, 6/1/2009, Hundung.

Hibiscus rosa- sinensis L. (Malvaceae)

Vern. Name: ***Jubakusum***

It is an aborescent shrub.

Uses: The plants are grown inboundaries of houses and gardens for fencing of homogenous ones.

Specimen examined: Salam, 930, 16/4/2010, Ukhrul.

Jatropha curcas L. (Euphorbiaceae)

Vern. Name: ***Awa kege***

It is a large shrub.

Uses: The plants are grown inboundaries of houses and kitchen gardens for fencing of homogenous ones.

Specimen examined: Salam, 1824, 3/3/2011, Hundung.

Lantana camara L. (Verbenaceae)

Vern. Name: ***Nganam shirong***

It is a straggling shrub with aromatic leaves and recurved prickles on the stem.

Uses: The plants are grown in boundaries of houses and village for fencing of homogenous ones. This is the most commonly used plant as biofencing.

Specimen examined: Salam, 530,15/10/2009, Shiroy chingkha.

Musa paradisiaca L. (Musaceae)

Vern. Name**:** ***Nana***

It is a stout and erect herb. Common, cultivated in the homestead compound.

Uses: The plants are grown inboundaries of kitchen gardens for fencing of homogenous ones.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Opuntia vulgaris Gibbes (Cactaceae)

Vern. Name: ***Kameoraikhai***

It is a large succulent shrub with dark green spiny joints.

Uses: The plants are planted in village boundaries for fencing of heterogenous ones.

Specimen examined: Salam, 324, 2/12/2012, Litan.

Pasania spicata Qerst. (Fagaceae)

Vern. Name: ***Shahi***

It is an evergreen tree. Common, grows wild.

Uses: Stem are cut and used as dead fence around agriculture fields to protect from livestocks as well as from wild animals

Specimen examined: Salam, 1834, 18/8/2011, Lambui.

Phlogacanthus thyrsiformis (Roxb. ex Hardw.) Mabb. (Acanthaceae)

Vern. Name: ***Sipchang***

It is an evergreen shrub having smooth grey bark.

Uses: The plants are grown inboundaries of houses and kitchen gardens for fencing of homogenous ones.

Specimen examined: Salam, 512, 10/1/2009, Litan.

Psidium guajava L. (Myrtaceae)

Vern. Name: ***Pungdonrong***

It is a small branched tree. Common,planted in the kitchen garden.

Uses: The plants are grown inboundaries of home gardens for fencing of heterogenous ones.

Specimen examined: Salam, 554, 15/10/2009, Ukhrul.

Pyrus pashia Buch.-Ham. (Rosaceae)

Vern. Name**:** ***Lam Kapaithei***

It is a middle sized deciduous tree. Occasional, grows wild.

Uses: The plants are commonly planted around the bunds of the home garden as living fence of heterogeneous ones.

Specimen examined: Salam, 3531, 6/4/2012, Tolloi.

Urtica parviflora Roxb. (Urticaceae)

Vern. Name: ***Lenghui***

A slender herb with stiff stinging hairs. Common in dense and less lighted region of the forest.

Uses: The plants with stinging hairs on leaves are grown in boundaries in agricultural fields and kitchen garden for fencing of heterogenous ones.

Specimen examined: Salam, 340, 22/9/2012, Hundung.

4.12: PLANTS ASSOCIATED WITH SOCIO-RELIGIOUS PRACTICES, BELIEF AND TABOOS

Artemisia nilagirica (C.B. Clarke) Pamp. (Asteraceae)

Vern. Name: ***Maharana***

A tall aromatic undershrub. Common, abandoned jhum land.

Uses: Aerial parts of the plant was placed at the village gate during *Luira phanit* festival in order to screen out evil elements like ill luck, sickness, evil spirit etc, from the village.

Specimen examined: Salam, 1854, 12/9/2011, Nampisha.

Curcuma caesia Roxb. (Zingiberaceae)

Vern. Name:***Yaimu***

It is a stemless tuberous herb. Rare, cultivated.

Uses: *Tangkhul* people believe that spirits, devils cannot enter if the plant is planted within the premises of the house.

Specimen examined: Salam, 507, 17/5/2009, Nungbi khullen

(Plate-31-C)

Entada pursaetha DC. (Mimosaceae)

Vern. Name: ***Saotheila***

A large climber having greyish brown or blackish bark. Occasional, grows wild.

Uses: Women folk play '*Saotheila Kasa'* game with the seeds of *Entada pursaetha* only during Luira festival

Specimen examined: Salam, 579, 16/ 5/2009, Lambui.

Erythrina variegata L. (Papilionaceae)

Vern. Name: ***Thikchowon kahunga***

It is a medium to large tree with small black prickles cover the stem and branches. Occasional, grows wild.

Uses: Small piece of stem bark is tied around the neck of the child to keep off the evil spirit.

Specimen examined: Salam, 582, 20/5/2009, Ukhrul.

Musa paradisiaca L. (Musaceae)

Vern. Name: ***Nana***

It is a stout and erect herb. Cultivated in the homestead compound.

Uses: Leaves of the plant are used as plates or dishes and food wrappers in *Tangkhul* festival.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Perilla frutescens Britton. (Lamiaceae)

Vern. Name: ***Hanshi***

It is annual aromatic undershrubs. Common, cultivated in the home garden.

Uses: Traditional cake prepared from *Perilla frutescens* are offered to the guest during the festival of *Tangkhul.* Also, the cake is affixed at the doorpost as part of prayer to ward away evil spell and charm.

Specimen examined: Salam, 1879, 15/2/2011, Ukhrul.

Pinus kesiya Royle (Pinaceae)

Vern. Name: ***Matangthing***

It is a tall gregarious tree having whorled branches. Common, planted along the hill slopes.

Uses: Stem is used for making pine torched during all the festivals of *Tangkhul*.

Specimen examined: Salam, 1890, 18/8/2011, Lambui.

Prunus persica (L.) Batsch (Rosaceae)

Vern. Name: ***Mayangthei***

It is a small and middle sized deciduous tree.Common, planted in the kitchen garden.

Uses: Bunch of flower of the plant is used as offering to god during *Luira* festival

Specimen examined: Salam, 927, 16/4/2010, Ukhrul.

Pyrus pashia Buch.-Ham. (Rosaceae)

Vern. Name: ***Lam Kapaithei***

It is a middle sized decidous tree. Occasional, grows wild.

Uses: Uses same as ***Prunus persica.***

Specimen examined: Salam, 3531, 6/4/2012, Tolloi.

Rhus semialata Murr. (Anacardiaceae)

Vern. Name: ***Kamkhuithie***

It is a deciduous shrub or small tree. Common, planted as well as grows wild

Uses: Dried branches or twigs of the plant are burned during night time to keep off the evil spirit.

Specimen examined: Salam, 3559, 18/8/2012, Litan.

4.13: PLANTS USED AS WRAPPING

Amomum subulatum Roxb. (Zingiberaceae)

Vern. Name: ***Nonishon***

A perennial rhizomatous herb. Common, cultivated as well as grows wild in wastelands.

Uses: The leaves of the plant are used as food wrappers especially the traditional bread which is made from pounded rice.

Specimen examined: Salam, 304, 19/8/2012, Lambui.

Macaranga denticulata Mull. (Euphorbiaceae)

Vern. Name: ***Lakoi***

It is a middle-sized evergreen tree. Occasional, grows wild.

Uses: Fresh leaves are used to serve food and also for wrapping food stuff.

Specimen examined: Salam, 322, 29/9/2012, Hundung.

Musa paradisiaca L. (Musaceae)

Vern. Name: ***Nana***

It is a stout and erect herb. Cultivated in the homestead compound.

Uses: Fresh leaves are used to serve food and for packing food materials.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Elettaria cardamomum Maton (Zingiberaceae)

Vern. Name: ***Bara elaichi***

It is a pungent aromatic herbaceous perennial plant. Occasional, cultivated as well as grows wild.

Uses: Fresh leaves are used as wrappers of the traditional bread or cakes prepared from pounded common rice or sticky rice.

Specimen examined: Salam, 578, 15/12/2009, Ukhrul.

Phrynium capitatum Willd. (Marantaceae)

Vern. Name: ***Nalshilna***

It is a herb having creeping roostock and slender stem from tuberous rhizome.

Uses: Fresh leaves are used for wrapping traditional chapati.

Specimen examined: Salam, 3524, 8/10/ 2012, Nambasi khunou **(Plate-31-F).**

4.14:PLANTS USED AS DETERGENT

Tangkhul tribe uses plants around them for many purposes like food, shelter, dyes, cosmetics, clothing, medicine ,detergent and soap,fish poison,etc. from their surrounding vegetation. They gathered the knowledge from the environment, iched them and pass them through generation to

generation with or without written documents. Since time immemorial, *Tangkhul* communities still use plant species as their sources of soaps and detergent in different localities of Ukhrul district for washing clothes, hands, hairs, ornaments, utensils, etc.*Tangkhul* women folk of Ukhrul district practiced in making indigenous soaps and detergent by using varieties of plant parts viz., leaves, fruits and seeds. Some of the common plants that are used by the *Tangkhul* tribe are *Curcuma longa*, *Glycine max*, *Musa paradisiaca, Oryza sativa, Sapindus mukorossi*etc. Indigenous plant species usedas soaps and detergent in different localities of Ukhrul district have been documented along with associated traditional knowledge related to their use and process involved. It is commonly practiced in remote areas by the illiterates, poor and women folk of the district according to their needs. Some plants are found to be more effective than those of the present day's synthetic soaps and detergent. The soaps and detergent yielding plant species documented during field survey in the Ukhrul district of Manipur, are enumerated below in alphabetical order with the names of the family, in parenthesis is followed by plant status, vernacular names, indigenous mode of preparation and its uses.

Ananas comosus (L.) Merr. (Bromeliaceae)

Vern. Name**: *Chingomthei***

It is a tufted stemless herb having numerous, elongated and finely toothed rosulate leaves. Cultivated large scales in slopes of hills.

Uses: The fresh fruit juice is used as soaps for cleaning hands, brass and copper utensils and removing the stains of clothes, etc.

Specimen examined: Salam, 505, 10/7/2009, Litan.

Averrhoa carambola L. (Oxalidaceae)

Vern. Name: ***Heinoujam***

A small tree having fluted and dark- grey irregular stem. Occasional, cultivated or wild.

Uses: The fresh fruit juice is used as soap for cleaning hands, brass and copper utensils and removing the stains of clothes, etc.

Specimen examined: Salam, 962, 30/10/2010, Bungpa khullen **(Plate- 31-D).**

Carica papaya L. (Caricaceae)

Vern. Name: ***Awathabi***

It is a branches fast growing tree. Very common, cultivated.

Uses: The latex of the plant is rubbed over the stained area of the clothes for easy removing stains.

Specimen examined: Salam, 546, 15/5/2009, Ukhrul.

Curcuma longa L. (Zingiberaceae)

Vern. Name: ***Yaigang***

It is a rhizomatous perennial herb having irregular shaped rhizome. Very common, cultivated

Uses: The dry leaves are burnt and the ash obtained is mixed with water and boiled. The filtrate is used as detergent for washing clothes.

Specimen examined: Salam, 902, 28/10/2010, Phange

Garcinia pendunculata Roxb. (Clusiaceae)

Vern. Name: ***Changneira***

It is a large tall tree .Grows wild as well as planted.

Uses: The fruits are crushed and the liquid obtained is used for cleaning brass utensils and gold ornaments. Also, crushed fruit juice rubbed on wet hairs is very useful for softening of hairs.

Specimen examined: Salam, 919, 17/12/2010,Tungou.

Glycine max Merr. (Fabaceae)

Vern. Name: ***Maranthei***

It is a sub-erect, stout annual herb. Cultivated.

Uses: The boiled extract of the seeds are used as detergent for washing dirty white clothes.

Specimen examined: Salam, 318**,** 20/9/2012, Awang kasom.

Hibiscus cannabinus L. (Malvaceae)

Vern. Name: ***Sougree***

It is a shrub having prickly stem. Common, cultivated in the kitchen garden.

Uses: The fresh leaves crushed with hands are rubbed on body for removing the dirt of the body.

Specimen examined: Salam, 929, 17/8/2010, Litan.

Musa paradisiacal L. (Musaceae)

Vern. Name: ***Nana***

It is a stout and erect herb. Common, cultivated in the homestead compound

Uses: The ash obtained by burning the petiole is mixed with water and filtered. The filtrate is used as detergent for washing silk and cotton clothes. Also, the filtrate is rubbed on the body as soap while bathing.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Pisum sativum L. (Fabaceae)

Vern. Name: ***Hawai tharak***

It is an annual twinner shrub. Common, cultivated.

Uses: The burnt ash of dried twigs and leaves is mixed with water and filtered. The filtrate is used as detergent for washing clothes as well as for bathing.

Specimen examined: Salam, 531, 17/10/2009, Lamlang.

Oryza sativa L. (Poaceae)

Vern. Name: ***Maa***

It is an annual grass having long narrow flat leaves.Very common, cultivated

Uses: The burnt ash of straw is mixed with water and filtered.The filtrate is used as detergent for washing clothes as well as for bathing.

Specimen examined: Salam, 3520, 8/7/2012, Ukhrul.

Sapindus emarginatus Vahl. (Sapindaceae)

Vern. Name**: *Chaochumthei***

It is a small or medium sized deciduous tree. Occasional, planted or grows wild.

Uses: Seed coat is crushed and rubbed on the wet body produces lather which is used as soap for bathing, also the seed coat are used as detergent for washing clothes and jewellery.

Specimen examined: Salam, 537, 16/5/2009, Lambui.

4.15: MASTICATORIES AND FUMIGATORIES

Cannabis sativa L. (Canabinaceae)

Vern. Name**: *Ganja***

It is a scarcely branched and smelling annual herb of variable height. Occassional, Cultivated as well as grows wild.

Uses: Smashed dried leaves are used for smoking in smoking pipe

Specimen examined: Salam, 982, 4/8/2010, Lamlang.

Datura metel L. (Solanaceae)

Vern. Name: ***Farikna***

It is a short shrub having an ovate leaf with few teeth. Grows wild

Uses: Dried leaves are simply rolled and smoked.

Specimen examined: Salam, 182, 16/2/2011, Ukhrul.

Gaultheria griffithiana Wight (Ericaceae)

Vern. Name: ***Thingreng***

It is a shrub.Grows wild.

Uses: Bark is used as masticator.

Specimen examined: Salam, 501, 16/5/2009, Lambui.

Lyonia ovalifolia (Wall.) Drude (Ericaceae)

Vern. Name: ***Lakhothing***

It is deciduous shrub having a rough and reddish brown bark. Common, grows wild.

**Uses: ***Dried leaves are used for smoking as substitute of bidi.

Specimen examined: Salam, 1841, 19/8/2011, Landang.

Nicotiana tabacum L. (Solanaceae)

Vern. Name: ***Meikhari***

It is an erect viscidly –pubescent herb. Cultivated for tobacco leaves.

Uses: Dried leaves are used for smoking in smoking pipe.

Specimen examined: Salam, 1870, 19/8/2011, Landang.

Piper betle L. (Piperaceae)

Vern. Name: ***Kwa***

It is a climber. Very rare, cultivated in the home garden.

Uses: Leaves are used as masticators.

Specimen examined: Salam, 349, 2/12/2012, Litan.

Potentilla anserine L. (Rosaceae)

Vern. Name: ***Kwarong***

It is an annual erect herb with woody rootstock. Common, grows wild.

**Uses: ***Underground root stock is cut into small pieces and used as substituteof *Areca catechu* and chewed with *Piper betle*.

Specimen examined: Salam, 3528, 5/8/2012, Phadang.

Plantago erosa L. (Plantaginaceae)

Vern. Name: ***Havathan***

It is a glabrous perennial herb. Common, grows wild in moist places.

Uses: Leaf veins are used as for smoking by the young people.

Specimen examined: Salam, 523, 16/5/2009, Lambui.

4.16: BAMBOO & CANE USED FOR VARIOUS PURPOSES

Tangkhul have rich culture in handicrafts such as wood-carving, basketry, mat weaving and other domestic articles. Cane and bamboo is an important craft of this district, it occupies an important place in the day to day life of the *Tangkhul*. Handicrafts and basketry works are produced by farmers themselves at their leisure time. The *Tangkhul* produce exotic designs and colorful varieties of household articles of cane and bamboo for domestic as well as commercial use. They also weave head gear with cane specially meant for war dances. The uses of bamboo and cane are as follows:-

Arundinaria callosa Munro. (Poaceae)

Vern. Name: ***Laiwa***

It is a thorny shrubby erect bamboo.

Uses: Culms are used for making walking sticks, fishing rod and roofing of huts. Culms sold in markets @ Rs 45-50/-per piece.

Specimen examined: Salam, 3501, 18/8/2012, Litan.

Arundinaria racemosa Munro. (Poaceae)

Vern. Name: ***Kahathing***

It is a tall shrubby bamboo.

Uses: Culms are used for making weaving implementsand Paipeka small basket with straps which are commonly used for carrying the caught fish. It has a strap which is normally attached to a belt at the waist of the person while fishing **(Plate-27-D).**Not available in the market.

Specimen examined: Salam, 960, 18/8/2012, Litan.

Arundinaria rolloana Gamble (Poaceae)

Vern. Name: ***Ten Kahathing***

It is a small sized erect, thick bushy shrubby bamboo.

Uses: Culms are used as shaft for fixing the iron arrow head and weaving implements like *lagchat*. Not available in the market.

Specimen examined: Salam, 306, 26/11/2012, Litan sareikhong.

Bambusa balcooa Roxb. (Poaceae)

Vern. Name**: *Ching saneibi***

It is a tall, erect, caespitose, arboreous tufted bamboo.

Uses: Splitted pieces of bamboo are mostly used for making *Khongkhai,* mat for drying *Oryza sativa*,*Capsicum* sp, and other vegetables, and winnowing fan by the farmers. The strong and rigid culm is also used for making bridges, ladder, furniture like stools, chairs, cradle, etc. Culms sold in markets @ Rs 80-130/-per piece.

Specimen examined: Salam, 965, 18/8/2010, Litan.

Bambusa nana Roxb. (Poaceae)

Vern. Name: ***Khok Kahathing***

It is an evergreen, arborescent, caespitose bamboo.

Uses: Splitted pieces of bamboo are used for making fishing implements, handle of the axe, ladder, dao and a war weapon *Changuei* **(Plate-26-D).** Culms sold in markets @ Rs 200-250/-per piece.

Specimen examined: Salam, 3599, 18/8/2012, Litan.

Bambusa nutans Wall. (Poaceae)

Vern. Name: ***Kahathing***

It is an arboreous caespitose bamboo.

Uses: The small stem is used as musical instrument, smoking pipe, etc. Culms sold in markets @ Rs 60-100/-per piece.

Specimen examined: Salam, 966, 17/8/2010, Litan.

Bambusa tulda Roxb. (Poaceae)

Vern. Name: ***Saneibi***

It is an erect, caespitose arboreous bamboo.

Uses: Culms of suitable length is used as pillar in building bamboo huts, basketry works, fishing implements like *Khorsong,* for catching small fish like *Homaloptera modesta*in brooks and streams, also weaving implements particularly in *Rushing* and *lagchak.*Culms sold in markets @ Rs 100-150/-per piece.

Specimen examined: Salam, 967, 17/8/2010, Litan.

Calamus floribundus Griff. (Arecaceae)

Vern. Name: ***Mathir***

It is a creeper with cluster of spine in the leafsheath.

Uses: Stems are used for making baskets, sofa, rag, *Liphang*a traditional dinning table **(Plate-27-E).** Also, used for making *Tabu* which is woven neatly and tightly, it is covered by lid and used as a cloth storage basket **(Plate-26-E)** and *Tebam* used for keeping thread and yarn **(Plate-27-C).** Stem sold in markets @Rs 150/-per kg.

Specimen examined: Salam, 977, 20/8/2010, Khangkhui khullen.

Calamus guruba (Mart.) Kunth. (Arecaceae)

Vern. Name: ***Mathir***

It is a cluster forming rattan with well defined node and internodes.

Uses: Stems are used for making various headgears, leg guard of the chair, *Chum* a large basket used for storing paddy within the house **(Plate-26-F).** Stem sold in markets @Rs 100/-per kg.

Specimen examined: Salam, 979, 15/2/2010, Ukhrul.

Calamus palustris Griff. (Arecaceae)

Vern. Name: ***Mathir***

It is a cluster forming rattan, stem bright yellowish green in colour.

Uses: Stems are used for making walking stick, umbrella handle and *Luiho pasi* helmet in a conical shape **(Plate-28-A).** Stem sold in markets @Rs 100/-per kg.

Specimen examined: Salam, 980, 20/8/2010, Khangkhui khullen.

Cephalostachyum latifolium Munro. (Poaceae)

Vern. Name: ***Yotchie wa***

It is a shrubby semi scandent bamboo.

Uses: Culms are used for making bows, weaving stick, handle of some domestic instrument. Not available in the market.

Specimen examined: Salam, 310,10/11/2012, New Canon.

Dendrocalamus giganteus Munro. (Poaceae)

Vern. Name: ***Havang***

It is a tall with large culm bamboo.

Uses: Culms are used as drinking vesselsfor carrying water by the woman, also to preserve food materials and many household and agricultural implements. Culms sold in markets @ Rs180- 200/-per piece.

Specimen examined: Salam, 3508, 6/2/2012, Kasom Khunou **(Plate-28-C).**

Dendrocalamus hookeri Munro. (Poaceae)

Vern. Name: ***Unap***

It is a large bamboo with caespitose stems and long curving branches.

Uses: Culms are used for making storing basket *Kamu* and *Horsai* for keeping dry fish and meat, grains etc. **(Plate-27-B).** It is also used for making *Khaitem* a basket with detachable lid used for keeping caught fish, also thatching, binding and fencing purposes.Not available in the market.

Specimen examined: Salam, 3509, 6/2/2012, Kasom Khunou.

Dendrocalamus sericeus Munro. (Poaceae)

Vern. Name: ***Ooii***

It is a caespitose, erect, tall bamboo.

Uses: Splitted pieces of bamboo are used for making *Lumpak* for keeping costly ornaments and articles. Also, used for making *Bangrah,* for carrying firewood, drinking water contained in bamboo tubes, field implements and agricultural products **(Plate-26-C).** Culms sold in markets @ Rs 80-100/-per piece.

Specimen examined: Salam, 3510, 6/2/2012, Kasom Khunou.

Dendrocalamus strictus Nees (Poaceae)

Vern. Name: ***UnapKahathing***

It is a tall erect, caespitose, arboracous bamboo**.**

Uses: Splitted pieces are also used for making *Yamkok* used for winnowing *Oryza sativa* **(Plate-27-E).** It is also used for making a conical carrying basket *Kharing* used for fetching *Oryza sativa;* it is of close weave **(Plate-26-A).** *Lungkai* a conical basket used for carrying household goods like grains, vegetables, cut firewood, and many other essentials to and from the market **(Plate-26-B).** Culms sold in markets @ Rs 80-100/-per piece.

Specimen examined: Salam, 3510, 6/2/2012, Kasom Khunou.

Melocanna bambusoides Trin. (Poaceae)

Vern. Name: ***Nhongtak***

It is arborescence, erect and evergreen bamboo.

Uses: Splitted pieces of bamboo are used for making fencing, decorative objects,fishing implements, container baskets like *Luk* used for storing rice, grains vegetables, fruits etc **(Plate-27-A).** Culms sold in markets @ Rs 50-60/-per piece.

Specimen examined: Salam, 3517, 18/8/2012, Litan.

Teinostachyum dullooa Gamble (Poaceae)

Vern. Name: ***Dolluwa***

It is a arborescent, erect, medium- sized bamboo.

Uses: Splitted pieces are used for making storing containers, measuring baskets for paddy, festive decorations, musical instruments and culms are used for weaving implements like *roisung*. Not available in the market.

Specimen examined: Salam, 3569, 18/8/2012, Litan.

4.17: PLANTS USED FOR CONSTRUCTION OF HOUSES

Arundo donax L. (Poaceae)

Vern. Name: ***Kahui***

A tall and stout perennial grass with erect culm and a creeping rhizome. Common, planted as hedge plant.

Uses: The stem is used for walling for thatched house.

Specimen examined: Salam, 957, 17/12/2010, Tungou.

Bambusa nana Roxb. (Poaceae)

Vern. Name: ***Khok Kahathing***

It is an evergreen, arborescent, caespitose bamboo.Common, planted in homestead compound.

Uses: Culms are used for making of rafters, purlines of thatched house.

Specimen examined: Salam, 3599, 18/ 8/2012, Litan.

Castanopsis tribuloides A. DC. (Fagaceae)

Vern. Name: ***Thingzithing***

It is a middle-sized large evergreen tree. Grows wild.

Uses: Wood is used for planks, purlines, main pillars and post of house.

Specimen examined: Salam, 990, 29/10/2010, Khoikai.

Dalbergia sissoo Roxb. (Fabaceae)

Vern. Name: ***Chingsoo***

It is a large deciduous tree. Occasional, wild as well as planted.

Uses: Timber is used formaking of doors and windows.

Specimen examined: Salam, 311, 28/9/2012, Chingai.

Dendrocalamus hookeri Munro (Poaceae)

Vern. Name: ***Unap***

It is a large bamboo with caespitose stems and long curving branches.

Uses: Culms are used for purelines of thatched house.

Specimen examined: Salam, 3509, 6/2/2012, Kasom Khunou.

Dipterocarpus tuberculatus Roxb. (Dipterocarpaceae)

Vern. Name: ***Khangra***

It is a tall tree. Occasional, grows wild.

Uses: Timber is used formaking front door, planks and ceiling of house.

Specimen examined: Salam, 312, 28/9/2012, Chingai.

Duabanga grandiflora Walp. (Lythraceae)

Vern. Name: ***Tan***

It is a tall handsome tree with drooping branchlets.

Uses: Timber is used for making planks, floor, and ceiling of house.

Specimen examined: Salam, 1821, 3/3/2011, Hundung **(Plate-31-E).**

Eucalyptus globules Labill. (Myrtaceae)

Vern. Name: ***Vick rong***

It is a lofty aromatic tree. Common, planted in homestead.

Uses: Wood is used for posts and pillars of a house.

Specimen examined: Salam, 316, 19/9/2012, Razia khunou.

Imperata cylindrica (L.) P.Beauv. (Poaceae)

Vern. Name: ***Ngashi***

It is a perennial grass. Very common in dry lands.

Uses: The stem is used for thatching house and walling huts.

Specimen examined: Salam, 557, 10/7/2009, Litan.

Machilus odoratissima Nees (Lauraceae)

Vern. Name: ***Famanthing***

It is a middle-sized tree. Common, grows wild in forest.

Uses: Wood is used for making of doors and walls of the house.

Specimen examined: Salam, 321, 28/9/2012, Lamlang.

Pinus kesiya Royle (Pinaceae)

Vern. Name: ***Matangthing***

It is a tall gregarious tree having whorled branches. Common, planted along the hill slopes.

Uses: The wood is used for making planks, rafters, purlines of house.

Specimen examined: Salam, 1890, 18/8/2011, Lambui.

Phoebe hainesiana Brandis (Lauraceae)

Vern. Name: ***Uningthou***

It is a large evergreen tree. Common, grows wild

Uses: Timber is used for making traditional house doors and windows.

Specimen examined: Salam, 3523, 8/7/2012, Ukhrul.

Schima wallichii Choisy (Theaceae)

Vern. Name: ***Mashuithei***

It is a large tree having lenticellate branches. Common, grows wild.

Uses: Wood is used for post, pillars and rafters of house.

Specimen examined: Salam, 535, 15/5/2009, Ukhrul.

Tectona grandis L.f. (Verbenaceae)

Vern. Name: ***Teak***

It is a large deciduous tree. Common, planted for commercial.

Uses: Timber is used for making doors, windows and floors.

Specimen examined: Salam, 532, 15/10/2009, Ukhrul.

Themeda villosa Poir. (Poaceae)

Vern. Name: ***Kahinwon***

It is a large reed-like grass. Common, grows wild.

Uses: The stem is used for walling huts.

Specimen examined: Salam, 337, 26/11/2012, Grihang.

Toona ciliata M. Roem. (Meliaceae)

Vern. Name: ***Ipang***

It is a large deciduous tree. Common, grows wild.

Uses: Wood is used for post, purlines and rafters of house.

Specimen examined: Salam, 3580, 26/11/2012,Sikibung.

*Q**uercus serrata*** Thunb. **(**Fagaceae)

Vern. Name: ***Thingchangthing***

It is a middle- sized tree. Common, grows wild.

Uses: Wood is durable in moist condition used for posts, pillars and purlines.

Specimen examined: Salam, 3532, 5/8/2012, Phadang.

4.18: PLANTS USED IN HOUSEHOLD ITEMS, AGRICULTURAL IMPLEMENTS, FURNITURE ETC.

Acanthopanax trifoliatus Merr. (Araliaceae)

Vern. Name: ***Rangsongthei***

It is a prickly straggling shrub. Rare, cultivated.

Uses: Wood is used for making handle of spade.

Specimen examined: Salam, 933, 16/4/2010, Ukhrul.

Albizia lebbeck (L.)Benth. (Mimosaceae)

Vern. Name: ***Uil***

It is a moderate sized tree having branches with linear lenticels.Common, grows wild.

Uses: Wood is used for making of paddy husking block.

Specimen examined: Salam, 932, 12/9/2010,Sikibung.

Alnus nepalensis D. Don. (Betulaceae)

Vern. Name: ***Ngavathing***

It is a large deciduous tree. Common, grows wild.

Wood is used for household furniture.

Specimen examined: Salam, 945, 16/11/2010, Ukhrul.

Artocarpus lakoocha Roxb. (Moraceae)

Vern. Name: ***Harikonthong***

It is a large deciduous tree with a large spreading crown. Common, Planted.

Uses: Wood is used for many household furniture items.

Specimen examined: Salam, 956, 12/4/2010, Sikibung.

Bauhinia purpurea L. (Caesalpiniaceae)

Vern. Name: ***Haochokwon***

A medium sized deciduous tree. Common, planted as an ornamental and alsogrows wild.

Uses: Wood is used for making of small kitchen receptacles like pestle of chutney grinder, servicing spoon etc.

Specimen examined: Salam, 3503, 6/4/2012, Tolloi.

Bischofia javanica Bl. (Euphorbiaceae)

Vern. Name: ***Uthum***

It is a medium sized deciduous tree.Ocassional, grows wild

Uses: Wood is used for making of paddy husking block (*Shimkhur*).

Specimen examined: Salam, 970, 16/4/2010, Ukhrul.

Bombax ceiba L. (Bombacaceae)

Vern. Name: ***Tera***

It is a lofty deciduous tree, buttressed at the base.

Uses: Wood is used for making weaving implements like *muirang* (Spinning wheel)and musical instrument *Kapho Hyang.*

Specimen examined: Salam, 972, 16/7/2010, Leishi.

Callicarpa arborea Roxb. (Verbenaceae)

Vern. Name: ***Chicothing***

Uses: Wood is used for making weaving implements.

Specimen examined: Salam, 981, 16/4/2010, Ukhrul.

Castanopsis hystrix A. DC. (Fagaceae)

Vern. Name: ***Kahaothing***

It is a large evergreen tree.Grows wild in the forest.

Uses: Wood is used for making of furniture.

Specimen examined: Salam, 989, 29/10/2010, Khoikai.

Celtis australis L. (Ulmaceae)

Vern. Name: ***Heikreng***

It is a tree having slender branches. Occasional, planted in homestead compound.

Uses: Wood is used for making agricultural implements.

Specimen examined: Salam, 992, 15/7/2010, Phalang.

Cephalostachyum latifolium Munro (Poaceae)

Vern. Name: ***Yotchie wa***

It is a shrubby semi scandent bamboo.

Uses: Bamboo is used for making pipe of sucking rice beer.

Specimen examined: Salam, 310, 10/11/2012, New Canon.

Docynia indica (Colebr.) Decne. (Rosaceae)

Vern. Name: ***Theithukthei***

It is a moderate-sized deciduous tree with young parts and inflorescence woolly.

Uses: Wood is considered best for making of husking paddy stick (*Shikui*).

Specimen examined: Salam, 567, 15/10/2009, Shiroy chingkha.

Duabanga grandiflora Walp. (Sonneratiaceae)

Vern. Name:***Tan***

It is a tall handsome tree with drooping branchlets.

Uses: Timber is used for making wooden seat *pamkhong.*

Specimen examined: Salam, 1821, 3/3/2011, Hundung.

Flacourtia jangomas Raeusch. (Flacourtiaceae)

Vern. Name: ***Heitroi***

It is a small deciduous tree. Occasional, grows wild.

Uses: Timber is used for making of agricultural implements.

Specimen examined: Salam, 908, 17/8/2010, Litan.

Gmelina arborea Roxb. (Verbenaceae)

Vern. Name: ***Edanthing***

It is a middle sized deciduous tree.Common, grows wild.

Uses: Wood is used for making chutney grinder, plates, kitchen wares, decorative items, smoking pipe and cotton gin (*Singkhong*).

Specimen examined: Salam, 923, 12/9/2010, Sikibung.

Juglans regia L. (Juglandaceae)

Vern. Name: ***Shirangthei***

It is a large deciduous tree. Rare, grows wild.

Uses: Wood is used for making of various furniture works.

S**pecimen examined:** Salam, 926, 30/10/2010, Sampui.

Lagenaria seciraria (Molina) Standl. (Cucurbitaceae)

Vern. Name: ***Karopthei***

It is a large and softly pubescent climbing herb. Common, cultivated as vegetables crop.

Uses: Fruit pericarp is making into many types of vessels and pots for water container, storing grains and also used as mug for drinking traditional rice beer in almost all the festival of *Tangkhul*.

Specimen examined: Salam, 905, 16/11/2010, Ukhrul

(Plate-29-A-D).

Machilus bombycina King ex Hook. (Lauraceae)

Vern. Name: ***Chaomanew***

It is a middle sized tree with spreading branches. Ocassional grows wild.

Uses: The wood is used for making of ploughing implements.

Specimen examined: Salam, 1843, 12/9/11, Sikibung.

Michelia champaca L. (Magnoliaceae)

Vern. Name: ***Shelungwon***

It is evergreen middle -sized tree. Grows wild as well as planted in home garden.

Uses: Wood is considered best for making of furniture.

Specimen examined: Salam, 1859, 19/8/2011, Landang.

M. doltsopa Buch-Ham. (Magnoliaceae)

Vern. Name: ***Shirungthing***

It is a lofty decidous tree. Common, grows wild as well as planted in home garden as ornamental.

Uses: Wood is used for making of various furniture works. It is also used in making slit drum (*Ruku*).

Specimen examined: Salam, 350, 28/9/2012, Lamlang.

Melanorrhoea usitata Wall. (Anacardiaceae)

Vern. Name: ***Kheu***

It is a large deciduous tree with a straight clean cylindrical bole and a spreading crown of dark green leaves

Uses: Wood is used for making weaving implements (*Kapem*), decorative items and of various furniture works.

Specimen examined: Salam, 323, 16/11/2012, Jessami.

Phoebe hainesiana Brandis (Lauraceae)

Vern. Name: ***Uningthou***

It is a large evergreen tree. Common, grows

Uses: Timber is considered best for making of furniture.

Specimen examined: Salam, 3523, 8/7/2012, Ukhrul

Pinus kesiya Royle (Pinaceae)

Vern. Name: ***Matangthing***

It is a tall gregarious tree having whorled branches. Common, planted along the hill slopes.

Uses: Wood is used for making of low class furniture works.

Specimen examined: Salam, 1890, 18/8/2011, Lambui

Prunus armeniaca L. (Rosaceae)

Vern. Name: ***Malhei***

It is a middle sized tree.Occasional, planted in the home garden.

Uses: Wood is used for making of walking stick and handle of various tools.

Specimen examined: Salam, 1900, 19/8/2011, Landang.

Pyrus pashia Buch.-Ham. (Rosaceae)

Vern. Name: ***Lam Kapaithei***

It is a middle sized decidous tree. Occasional, grows wild.

Uses: Wood is used for making of walking stick and smoking pipe.

Specimen examined: Salam, 3531, 6/4/2012, Tolloi.

Tectona grandis L. (Verbenaceae)

Vern. Name: ***Teak***

It is a large deciduous tree. Common, planted.

Uses: Wood is considered best for making of high class furniture works.

Specimen examined: Salam, 532, 15/10/2009, Ukhrul.

Toona ciliata M. Roem. (Meliaceae)

Vern. Name: ***Ipang***

It is a large deciduous tree. Common, grows wild.

Uses: Wood is used for making of various furniture and handle of axe and spade. It is also used in making traditional instrument *Tingteila.*

Specimen examined: Salam, 3580, 26/11/2012, Sikibung.

*Q**uercus griffithii*** Hook .f. & Thoms**.** (Fagaceae)

Vern. Name: ***Thingchangthing***

It is a large deciduous tree. Common, grows wild.

Uses: Wood is used for making of paddy husking block (*Shimkhur*).

Specimen examined: Salam, 341, 29/5/2012, Lambui.

4.19: PLANTS OF MISCELLANEOUS USE

Abrus precatorius L. (Fabaceae)

Vern. Name: ***Chaning***

It is a small tree. Grows wild.

Uses: Dry seeds are used to make beads.

Specimen examined: Salam, 301, 19/9/2012, Razia khullen.

Aconitum nagarum stapf. (Ranunculaceae)

Vern. Name: ***Nuishiwon***

It is a herbaceous plant. Rare, grows wild in sirohee.

Uses: Tuberous root is used for poisoning the arrow-heads.

Specimen examined: Salam, 936, 18/11/2010, Siroy hills **(Plate-31-A).**

Artemisia nilagarica (C.B. Clarke) Pamp. (Asteraceae)

Vern. Name: ***Harana***

A tall aromatic undershrub. Common, abandoned jhum land.

Uses: Leaves are used as insect repellant.

Specimen examined: Salam, 1854, 12/9/2011, Nampisha.

Arundo donax L. (Poaceae)

Vern. Name: ***Kahui***

A tall and stout perennial grass with erect culm and a creeping rhizome. Common, planted as hedge plant.

Uses: Stem are used for making rough mat

Specimen examined: Salam, 957, 17/12/2010, Tungou.

Imperata cylindrica P.Beauv. (Poaceae)

Vern. Name: ***Ngashi***

It is a perennial grass .Common, grows wild in marshy areas.

Uses: Mature dry aerial parts of the plant are used as broom.

Specimen examined: Salam, 557, 10/7/2009,Litan.

Musa paradisiaca L. (Musaceae)

Vern. Name: ***Nana***

It is a stout and erect herb. Common, cultivated in the homestead compound.

Uses: Leaf sheath are used for polishing floor of houses.

Specimen examined: Salam, 516, 15/10/2009, Ukhrul.

Oroxylum indicum Vent. (Bignoniaceae)

Vern. Name: ***Phong***

It is a small or middle sized tree having light brown bark. Occasional, grows wild in scrub forest areas.

Uses: Seeds winged are used for making decorative objects and the outer cover of the bark is also used in making of traditional headgear.

Specimen examined: Salam, 913, 29/10/2010, Chassad.

Oryza sativa L. (Poaceae)

Vern. Name: ***Maa***

It is an annual herb. Cultivated as staple food.

Uses: Paddy straw is used to tied fodder plants and fuel woods.

Specimen examined: Salam, 3520, 8/7/2012, Ukhrul.

Luffa cylindrica M.Roem. (Cucurbitaceae)

Vern. Name: ***Narithei***

It is a large annual herbaceous climber. Cultivated as vegetables crop.

Uses: The fibrous of matured fruits is used for scrubbing utensils or as scrubber in bathing.

Specimen examined: Salam, 1838, 16/6/2011, Lauphang.

Phoenix sylvestris (L.) Roxb. (Arecaceae)

Vern. Name: ***Khaneithei***

It is a dwarf palm. Grows wild on open hills.

Uses: Fronds are used for making rough mats and also for weaving traditionalraincoat *Nampho* and *Rangdan.*

Specimen examined: Salam, 1883, 1/12/2011, Grihang **(Plate-32-A).**

Pyrus pashia Buch.-Ham. (Rosaceae)

Vern. Name: ***Lam Kapaithei***

It is a middle sized deciduous tree. Occasional, grows wild.

Uses: Flowers are smeared and put into honey bee hives to stupefy the bees.

Specimen examined: Salam, 3531, 6/4/2012, Tolloi.

Saccharum spontaneum L. (Poaceae)

Vern. Name: ***Emom***

It is a tall erect perennial grass. Common, grows wild.

Uses: Plants are commonly used as a rope to tied fodder plants and fire woods.

Specimen examined: Salam, 331, 28/4/2012, Shangkai.

Sida rhombifolia L. (Malvaceae)

Vern. Name: ***Uhan***

It is perennial undershrubs. Common, grows wild

Uses: Mature branches are commonly used for making of broom to sweep outside. Sold in market @ Rs 20-25/- per broom.

Specimen examined: Salam, 332, 29/ 9/2012, Litan Sareikhong **(Plate- 32-B).**

Stachytarpheta cayennensis (Rich.) J.Vahl (Verbenaceae)

Vern. Name: ***Kaho***

It is a bushy undershrub. Common, grows wild in wasteland.

Uses: Branches are used as broom.

Specimen examined: Salam, 1869, 18/8/2011, Lambui.

Thysanolaena maxima Kuntze. (Poaceae)

Vern. Name: ***Siphathing***

It is a large glabrous grass. Very common, grows wild.

Uses: Mature inflorescences are used as broom by all the communities of Manipur. Sold in market @ Rs 15-20 /- per broom.

Specimen examined: Salam, 3576, 6/4/2012, Tolloi.

Viburnum foetidumWall.(Caprifoliaceae)

Vern. Name: ***Raikuirathei***

It is a shrub having the young parts pubescent. Occasional, grows wild.

Uses: Stem bark is used in making fishing net *khanda*.

Specimen examined: Salam, 3585, 17/2/2011, Lunghar.

4.21: PLANTS ASSOCIATED WITH MUSICAL INSTRUMENT

Some important traditional musical instruments of the *Tangkhul* are mentioned below with brief description.

Sipa. It is a transverse flute made of *Teinostachyum Wightii* with six finger holes to play the tone and a hole near the base of the notch where the performer directs air against the edge.

Mazui. It is a type of harmonica made out of *Saccharum spontaneum.*It is popularly used by the women folks.

Talla. It is a horned instrument made of *Dendrocalamus strictus*, a small piece is fitted with a bigger piece and an animal horn is fitted at the front to give a vibrating sound effect.

Phung. It is a stout cylindrical double headed drum made of hollowed wood, (*Mangifera indica)* where a hide membrane is tightly stretched over one or both the heads **(Plate-32-C).**

Ruku. It is a wooden log drum made of *Toona ciliate* or *Michelia doltsopa.*

Kapho Hyang. It is a thin piece of elongated wood of *Gmelina arborea* fastened to a cord. It is played by swirling it around over head used in rituals for driving out evil spirits out of the village

Tingteila. It is a type of violin; the body is of a gourd cup, covered with thin animal bladder. The neck is of slender wood (*Toona ciliata)* which passes through the body.This is the most popular stringed instrument of the *Tangkhuls* used since time immemorial **(Plate-30-A).**

CHAPTER-V

5.1 General Discussions and Conclusions

The present work was carried out on the topic 'Ethnobotanical study of the *Tangkhul* Naga tribe in Ukhrul District, Manipur'. Regular extensive and intensive field work was undertaken season wise in the study area during 2008-2012 to collect and document ethnobotanical information on the plants used by the *Tangkhul* Community for different purposes. In course of the research work, fifty-six villages under the five subdivisions taken as study sites were visited. A total of 400 plant species belonging to 304 genera distributed in 118 families were recorded to be used by the *Tangkhul* tribe for meeting their multifarious requirements in their day to day activities. The plants are represented by the number of families, genera and species as given in the (**Table: 5.1).**

Table: 5.1: Plants of different groups used for various purposes

Plant groups	No. of families	No. of genera	No. of species
Dicotyledons	88	240	301
Monocotyledons	16	48	78
Pteridophytes	4	4	4
Gymnosperm	3	3	3
Fungi	7	9	14
Total	118	304	400

Of the 400 plant species, 301 species under 240 genera and 88 families belong to Dicotyledons (75.25%); 78 species under 48 genera and 16 families belong to Monocotyledons (19.5%); 4 species under 4 genera and 4 families belong to

Pteridophytes (0.96%); 3 species under 3 genera and 3 families belong to Gymnosperms (0.72 %) and 14 species under 9 genera and 6 families belong to Fungi (3.37%) have been collected and recorded as shown in (**Figs. 5.1, 5.2 & 5.3**). Out of all the species, 286 species are used for one purpose only and the remaining 114 for more than one purpose as shown in (**Fig. 5.4**). Of these, with respect to the habit, 168 plants were herbs, 80 shrubs, 6 under shrubs, 41 climbers and 105 tree species as shown in (**Figs. 5.5 & 5.6**).

Among the Monocotyledons plant species, Poaceae represented the maximum of 28 species followed by Zingiberaceae 16, Alliaceae 12, Arecaceae 5, Araceae 4, Orchidaceae, Smilacaceae, Dioscoreaceae with 2 each, and the rest 9 families represented by single species as shown in (**Figs. 5.13 & 5.14**) while among the Dicotyledons plant species Fabaceae represented the maximum of 21, Asteraceae 20, Solanaceae 14, Euphorbiaceae and Rosaceae with 13 each, Lamiaceae 12, Verbenaceae 11, Cucurbitaceae, Moraceae and Malvaceae with 9 each, Rutaceae and Urticaceae with 8 each, Apiaceae and Lauraceae with 7 each, Polygonaceae, Rubiaceae, Mimosaceae and Acanthaceae with 6 each, Caesalpiniaceae 5, Brassicaceae, Vitaceae, Anacardiaceae, Amaranthaceae with 4 each, Convolvulaceae, Ericaceae, Clusiaceae, Myrtaceae, Ranunculaceae, Magnoliaceae and Meliaceae with 3 each, Menispermaceae, Araliaceae, Berberidaceae, Tiliaceae, Caryophyllaceae, Oleaceae, Juglandaceae, Nymphaeaceae, Theaceae, Piperaceae, Portulacaceae, Flacourtiaceae and Combretaceae with 2 each, and the rest 44 represented by single species as shown in (**Figs. 5.11. & 5.12**).

According to the different usage, the plant species are categorized into Food and Beverages-286, Ethnomedicine-186, Ethnoveterinary-33, Fodder-26, Dye yielding-26, Firewood-11, Fibre-15, Fish Poisoning-12, Bird snaring-4 , Hair Care-19, Biofencing-18, Socio-religious-10, Wrapping purposes-5, Detergent-11, Bamboo & Cane-17, House construction-17, Household items-28, Masticatories and Fumigatories-8 , and Miscellaneous uses -17 as shown in (**Figs. 5.7 & 5. 8**).

A total of 286 species of plants belonging to 151 families and 240 genera were recorded to have been used by the *Tangkhul* community as 'Food and beverages' in the district. The plants are broadly categorized as mentioned in (**Table. 5.2.**), also shown in (**Fig. 5.9 & 5.10**).

Table No. 5.2: Uses of plants as food and beverages

Category	**Family**	**Genus**	**Species**
FOOD			
Edible tubers, bulbs, corms and rhizome	12	15	23
Edible tender shoots and leaves	50	92	103
Edible stems	5	5	5
Edible Inflorescences / Flowers / Buds	20	30	34
Edible fruits used as vegetables	12	25	30
Edible fruits	27	42	55
Edible seeds	12	17	18
Cereals and millets	1	4	4
Edible fungi	7	9	14
BEVERAGES	4	7	7

In the present study, it was recorded that *Tangkhul* tribe depends much on indigenous vegetables, both cultivated in kitchen gardens and wild, for enriching the diversity of food. The majority of the plants were cultivated 140 (33.73%) followed by wild 98 (23.61%) species while about 63 (15.18 %) were recorded as wild or cultivated. Some common species which are purely wild are also now started domesticated in the kitchen garden, because of their utility and income generating potential. Sinha (1987), Elangbam, *et al*., (1989), Singh (1987), Singh *et al.,* (2000) had also earlier reported plants species with ethnobotanical uses from Manipur.

Tangkhul people consumed tuber, underground rootstock, rhizome and bulb, for daily consumption as well as selling in local markets for economic value. They are eaten raw or boiled or roasted. Tuber species are also considered as one of the important source of food in Ukhrul district and have a significant place in the dietary habits of *Tangkhul* community during the periods of food scarcity. Some of the wild leafy species like *Antidesma acidum, Chenopodium album, Clerodendrum colebrookianum, Fagopyrum esculentum* etc., that are frequently used as leafy vegetables by the *Tangkhul* community is also reported to be used by the other communities of Manipur, Mao (1993), Elangbam (2002), Devi *et al.,* (2011b), also Kar & Borthakur (2007) reported to be used by the *Karbi* tribe of Karbi-Anglong district, Assam. Among the edible flowers species like *Ocimum americanum*, *Elsholtzia blanda, E. strobilifera*, which are used as spices and condiments are consumed throughout the year and are sold in local market which are in high demand by the *Tangkhul* people of Ukhrul district and fetches good market price even today. Khomdram *et al.,* (2009), also reported edible flowers found in the Valley districts of Manipur. Among the fruit used as vegetables, a majority of the species is cultivated, most of the species are taken in the form of simple boiled or cooked with meat. *Melothria heterophylla* and *Solanum spirale* are notable species used by this community.

Among the fruit plants *Phyllanthus emblica, Ficus cunea, Prunus cerosoides, P. nepalensis, P. salicina,* etc. are considered as income generating fruits which is used for the preparation of indigenous fruit beer. Sharma *et al*., (2000a) reported edible fruit used by the Meitei community, recently Devi *et al.,* (2012) reported from *Kabui* tribe of Manipur. Edible seeds are mostly eaten in cooked or roasted form by this community. Cereals and millets are found cultivated in jhum and terrace fields, it is considered as the most important crop that sustain life for the *Tangkhul* tribe. Wild edible fungi plays a major role in food stuff of the *Tangkhul,* many of the species like *Auricularia delicata, Lentinula edodes, Lentinus squarrossulus,*

Schizophyllum commune, Termitomyces clypeatus, etc. are collected by the local people during the rainy season for their own consumption as well as selling in the local markets and thereby generating a supplementary income to their household economy. Among the non-alcoholic beverages *Cymbopogon citratus* and *Sphenomeris chinensis* are the notable species used by this community.

A total of 186 medicinal plant species belonging to 76 families and 164 genera have been documented for its medicinal values. Out of the 186 plant species 149 are used from wild source. Of the medicinal plants recorded, the most common growth form was herbs followed by shrubs, trees, and climbers. Different parts of medicinal plant Viz., root (13.08%), rhizome (9.42%), bulb (1.04%), stem (2.61%), stem bark (8.37%), leaf (53.40%), flower (4.71%), fruit (10.47%), seed (5.75%), latex (2.09%), petiole (1.04%) and whole plant (13.08%) were used as source of medicine by the '*Khanong'* of this community as shown in (**Fig. 5.15**)**.** The method of application varies according to the degree of ailments, kind of disease, nature of drug plants and age of patient. The mode of preparation of herbal medicine was made in the form of decoction, paste, juice, etc. The data collected shows that the majority of the remedies treatments are taken internally, mode of preparation are drawn from a single plant; mixtures of other plants are rarely used by this community.

Among the medicinal plants reported, the number of plant species used for treating various diseases may be classified accordingly to their maximum to minimum uses as follows: Cold and Cough-29, Urinary trouble/kidney trouble/ stone case-27, Diarrhoea-24, Dysentery-23, Stomachache /stomach troubles-22, Fever-20, Diabetes-19, Cuts and wounds-19, Skin diseases-18, Stomach Ulcer-15, Muscular pain (sprain)/joint pain-14, Piles-13, Gynaecological disorder-13, Intestinal worm-11, Bronchitis-10, Jaundice-9, Liver complaint-9, Poisonous bite-9, Toothache-7, Swelling-6 , Eye trouble-5,

Malaria-5, Bone fracture-5, Tonsilitis-5, Colic-5, Mouth sores /Tongue sore-5, Dizziness-4, Rheumatism-4, Hypertension-4, Indigestion-4, Paralysis-3, Ear trouble-3, Burn-3, Chicken pox/Measles-2, Constipation-2, Sexual weakness-2, Nose bleeding-2 , Headache-1, Nail infection-1, Typhoid-1, Allergy-1 Sinusitis-1, Crack heels-1, as shown in (**Fig. 5.16**)**.** *Terminalia indica* seed was also recorded for treatment of poisonous bites by the *Tangkhul* community in the district which is also reported to be used by the Meitei and Meitei - Pangal communities of the state, also reported by the Santal tribes (Jain & Tarafder, 1970). *Eupatorium adenophorum* used in cuts and injuries by the *Tangkhul* community in the district which correlates with the report of (Rao & Jamir, 1982a), (Dash *et al.,* 2003) and (Joseph & Kharkongor, 1981).

A total of 33 species of ethnoveterinary plants belonging to 32 genera and 25 families were recorded. Rosaceae represented the maximum of 3 species followed by Alliaceae, Asteraceae, Euphorbiaceae, Mrytaceae, Meliaceae, Cucurbitaceae with 2 species each, and the rest 18 families represented by single species. The prevalent diseases found among the domestic animals of this district are diarrhoea, dysentery, cough, fever, wounds, skin diseases, constipation, and eye infection. Among the plant parts, leaves are predominantly used followed by bark, rhizome, whole plant, fruits and seeds. The plant parts are commonly used in the form of decoction, paste, juice, etc. *Rhus semialata* represent the most widely used plant species in treating veterinary diseases like diarrhoea and dysentery.

A total of 30 plant species are used for dyeing purposes. *Tangkhul* community still use natural plant dyes for imparting different shades to their clothes, hands, hairs, flower pots and food items by using varieties of plant parts viz., roots, leaves, barks, flowers and fruits. Bark of *Parkia timoriana , Pasania pachyphylla* and *Pasania spicata* are the most widely used plant parts for dyeing purposes specially for cotton thread by the *Tangkhul* community. Some of dye yielding plants recorded in the present study were also earlier

reported in other communities by (Sharma *et al*., 2005), (Akimpou *et al*., 2005) and Kar & Borthakur (2008 b) from Assam.

Out of 11 plant species used as firewood. *Pasania pachyphylla, Pasania spicata* and *Quercus* spp are widely used as a source of firewood for cooking and making fireplaces during winter. The charcoals obtained from this species are of high quality and there is heavy demand in the state. Hence, it serves as one of the main source of income for the *Tangkhul* tribe usually sold at the rate of Rs 350-450/-per one full gunny bag. The species *Grewia serrulata* stem bark is widely used for weaving *Tangkhul* shawl (*kachon*) which is worn during special occasions among the 15 fibre yielding species reported.

About 18 species are used for fish poisoning and bird snaring. Plants like *Acacia pinnata, Juglans regia* and *Millettia pachycarpa* are considered as the best species used for catching fish by applying plant parts extract in slow flowing streams, ponds, lakes and even rivers. Among the bird snaring plants, *Nei* (*Scurrula parasitica*) is the most common species used by the *Tangkhul* tribe.

Out of 20 plant species used for hair care, *Hashai* (*Boehmeria sidaefolia*) is the only species used most commonly by the *Tangkhul* women from the time immemorial until now, to keep their hair strong, shinny and healthy. A total of 22 plant species are used for bio-fencing, both homogenous and heterogeneous types of fencing are practiced in Ukhrul district. Among the biofencing plants, *Lantana camara,* and *Phlogocanthus thyrsiformis* are considered as the most useful to their day-to-day life for daily consumption as well as for medicinal purposes. Out of 10 socio-religious plants, 3 species *Perilla frutescens, Pinus kesiya* and *Musa paradisiaca* are considered as the most important species used in all the festivals of *Tangkhul.* Stem wood of *Pinus kesiya* is used for making pine torched during all the festivals.

A total of 5 plant species are used for wrapping purposes. Fresh leaves of *Amomum subulatum* and *Phrynium capitatum* are used for wrapping

traditional bread. A total of 12 plant species are used for detergent purposes, *Glycine max* and *Sapindus emarginatus* species are commonly used for washing clothes and jewellery**.** A total of 16 plant species are used in basketry and also for making different types of containers for domestic used. The culm of *Dendrocalamus giganteus* is commonly used by this community for preserving food materials and as drinking vessels, also *Dendrocalamus strictus* is widely used in handicrafts and basketry works. A total of 19 species are having high timber value and used for house construction materials, household articles, furniture, etc. *Phoebe hainesiana* and *Tectona grandis* are considered best for making of high class furniture works in the district.

Some of the species of plants which are used for house construction materials, household articles, agricultural implements, weaving implements, decorative items, musical instrument furniture are *Alnus nepalensis, Bambusa nana, Bambusa tulda, Imperata cylindrica, Phoebe hainesiana, Schima wallichii, Tectona grandis, Toona ciliata* etc. Tool- handles are commonly made from *Toona ciliata* and kitchen wares like spoons, plates etc. are commonly made from *Gmelina arborea.* A total of 30 species are used for this purpose. A total of 26 plant species are used as fodder for cattle, pig, fowls, etc, 4 species from Urticaceae family i.e., *Debregeasia longifolia, Girardinia leschenaultian* and *Pilea trinervia* are considered as good fodder for piggery in the present study. Out of 8 plant species used for Masticatories and Fumigatories, the uses of *Plantago erosa* as fumigatories and *Potentilla anserine* as masticatories are found to be the new report for the Manipur state. A total of 17 plants are recorded under miscellaneous uses, among which *Oroxylum indicum* and *Phoenix sylvestris* are most commonly used for making traditional headgear (*Luiho pasi*) and traditional raincoat (*Nampho* & *Rangdan*). *Sida rhombifolia* and *Thysanolaena maxima* are considered as the best broom used by this community.

5. 2: Significant findings

New discoveries on significant uses of some plants which were not earlier documented throughout India are revealed during the course of the study.

i) The root of *Potentilla anserine* L. (Rosaceae) is used as a masticatory item because of its flavour and colour.

ii) The fruit of *Solanum myriacanthum* (Solanaceae) has cleansing property, and therefore used as hair shampoo.

iii) Extract of *Isodon hispidus* (Benth.) Murata. (Lamiaceae) is used in dyeing traditional wooden items, plates and other fancy items.

iv) Many medicinal plants earlier recognized and reported by ethnobotanists and researchers are also used by the *Tangkhul* tribe, however the mode of preparation, application, dosage, other ingredients etc., tend to differ or alter at many occasions and stages. Like in *Tinospora cordifolia* which is commonly recognized as a climber to cure acute diarrhoea and dysentery, it is used by *Tangkhul* tribe as a powerful sex stimulant by male. Below given in (**Table 5. 3)** is a list of 15 plant species which is ethobotanically new to India.

Table 5.3: List of plants with new ethnobotanical information new to India

Botanical name/Family	Vern. Name	Uses
Canabis sativa L. (Canabinaceae)	*Ganja*	Dried leaves powder mixed with goat stool and fed to poultry for curing fever
Cymbopogon citratus Stapf. (Poaceae)	*Keyarphei*	Leaf decoction used in kidney stone
Dicrocephala integrifolia (Burm. f.) Wedd. DC. (Asteraceae)	*Lalukok*	Decoction of leaf applied as lotion in labour pain
Entada pursaetha DC. (Mimosaceae)	*Saotheila*	Seeds powder mixed with water and given in worm infections
Ficus benghalensis L. (Moraceae)	*Khongnang*	Bark powder mixed with powder of *Zingiber cassumunar* rhizome given in irregular menstruation
Ligustrum compactum Hook. f. (Oleaceae)	*Uyangan*	Leaf chewed in tongue sores
Lilium mackliniae Sealy (Alliaceae)	*Timrawon*	Rhizome decoction used in stomach troubles
Pogostemon parviflorum Benth. (Lamiaceae)	*Karihan*	Leaf decoction throat problem
Ranunculus scleratus L. (Ranunculaceae)	*Kakyel khujil*	Juice obtained is dropped in ear in cattle unconsciousness
Rhododendron arboreum Sm. (Ericaceae)	*Kokliwon*	Leaf decoction taken as tonic before and after delivery
Rhus semialata Murr. (Anacardiaceae)	*Khamkhuithei*	Seeds soaked in water and given in food poisoning

Sapindus emarginatus Vahl. (Sapindaceae)	*Chaochumthei*	Extract of fruit pulp mixed with vegetable oil is applied inside anus in constipation
Smilax lanceifolia A. DC. (Smilacaceae)	*Shangha-yung*	Rhizome decoction taken as a substitute of tea for fair complexion
Swertia chirata L. (Gentianceae)	*Langchung*	Decoction of whole plant mixed with honey and bear heart is given in jaundice
Quercus serrata Thunb. (Fagaceae)	*Hoktheithing*	Ash of leaf obtained by burning leaves mixed with water is given in white discharge

Many ethnobotanical uses are newly recorded in the present study, and therefore, new ethnobotanical reports for Manipur state. A total of 45 plants with new usage are given in (**Table 5.4.).**

Table 5.4: New reports on the uses of plants by the *Tangkhul* -Naga of Ukhrul district, Manipiur.

Botanical name /Family	**Vern. Name**	**Uses**
Acanthopanax trifoliatus (L.) Merr. (Araliaceae)	*Rangsongthei*	Leaves cooked as simple boiled vegetables
Allium chinense G. Don. (Alliaceae)	*Somri*	Bulb eaten raw with chutney
Alnus nepalensis L. (Betulaceae)	*Ngavathing*	Bark used for dyeing clothes
Amaranthus spinosus L. (Amaranthaceae)	*Somchan*	Leaf paste in burns

Ananas comosus (L.) Merr. (Bromeliaceae)	*Chingomthei*	Mature leaf decoction against Urinary tract stone
Begonia picta Smith. (Begoniaceae)	*Shaheb saithur*	Tender twig cooked as simple boiled vegetables
Blumeopsis flava DC. (Asteraceae)	*Uri*	Leaf cooked with pounded rice
Boehmeria sidaefolia Wedd. (Urticaceae)	*Hashai*	Extract of twig used as Shampoo
Carica papaya L. (Caricaceae)	*Awathabi*	Pounded seed mixed with water and given in intestinal worm
Clerodendrum farinosum (Roxb.)Wall. (Verbenaceae)	*Ching-moirangkhanum*	Leaf decoction against period pain
Curculigo orchoides Gaertn. (Hypoxidaceae)	*Phai*	Rhizome decoction against menstrual disorder
Curcuma caesia L. (Zingiberaceae)	*Yaimu*	Fresh rhizome juice given in vomiting
Cucurbita maxima Duch. (Cucurbitaceae)	*Khaimaithei*	Fresh fruit paste applied to treat wounds and injuries in dog.
Cuscuta reflexa Roxb. (Cuscutaceae)	*Sangrei*	Whole plant decoction given in fever and stomachache
Datura metel L. (Solanaceae)	*Farikna*	Leaves pounded into paste & applied in forehead against intestinal worm

Debregeasia longifolia (Burm.f.) wedd. (Urticaceae)	*Kahorathei*	Leaves cooked as simple boiled vegetables
Dendrobium denudans D. Don. (Orchidaceae)	*Shailengwon*	Whole plant decoction given in stomach ulcer
Elatostema lineolatum Wight (Urticaceae)	*Hantekhan*	Tender twigs cooked with pounded rice
Eupatorium odoratum L. (Asteraceae)	*Sheleirung*	Tender twigs with rhizome of *Curcuma longa* is boiled and given in liver troubles
Girardinia leschenaultiana Decne (Urticaceae)	*Anzar*	Leaves used as fodder
Gmelina arborea Roxb. (Verbenaceae)	*Edanthing*	Pounded bark used in dislocation of bones
Hibiscus abelmoschus L. (Malvaceae)	*Tawonrong*	Crushed root juice applied in inflammation
Lyonia ovalifolia (Wall.) Drude (Ericaceae)	*Lakhothing*	Leaf used as fumigatory
Mahonia manipurensis Takeda. (Berberidaceae)	*Yaiganmachurong*	Leaves cooked as simple boiled vegetables
Melothria heterophylla (Lour.) Cogn. (Cucurbitaceae)	*Hangkhapaitarere*	Leaves cooked as vegetables with dry fish.
Oroxylum indicum Vent. (Bignoniaceae)	*Phong*	Bark is boiled with bear heart given in intestinal and stomach problems.
Paris polyphylla Sm. (Alliaceae)	*Kazeapai*	Rhizome eaten raw for stomach ulcers

Pilea trinervia Wight (Urticaceae)	*Shatkharhan*	Leaves cooked as simple boiled vegetables
Polygonatum cirrhifolium (Wall.) Royle. (Alliaceae)	*Kamkui*	Shoots cooked as simple boiled vegetables
Pouzolzia viminea Wedd. (Urticaceae)	*Ari-arong*	Stem decoction given in stomach ulcers
Rosa sericea Lindl. (Rosaceae)	*Hashongthei*	Fruit is eaten raw
Saurauia nepaulensis DC. (Saurauiaceae)	*Nakuithing*	Leaves cooked with meat
Solanum spirale Roxb. (Solanaceae)	*Hanchonghan*	Fruit cooked as vegetable
Sphenomeris chinensis Maxon (Lindsaeaceae)	*Macha*	Leaf used as refreshing drink
Spondias axillaris Roxb. (Anacardiaceae)	*Khursongthei*	Fruit is eaten raw
Strobilanthes auriculatus Nees (Acanthaceae)	*Kumtharuk khangrangwon*	Fresh flower eaten steamed cooked
Stachytrapheta cayennensis (Rich.)Vahl. (Verbenaceae)	*Tharoi pijup*	Pounded fresh leaves paste applied in bodypain.
Syzygium cumini L. (Myrtaceae)	*Chomshathei*	Bark decoction given in diabetes
Tacca laevis Roxb. (Taccacaceae)	*Yaipai*	Rhizome paste applied in boils
Taxus baccata L. (Taxaceae)	*Kathinaomatang*	Leaf decoction given in cough and fever
Toddalia asiatica (L.) Lam (Rutaceae)	*Nayong komla*	Fruit is eaten raw
Urena lobata L. (Malvaceae)	*Phanang*	Bark is used as fibre

Urtica parviflora Roxb. (Urticaceae)	*Lenghui*	Leaves cooked with dal
Viburnum foetidum Wall. (Caprifoliaceae)	*Raikuirathei*	Stem bark used in making fishing net *khanda* and fruit is eaten raw
Zingiber cassumunar Roxb. (Zingiberaceae)	*Ram hui*	Rhizome juice in tonsilitisis

5.3: Conclusion

The present investigation revealed that Ukhrul district is rich in floristic diversity where *Tangkhul* people still rely on wild plants for different purposes. They not only utilized them for various purposes but also conserve them in their own traditional methods. The surrounding forest is protected under the supervision of the village chiefs or headmen. Wild leafy vegetables play a significant role in the sustenance of rural life in Ukhrul, hence it probably provide the nutritional requirements for the better health of the *Tangkhul* community. The availability of fruit plants like *Citrus jambhiri, Phyllanthus emblica, Passiflora edulis, Prunus domestica, P. cerasoides*, *P. persica, P. nepalensis* etc. in the market is decreasing day by day due to overexploitation. If proper strategies are proposed then these fruit plants may become a part of *Tangkhul* economy. Many high altitude plant species like *Rhododendron arboreum, Mahonia manipurensis, Oroxylum indicum, Paris polyphylla, Swertia chirata, Taxus baccata, Thalictrum foliolosum,* etc. are now becoming very scarce and their distribution have become very restricted in some pockets only due to over exploitation, thereby, it needs immediate conservation in order to prevent extinction in the district. *Lilium mackliniae,* a rare and endemic plant to Manipur state has also been recorded from the study area. In the present investigation, a total of 19 plant species which were not earlier documented throughout India are revealed and their

corresponding ethnobotanical uses are highlighted. Also, 45 plant species have been found to have new ethnobotanical uses, and therefore treated as new reports from Manipur state.

The present study shows that the applications of traditional practices are still now continuing in all the study sites among the rural folks and to them ethnomedicinal therapy played an important role in the primary health care since time immemorial. Practically, nothing is known regarding the origin of the large number of folk medicines. But the remedies resorted to various issues concerning health problems by this unique community is quite startling. They might have learnt to utilize local herbs in different ailments and relief of pains after trials of centuries often at the risks of the loss of human life. Their beliefs pertaining to various diseases and their remedies are also based on the past experiences and traditional logic. Inspite of the influx of modern civilization, particularly in the remote and rural areas, people still hold their traditional faith. Because of fast development of roads in many areas of the district, nowadays, the earlier trends of treatments are gradually diminishing. Yet the villagers, even now, prefer indigenous treatment to modern therapeutic measures unless the diseases become complicated. Some of their folklore medicines perhaps after investigation on modern scientific lines could provide future drugs for some dreadful diseases that are plague to the human being.

However, recent survey revealed that due to modernization and urbanization, changing of religion towards Christianity by the *Tangkhul* tribe, there is a fast changes in their culture. Besides, the rich forests are also disappearing very fast owing to 'Shifting' cultivation, forest fire, concrete roads, fire wood and other socio-economic activities in the region. An ethnobotanical study of these aspects is basic to an efficient use of the plant resources of this region. Since *Tangkhul* people live with nature in total harmony, the health and livelihood security of local people is much

depended on plants. The surrounding plants for this community form an integral part of their culture and the information about plants gets passed on from one generation to other only through the word of mouth.

Thus, the present study in ethnobotanical studies can also help local people to define their needs and the importance of plants and forest for their survival. As the community strictly follows and respects the principle of traditional heritage, preservation of age long ethnobotanical ethics can be perceived further if properly blended together with modern technology. Voluntary efforts from village heads, chiefs, scholars, dignitaries, student organizations as well as activism of Government policies is the need of the hour in order to effect proper documentation of ethnobotanical knowledges. Awareness on Rights and Patents can also motivate and encourage the preservation of tribal knowledges if proper guidance is given by concern authorities. This will also help many herbal healers/ practitioners to come forward and share the secrets of traditional healing instead of losing precious knowledge along with their death. Imparting new highlights on plant conservation and making them understand on sustainable utilization of plant resources will also proved worthy. Thus, the *Tangkhul* tribe can set an example and become a role model for other ethnic communities in enriching the field of ethnobotany.

CHAPTER-VI

SUMMARY

The present study entitled 'Ethnobotanical study of the *Tangkhul*-Naga tribe in Ukhrul District, Manipur' was carried out during 2008-2012 to collect and document ethnobotanical information on the plants used by the *Tangkhul* tribe for different purposes. The present research work contains six chapters which are as follow

The first chapter includes Introduction, Study sites, About the Tribe, Objectives of the present study. The study sites in the present study comprises of Drainage, Geology, Soil, Climate, Vegetation. Ukhrul, the present study site is the main homeland of Tangkhul tribe. It is one of the 5 (five) hill districts of Manipur, located between 23˚13 N and 25˚68 N latitudes and 94˚20 E and 95˚25E longitudes and covering an altitudinal range of 913 m to 3114 m above MSL. The district being a part of Manipur experience monsoonic with warm moist summer and cool dry winter. The hilly region is well marked by thick natural vegetation of trees, shrubs, herbs and bamboos. Under the head of About the tribe, it includes Origin of the *Tangkhuls,* Religion, Language and Script, Dress and Ornaments, Food and Drink, Music and Dance, Games and Sports, Festivals, Social life which again comprises Village system, House and House construction, Family, Nature of family, Clan, Marriage, Child birth ceremonies, Naming ceremony and Ear piercing ceremony (*Nashut Phanit*), Economic Life which again includes Agriculture, Livestock, Weaving. In the Objective, ethnobotanically important plants used by the *Tangkhul* tribe have been documented with updated botanical name.

The second chapter deals with Review of literature; it includes certain contributions on ethnobotany in India and abroad. Sinha (1987) was the pioneer in the field of ethnobotanical study of Manipur.

The third chapter includes methodology. It deals with field work, Collection of specimens, Preparing Herbarium Specimens, Identification of plants, Methods of procuring information, Methods of recording information and Presentation of data.

The fourth chapter is the enumeration part where the ethnobotanically important 400 plant species which have been used by the *Tangkhul* tribe are enumerated in alphabetically order according to their scientific names followed by the family name given in parenthesis, vernacular name, habit and brief geographical distribution along with the different categories of uses. The new and interesting uses of plants have marked with an asterisk (*).

The fifth chapter deals with general discussion and conclusion a total of 400 plant species belongs to 304 genera distributed in 118 families have been recorded in the present study. According to the different usage, the plant species are categorized into Food and Beverages-286, Ethnomedicine-186, Ethnoveterinary-33, Fodder-26, Dye yielding- 26, Firewood-11, Fibre-15, Fish Poisoning- 12, Bird snaring- 4 , Hair Care -19, Biofencing- 18, Socio-religious-10,Wrapping purposes-5, Detergent-11, Bamboo & Cane-17, House construction-17, Household items -28, Masticatories and Fumigatories -8 , and Miscellanous uses -17. A total of 45 plant species have been recorded as new ethnobotanical uses with reference to Manipur state while 19 plant species with new significant use of ethnobotanical implication which uses are not found in earlier literature is also recorded here for the first time.

The *Tangkhul* people are well acquainted with their surrounding plants and their potential role to use for different purposes. They utilized

forest products for food, fodder, medicine, fuel, gum, agriculture implements, basketry works, charcoal, decoration, defense equipment, dye, fencing, fishing, furniture, house building, musical instruments, socio-religious, timber, tools, and utensils etc. for their sustenance, daily needs and many other consumer products for self-sustenance. Many rare and indigenous medicinal plants are also available in the district providing immense scope for ethnomedicinal studies. The surroundings plants for this community form an integral part of their culture and the information about plants gets passed on from one generation to other only through the word of mouth. Without proper documentation, these resourceful of information or knowledge may be disappeared for ever. Therefore, the study of this kind is the first of its kind in the field of ethnobotanical studies in Ukhrul district of Manipur. It will pave a way to bridge up the aboriginal and modern society of the *Tangkhul* tribe by the help of traditional ethnobotanical implications.

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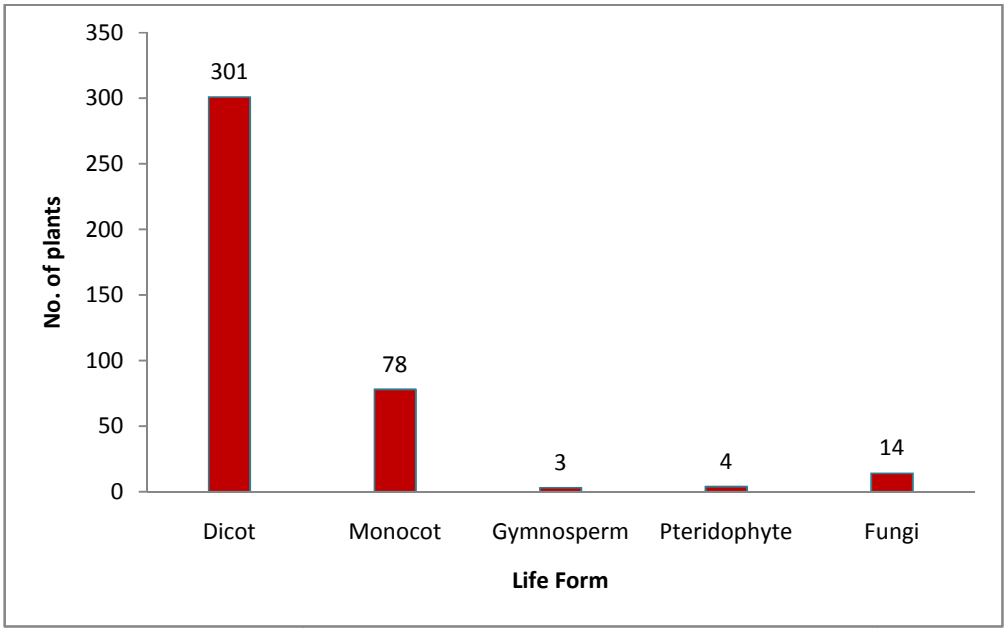

Fig. 5.1. No. of ethnobotanical plant species of different plant groups

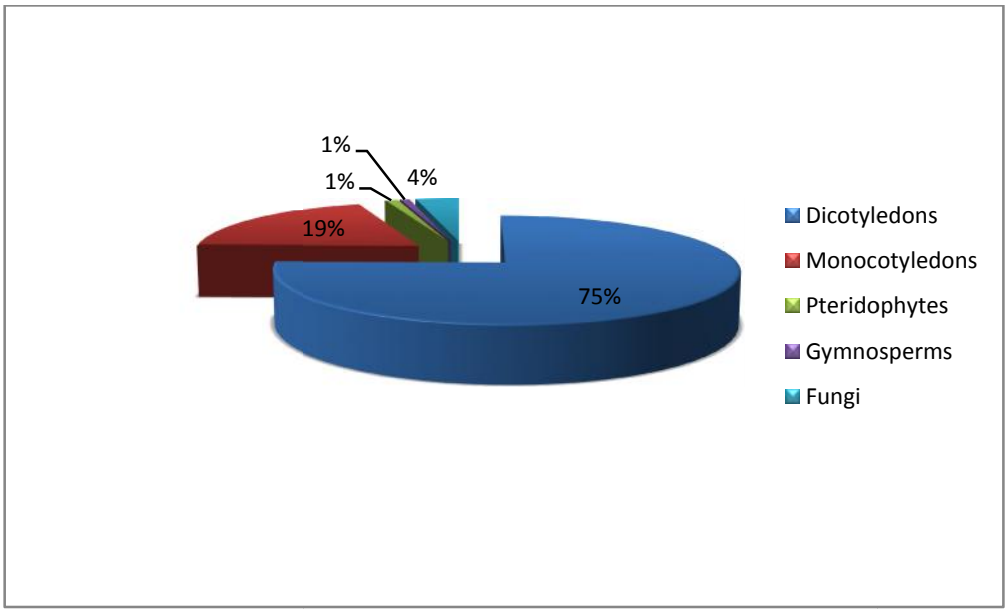

Fig.5. 2. Percentage of ethnobotanical plant species of different plant groups

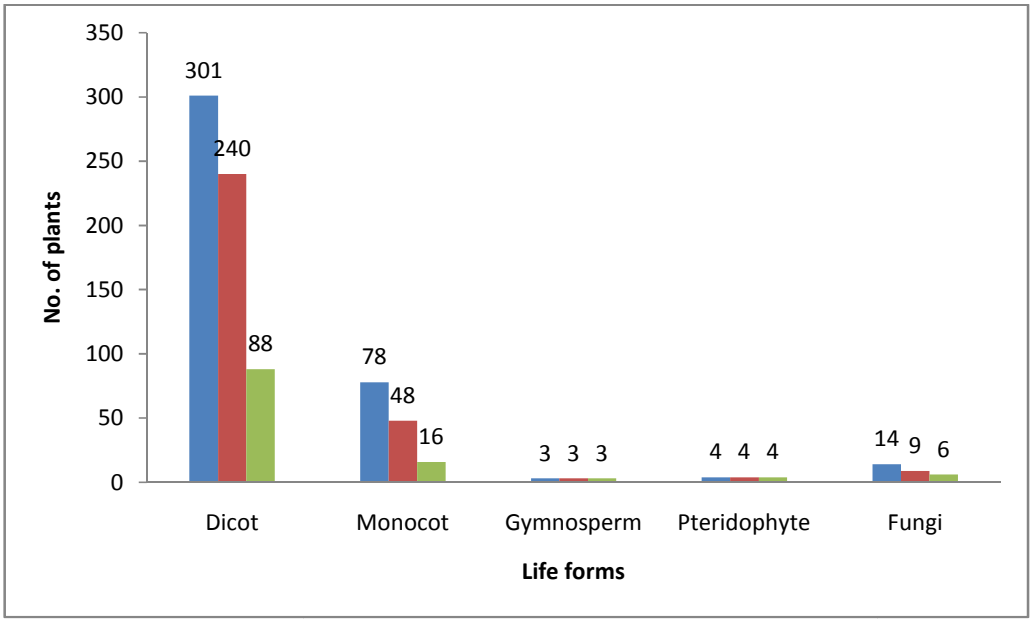

Fig.5. 3. No. of family, genus and species of different plant groups

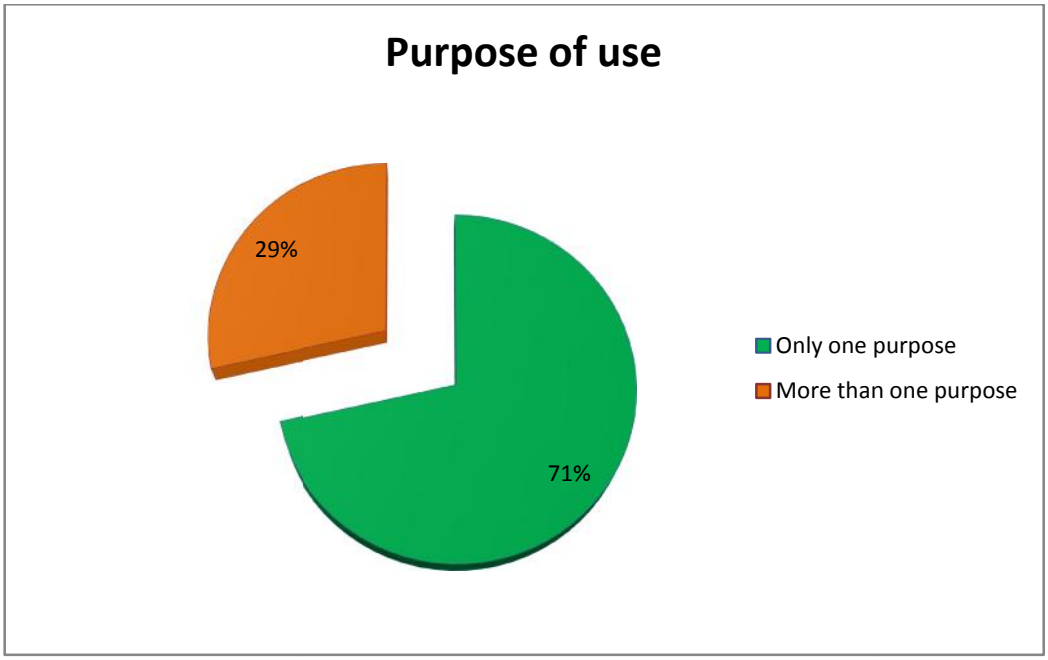

Fig.5. 4. Purpose of use

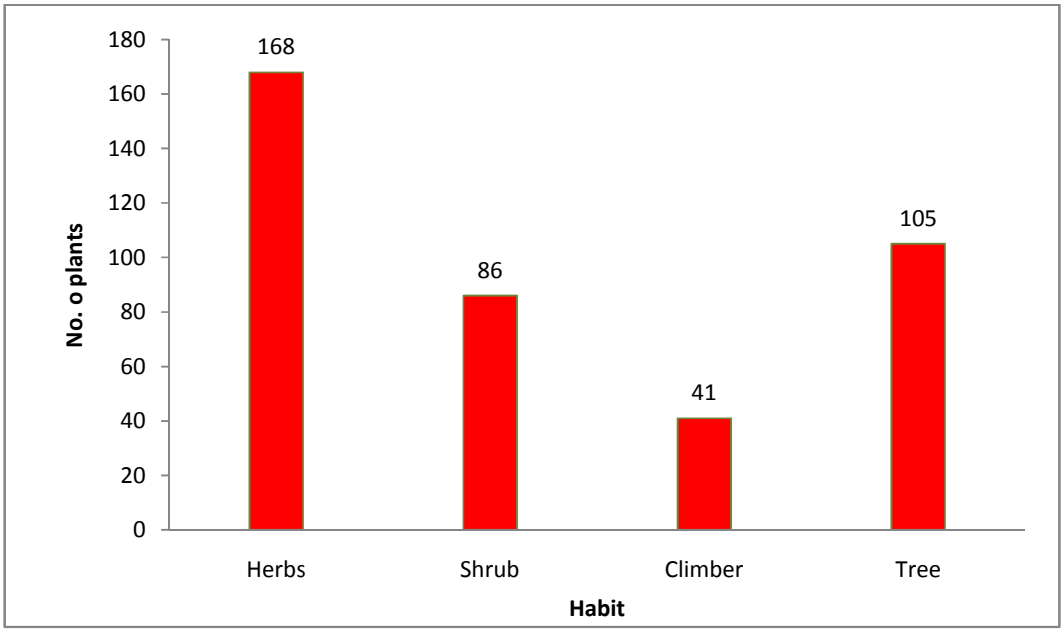

Fig.5. 5. No. of ethnobotanical plant species of different habits

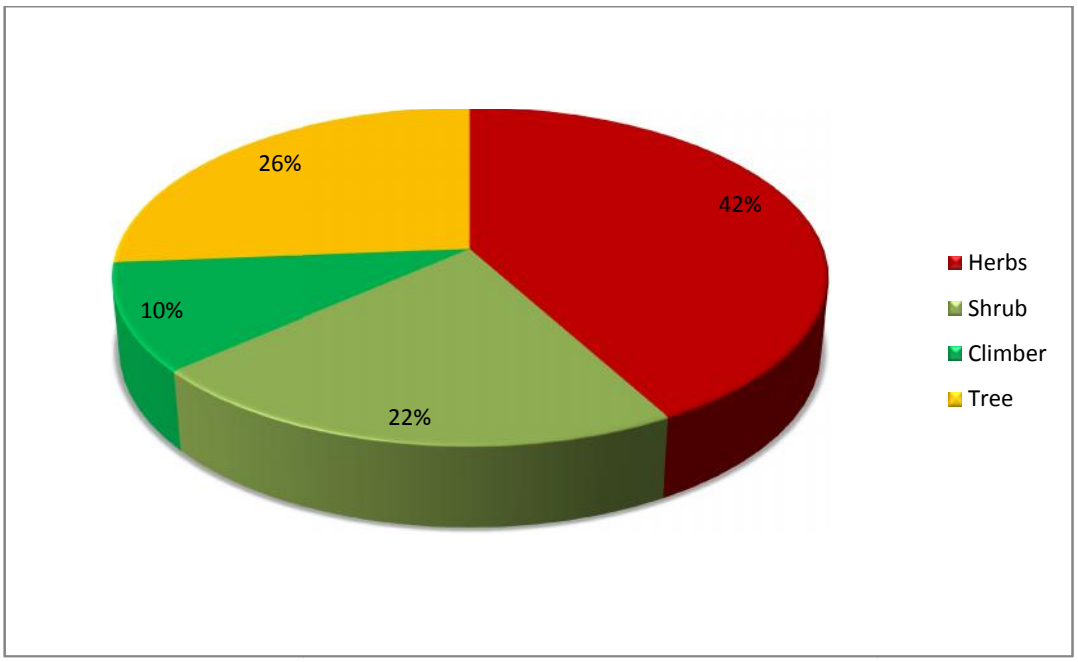

Fig 5. 6. Percentage of ethnobotanical plant species of different habits

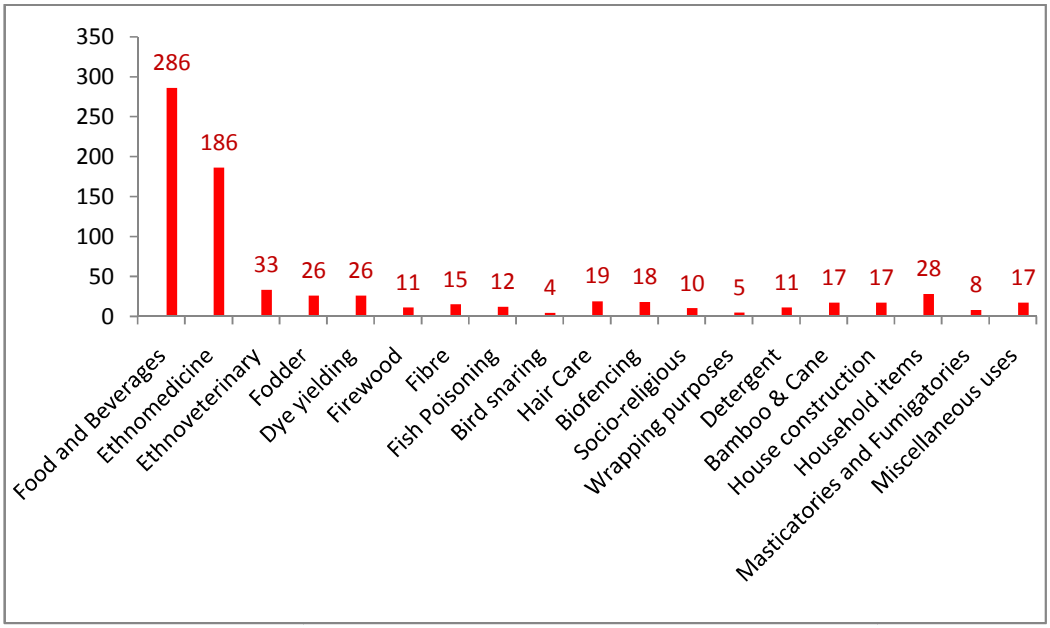

Fig. 5. 7. No. of ethnobotanical plant species used for different purpose

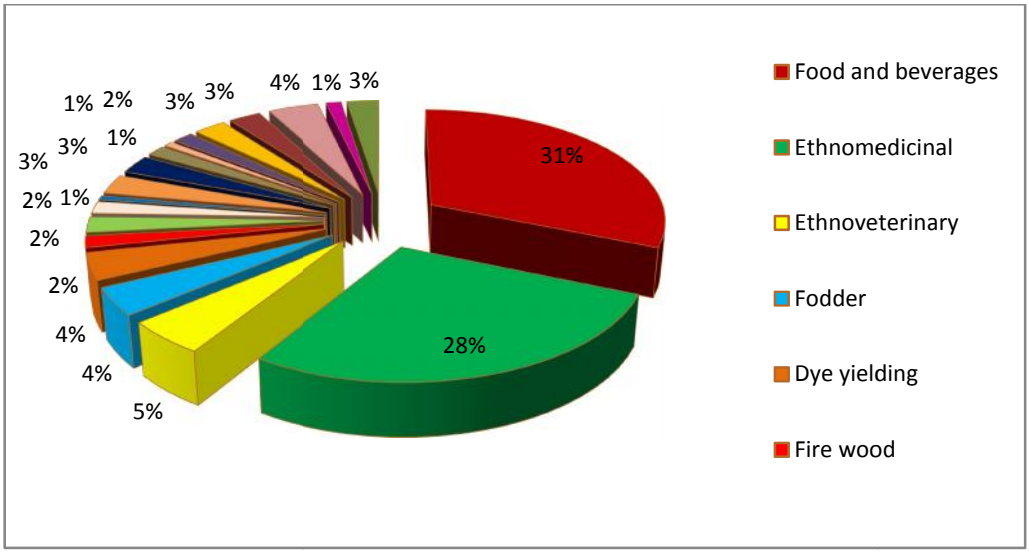

Fig. 5. 8. Percentage of ethnobotanical plant species used for different purposes

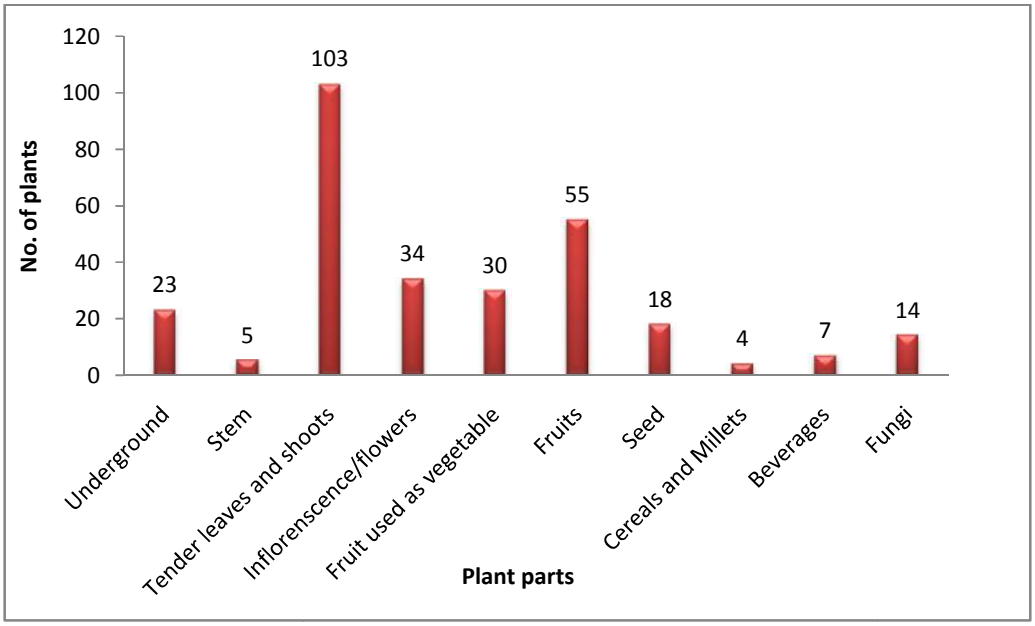

Fig.5. 9. Total no. of edible plant species of different categories

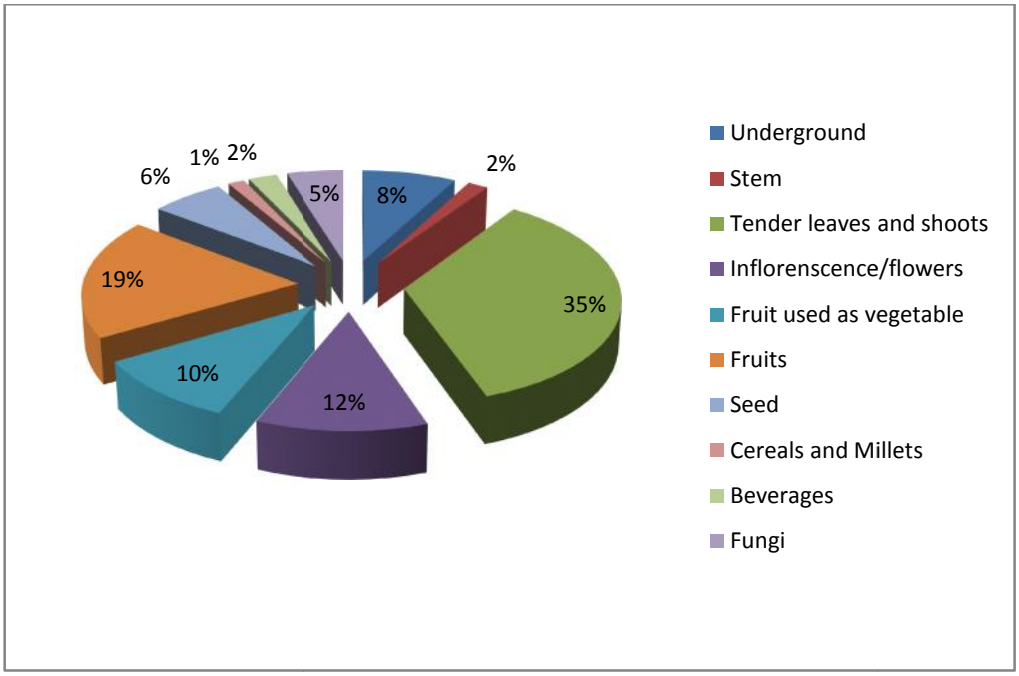

Fig.5. 10. Percentage of edible plant species of different categories

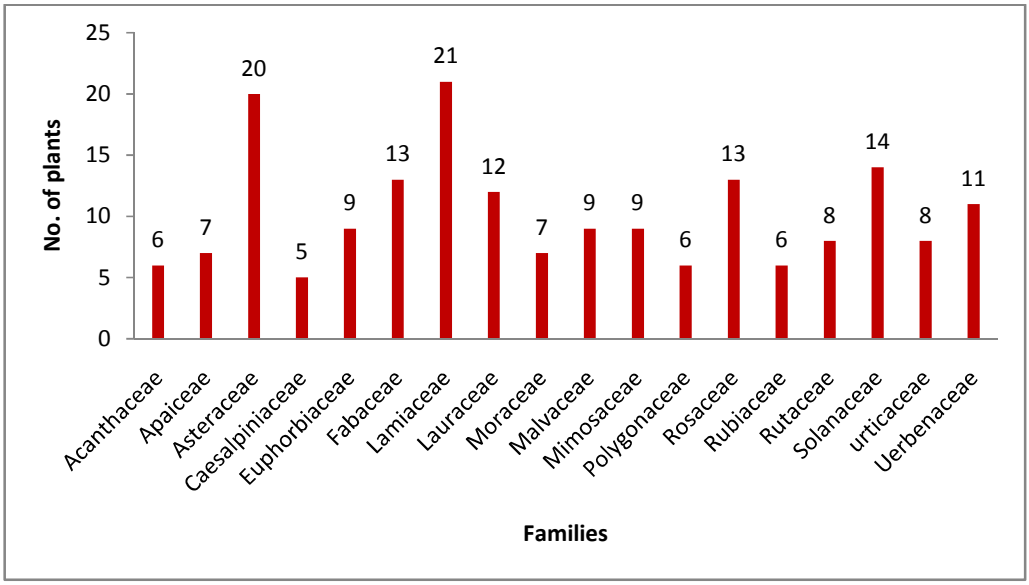

Fig.5. 11. No. of ethnobotanical plant species of dominant families of dicotyledons plant

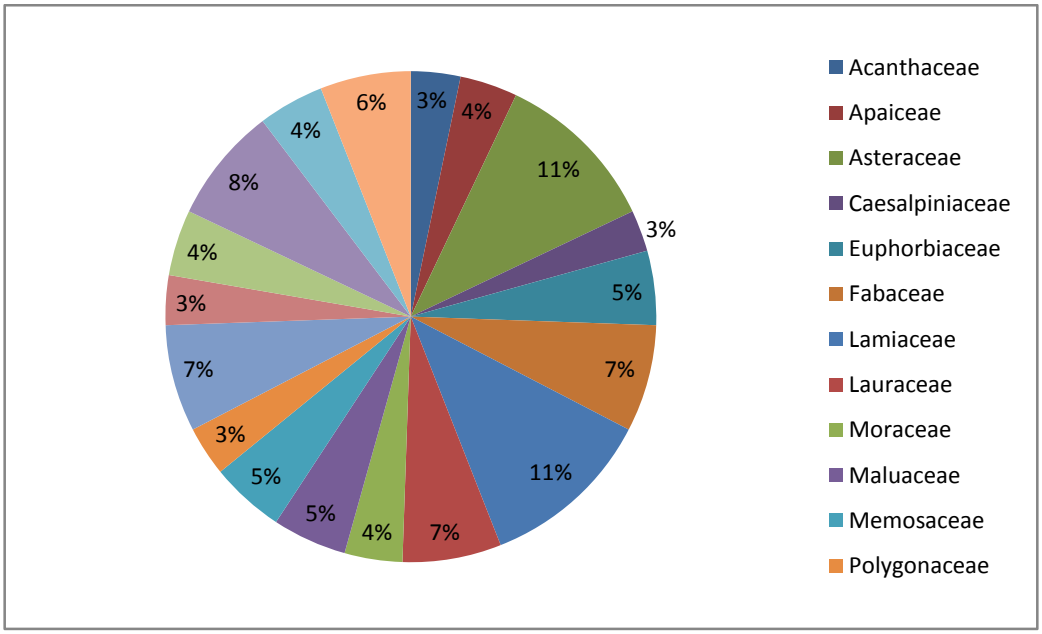

Fig.5. 12. Percentage of ethnobotanical plant species of dominant families of dicotyledons plant

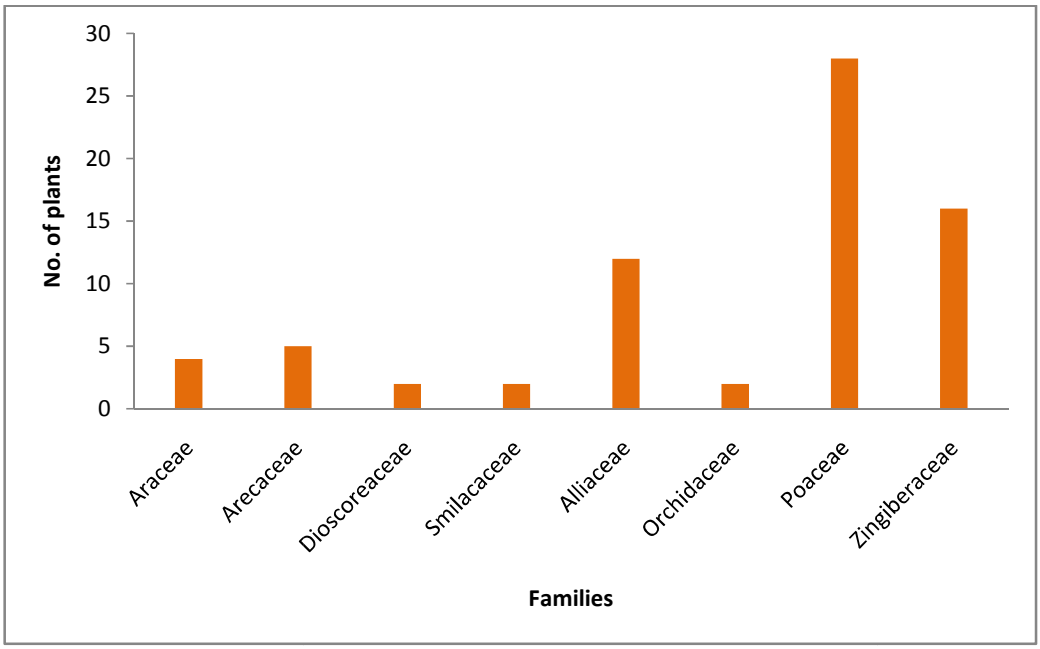

Fig.5. 13. No. of ethnobotanical plant species of dominant families of monocotyledons plant groups

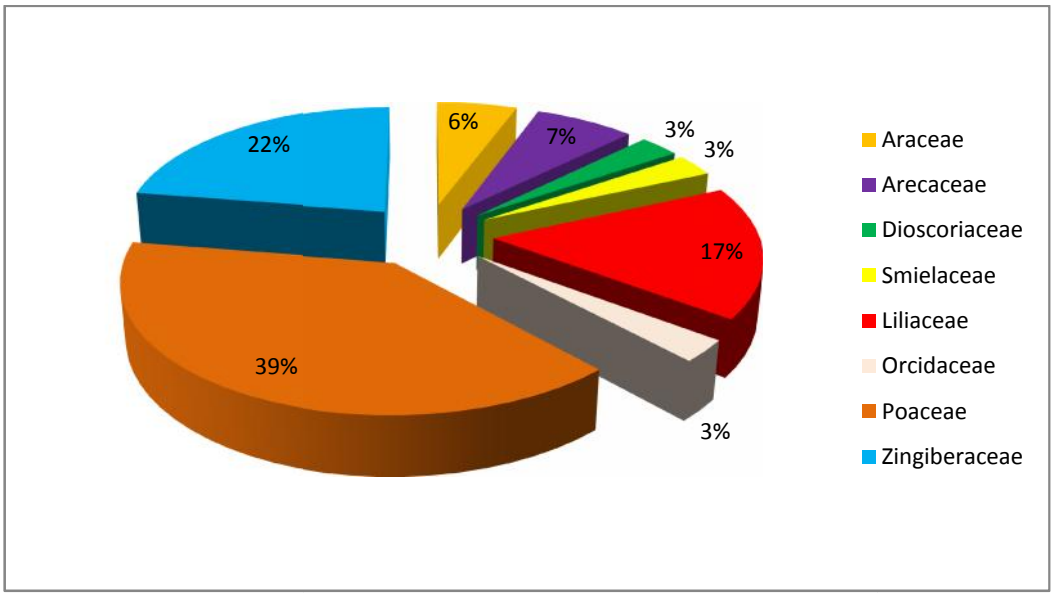

Fig. 5. 14. Percentage of ethnobotanical plant species of dominant families of monocotyledons plant

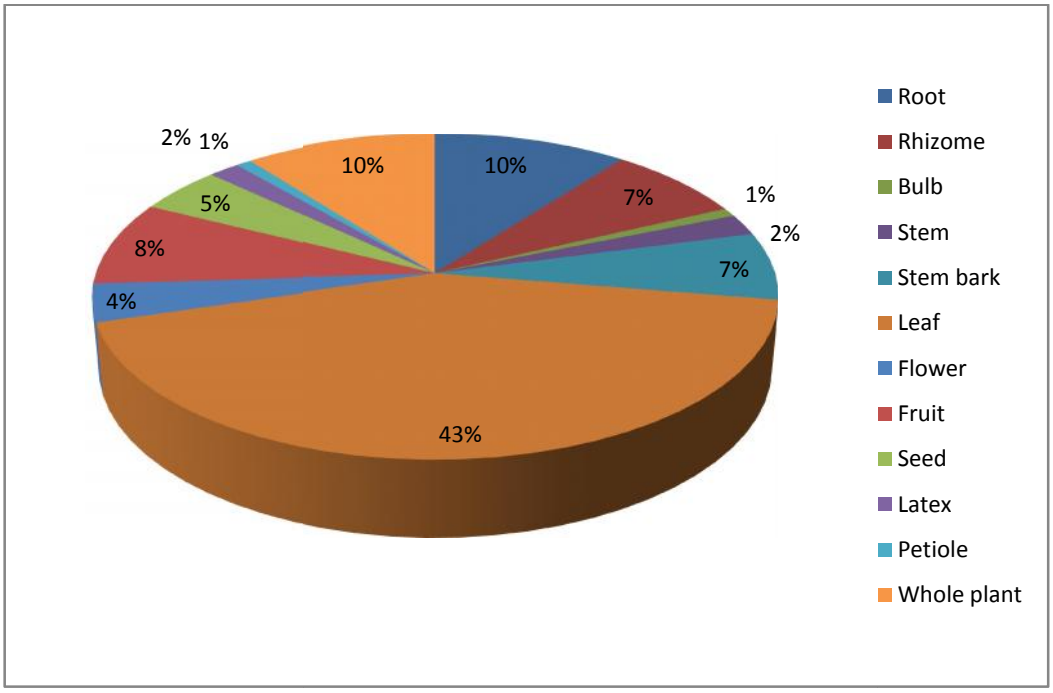

Fig.5. 15. Percentage of plant parts used for treating different ailments

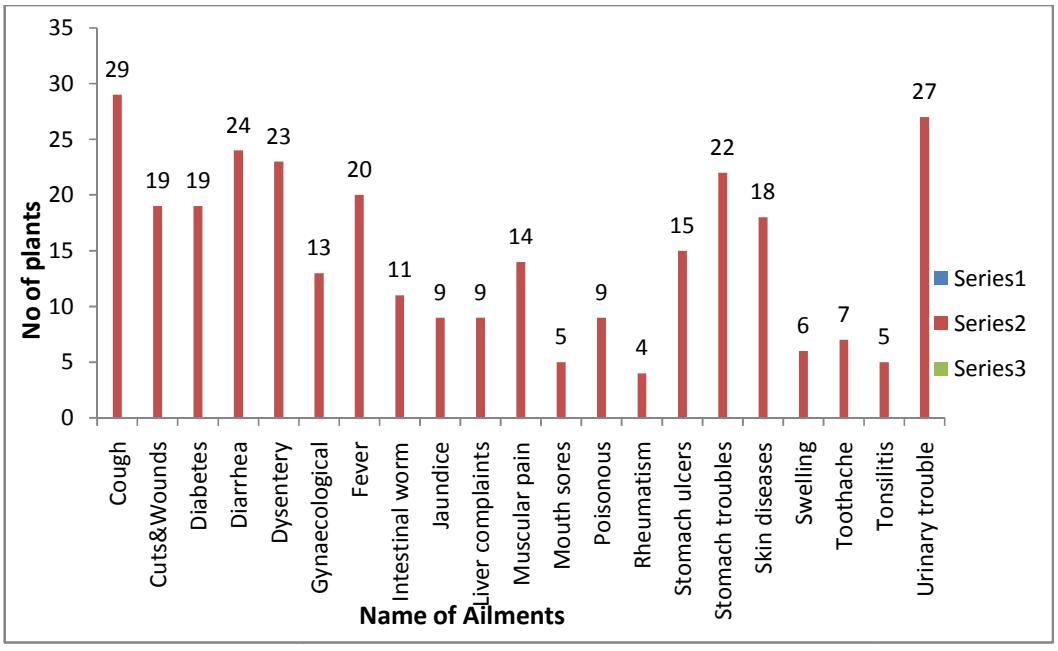

Fig.5.16. No. of plant species used for treating different ailments.

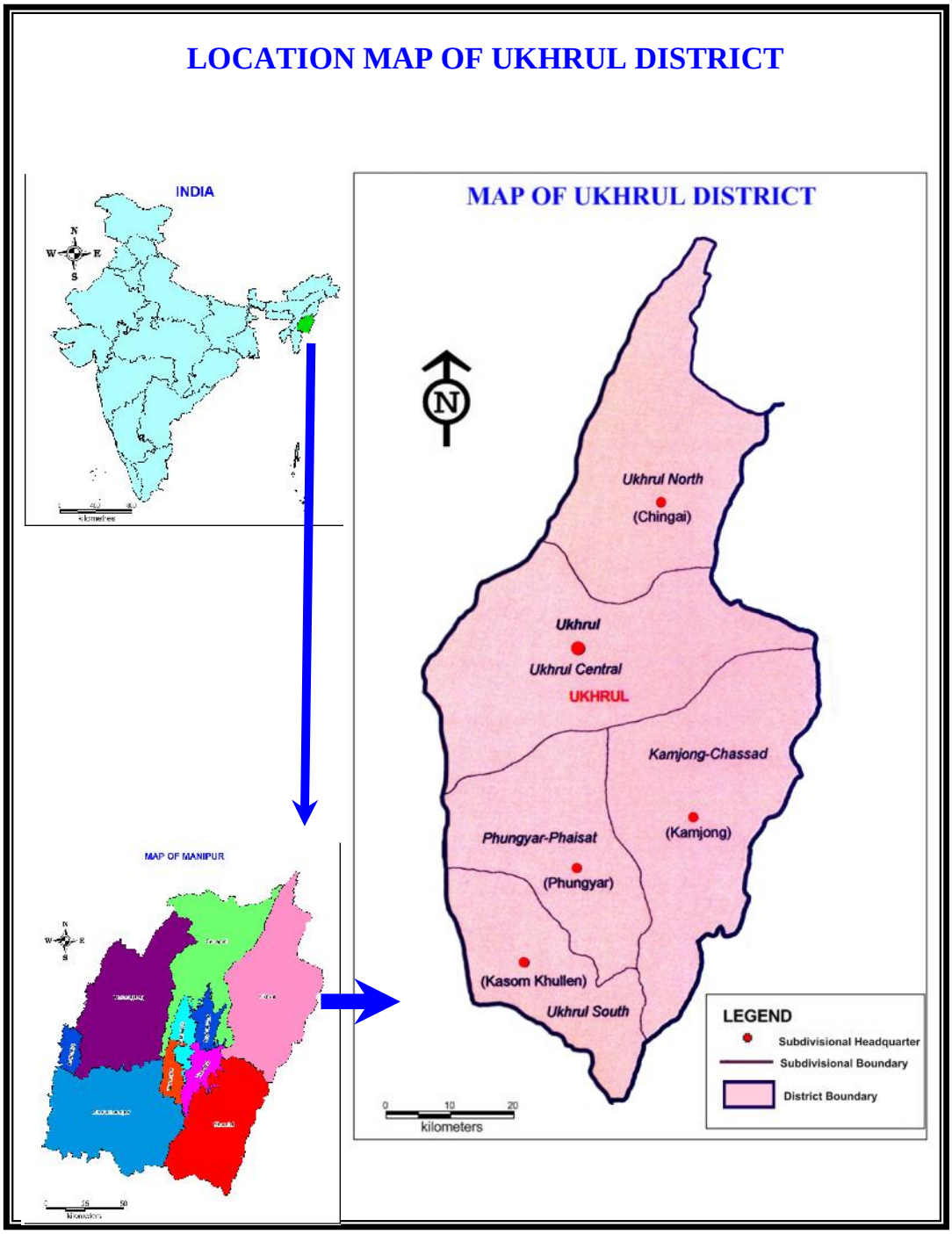

Fig. 1.2 : Map Showing Location of Ukhrul District

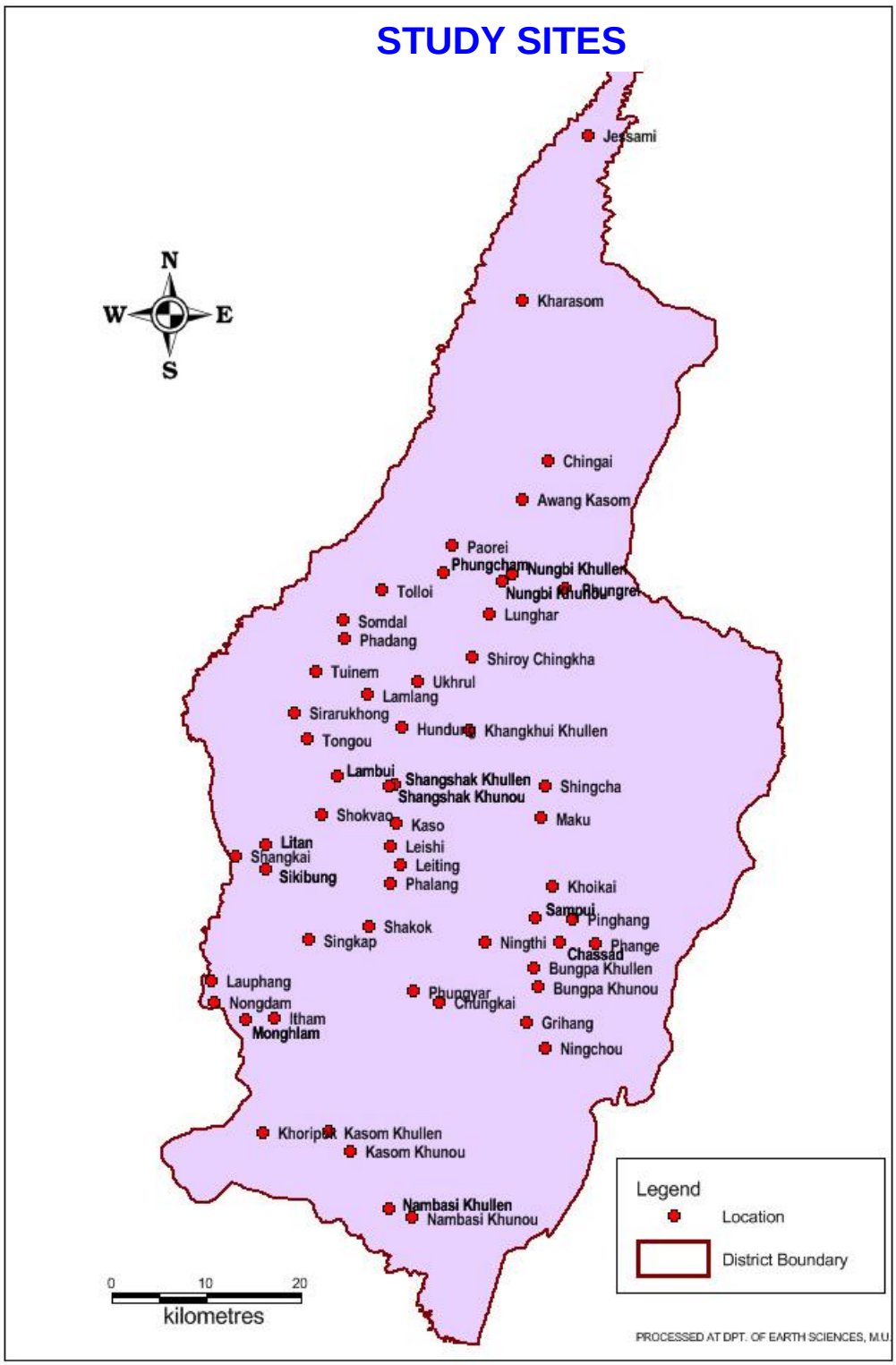

Fig. 3.1 : Map of Ukhrul District Showing Study Sites

FOREST MAP OF UKHRUL DISTRICT

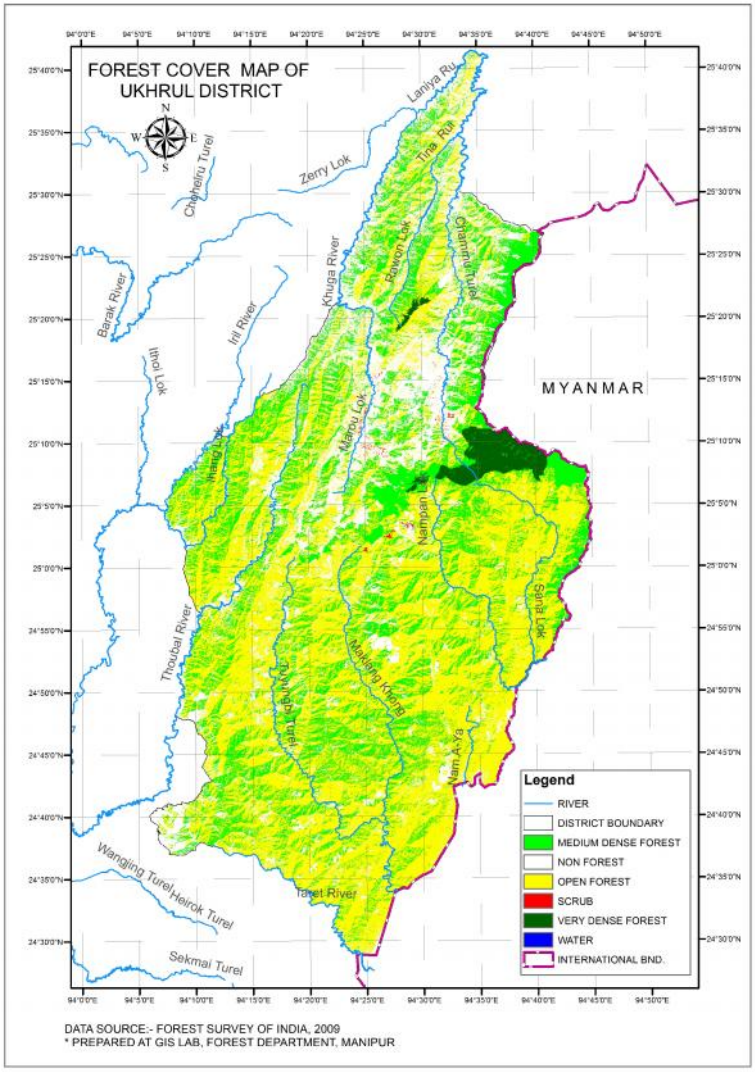

Fig. 1.2 : Map Showing Forest Covers of Ukhrul District

Plate 1 : Temperate forest of the study area.

Plate 2 : Burning down of forest for shifting cultivation.

Plate 3 : Terrace Cultivation

Plate 4 : Jhum Cultivation


A


B


C


D


E


F

Plate 5 : A. Traditional house of *Tangkhul* tribe,
B. Inside view of the kitchen,
C. Bamboo containers for preserving fermented food materials,
D. Store house of fire woods,
E. Chutney grinder,
F. Wooden plate with stand *(Seichang Khongphei)*.

Plate 6 : A. Traditional palanquin made of *Toona* woods used for carrying dignitaries during auspicious ceremonies, B. Village chief performing the ritual ceremony during *Luira* festival, C. Village couple showing the scene of sowing the first seed of the year during *Luira* festival, D. *La Khanganui* (Virgin's dance), E. *Rai pheichak* (War dance), F. Interview with the village elders.

A

B

C

D

E

F

Plate 7 : A. *Tangkhul* couple attires traditional dress & ornaments,
B. Upper garment for both sexes *(Raivat Kachon)*,
C. Upper garment for male *(Chongkhom)*,
D. Lower garments for female *(Kashon)*,
E. Weaving in a loin loom,
F. Interview with handloom weavers.

A

B

C

D

E

F

Plate 8 : A-D. *Tangkhul* Ornaments,
E. *Tangkhul* youths in traditional dress,
F. *Tangkhul* headgear.

A

B

C

D

E

F

Plate 9 : Edible Underground parts.

A. ***Alpinia galanga*** **Willd.,** **B.** ***Colocasia esculenta*** **(L.) Schott.,**
C. ***Dioscorea alata*** **L.,** **D.** ***Hedychium coronarium*** **Koening,**
E. ***Manihot esculenta*** **Crantz.,** **F.** ***Sechium edule*** **Sw.**

Plate 10 : Leafy Vegetables.

A. *Antidesma acidum* Retz., **B.** *Elatostema lineolatum* Wight.,
C. *Ficus tsjakela* Burm.f., **D.** *Persicaria perfoliatum* L.,
E. *Polygonatum cirrhifolium* Royle, **F.** *Viola pilosa* Blume


A


B


C


D


E


F

Plate 11 : Leafy Spices

A. ***Allium hookeri*** **Thw.,** **B.** ***Allium chinense*** **G.Don.,**
C. ***Allium tuberosum*** **Roxb.,** **D.** ***Apium graveolens*** **L.,**
E. ***Elsholtzia blanda*** **Benth.,** **F.** ***Eryngium foetidum*** **L.**


A


B


C


D


E


F

Plate 12 : Edible Flowers/Inflorescences

A. ***Bauhinia purpurea*** **L.,**

B. ***Clerodendrum farinosum*** **(Roxb.) Steud.,**

C. ***Cucurma angustifolia*** **Roxb.,**

D. ***Phlogacanthus thyrsiformis*** **(Roxb. ex Hardw.) Mabb.,**

E. ***Rhododendron arboreum*** **Sims.,**

F. ***Strobilanthes auriculatus*** **Nees.**

Plate 13 : Fruit Used As Vegetables

A. ***Capsicum chinense*** **Jacq.,** **B.** ***Cyphomandra betacea*** **Cav.,**
C. ***Parkia timoriana*** **Merr.,** **D.** ***Psophocarpus tetragonolobus*** **DC.,**
E. ***Solanum spirale*** **Roxb.,** **F.** ***Solanum torvum*** **Schltdl.**


A


B


C


D


E


F

Plate 14 : Edible Fruits

A. *Citrus medica* L., **B**. *Docynia indica* (Colebr.) Decne.,
C. *Myrica esculenta* Ham., **D**. *Prunus salicina* Lindl.,
E. *Rhus semialata* Murr., **F**. *Viburnum foetidum* Wall.


A


B


C


D


E


F

Plate 15 : Edible Fruits

A. ***Calamus tenuis*** **Roxb.,** **B.** ***Citrus maxima*** **(Burn.) Merr.,**
C. ***Garcinia pedunculata*** **Roxb.,** **D.** ***Prunus nepalensis*** **Steud.,**
E. ***Tamarindus indica*** **L.,** **F. Fruit beer display for sale**

Plate 16 : Edible Plant Parts Display For Sale

A. Shoot of *Arundinaria callosa* Munro, **B.** Young shoot of *Calamus* sp,
C. Fruit of *Hibiscus sadbariffa* L., **D.** Fruit of *Leucana glauca* Benth.,
E. Spadix of *Musa* spp, **F.** Pod of *Vicia faba* L.

Plate 17 : View Of Makeshift Market In Different Localities Of Ukhrul District

A. Selling of leafy vegetables,
B. Selling of *Esholtzia communis* (Coll. & Hemsl.) Diels,
C. Selling of leafy spices & vegetables,
D. Selling of *Colocasia* sp,
E. Selling of tender bamboo shoot,
F. Selling of *Euryale ferox* Salisb., fruits of *Oroxylum indicum* Vent.

A

B

C

D

E

F

Plate 18 : Edible Fungi

A. ***Lactarius princeps*** **Berk.,**

B. ***Lentinula edodes*** **(Berk.) Pegler,**

C. ***Ramaria sanguine*** **(Pers.) Quel.,**

D. ***Termitomyces clypeatus*** **Heim.,**

E. ***Termitomyces eurrhizus*** **(Berk.) Heim.,**

F. Interview with woman vendor in ***Lambui*** **market.**

Plate 19 : Ethnomedicinal Plants

A. ***Debregeasia longifolia*** **(Burm.f.) Wedd.,** **B.** ***Dendrobium denudans*** **D. Don,**

C. ***Pogostemon benghalensis*** **kuntze,** **D.** ***Scutelleria discolor*** **Colebr.,**

E. ***Swertia chirata*** **Buch.Ham.**

Plate 20 : Ethnomedicinal Plants

A. ***Platycodon grandiflorum*** **(Jacq.) A. DC.,** **B.** ***Pratia nummularia*** **Benth.,**
C. ***Stephania hernandifolia*** **(Willd.)Walp.,** **D.** ***Tacca laevis*** **Roxb.,**
E. ***Taxus baccata*** **L.,** **F.** ***Thalictrum foliolosum*** **DC.**


A


B


C


D


E


F

Plate 21 : Ethnomedicinal Plants

A. ***Clerodendrum colebrookianum*** **Walp.,** **B.** ***Entada pursaetha*** **DC.,**
C. ***Hibiscus sabdariffa*** **L.,** **D.** ***Homskioldia sanguine*** **Retz.,**
E. ***Paris polyphylla*** **Sm.,** **F.** ***Pavetta indica*** **L.**


A


B


C


D


E


F

Plate 22 : Ethnomedicinal Plants

A. Woman collecting *Crassocephalum crepidiodes* S. Moore for medicinal uses,

B. *Tangkhul* man showing medicinal plant *Pouzolzia viminea* Wedd.

C. Herbal medicine kept ready for sale,

D-F. Interview with different healers during the study.

A

B

C

D

E

F

Plate 23 : Dye Yielding Plants

A. ***Bixa orellana*** **L.,**
B. ***Mallotus philippensis*** **(Lam.) Mull.,**
C. ***Isodon hispidus*** **Benth.,**
D. ***Mahonia manipurensis*** **Takeda.,**
E. ***Pasania pachyphylla*** **Schot.,**
F. ***Strobilanthus cusia*** **Kuntze**

Plate 24 : Fish Poisoning Plants

A. ***Dillenia indica*** **L.,**

B. ***Engelhardtia spicata*** **Blume,**

C. ***Juglans regia*** **L.,**

D. ***Millettia pachycarpa*** **Benth.,**

E. A man showing stem of ***Acacia pinnata*** **Dalzell & A. Gibson,**

F. Girls practicing fish poisoning by using plant parts of ***Millettia pachycarpa*** **Benth.**

Plate 25 : Plants Used For Hair-Care

A. *Artemisia nilagarica* **(C.B. Clarke) Pamp.,** **B.** *Boehmeria sidaefolia* **Wedd.,**
C. *Cymbopogon citratus* **Stapf,** **D.** *Phyllanthus emblica* **L.,**
E. *Perilla frutescens* **Britton,** **F.** *Sapindus emarginatus* **Vahl.**


A


B


C


D


E


F

Plate 26 : Different Carrying Baskets And Household Equipments Made Of Bamboo And Cane

A. ***Kharing*** **(Transporting basket),** **B.** ***Lungkai*** **(Transporting basket),**
C. ***Bangrah*** **(Transporting basket),** **D.** ***Changuei*** **(Traditional shield),**
E. ***Tabu*** **(Clothe keeping basket),** **F.** ***Chum*** **(For storing** ***Oryza sativa*** **L.)**

Plate 27 : Different Household Equipments Made Of Bamboo And Cane

A. ***Luk*** **(Container for keeping grains),** **B.** ***Kamu*** **(Basket for storing dry fish),**
C. ***Tebam*** **(Basket for keeping thread),** **D.** ***Paipek*** **(Basket for keeping caught fish),**
E. ***Yamkok*** **(Winnowing plate),** **F.** ***Liphang*** **(Traditional dinning table)**


A


B


C


D


E


F

Plate 28 : A. Traditional helmet (*Luiho pasi*),
B. Bamboo basket (For keeping dry fish for sale),
C. Bamboo mug (Made from *Dendrocalamus giganteus* Munro),
D. An old man knitting cane basket,
E. An old woman knitting bamboo basket,
F. *Tangkhul* lady carrying grains in *Kharing & Luk*

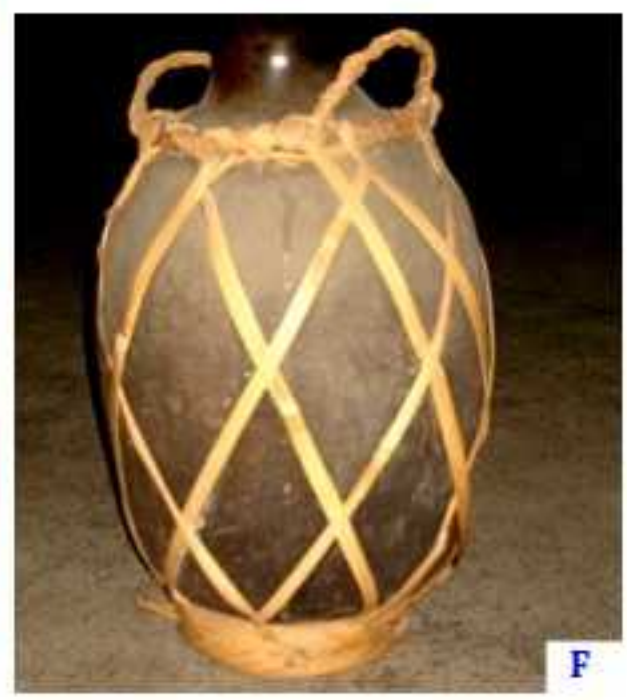

Plate 29 : A-D. Diffrent shapes and sizes of *Lagenaria seciraria* (Molina) Standl. spp. for domestic uses, E. Drinking rice beer from *Khorshon* (Gourd rice beer pot), F. Traditional rice beer pot

Plate 30 : A. ***Tingteila*** **(Traditional stringed instrument),**
B. Different agricultural implements,
C. Decoration items made from bamboo sp
D-E. Decoration items made from ***Gmelina arborea*** **Roxb.,**
F. Flower vase made from ***Dendrocalamus giganteus*** **Munro**

Plate 31 : Plants Of Miscellanous Uses

A. *Aconitum nagarum* stapf ., **B.** *Coix lacryma-jobi* L.,
C. *Curcuma caesia* Roxb. **D.** *Averrhoa carambola* L.
E. *Duabanga grandiflora* Walp., **F.** *Phrynium capitatum* Wild.