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RESEARCH ARTICLE

STUDY ON MEDICINAL PLANTS USED BY MEITEI COMMUNITY OF BISHNUPUR DISTRICT, MANIPUR

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ABST RACT

Extensive field trips were organized for collecting the plant species during their flowering & fruiting stages from various field trips and interviews of the local medicine men and village elders among the *Meitei* Community of Bishnupur district of Manipur. Survey conducted revealed the uses of 106 plant species belonging to 55 families and their use in curing different ailments; 21 plant species of monocotyledons and 85 species to that of dicotyledons. The communities still believes in the traditional use of herbal medicine and maintain herbal gardens in their own homestead. With the advent of modernization and lack of interest by the younger generation, the traditional knowledge of this community in on the verge of extinction and will ultimately lead to loss of valuable knowledge. Therefore, the Ethno botanical study taken should help in conserving traditional knowledge and can ultimately lead to base line of the discovery of new drugs for the benefits of human being at large.

INTRODUCTION

Natural environment has been a source of medicinal agents for thousands of years, since healing with plants date back probably to the evolution of the *Homo sapiens*. Since ancient times, plants have been used by men as herbal medicines. Ayurveda has a 5000 years old rich heritage of the use of plants in the treatment of various human ailments as alternative medicines**.** Human beings and plants share an age old relationship. Worldwide trend towards the utilization of natural plant remedies has created an enormous need for information about the properties and uses of the medicinal plants. In the recent past, there is a resurgence of interest in the study and use of medicinal plants**.** It is estimated that a total of 60% of the world population and 80% of the population in developing countries depend on traditional medicines mostly plant drugs for their primary health care needs (Baker *et al*., 1995; Shrestha & Dhillon, 2003). Studies and documentation on ethnobotanical and traditional knowledge on medicinal plant uses has been considered as a high priority, sometimes leading to the discovery of crude drugs or contributing to economic development (Cox and Ballick, 1994; Dutta and Dutta, 2005; Hamil *et al*., 2000; Pieroni, 2000; Cox and Ballick, 1996). Primitive people have used plants to cure a variety of ailments but they keep no records and the information is mainly passed on verbally from generation to generation. The traditional ethno medicinal knowledge has been descending from generation to generation with constant updating through trial and error method. World Health Organization (WHO) has shown great interest in documenting the use of medicinal plants from tribes in different parts of the world. Traditional herbal medicine is an important component of primary health care system in developing countries like India. They are considered to be safe, effective and inexpensive, for which there is a global trend for the revival of traditional herbal medicine. Screening of medicinal herbs used by different ethnic groups or communities has now become a potential source for isolation of bioactive compounds (Dev, 1976).Some notable works toward the knowledge of medicinal plants has been carried out by number of research workers in different parts of North east India (Borthakur, 1946; Sharma *et al*., 2001; Das and Dutta, 2007; Das, *et al*., 2008; Das, *et al*., 2010; Singh, 2011; Pfoze, *et al*., 2012).

Manipur, which lies in the North-eastern part of India, is rich in its flora and fauna and is one of the hotspots of biodiversity ranging from tropical to sub-tropical and temperate deciduous forests reflecting on the region's rich floral diversity as well as high degree of endemism including valuable medicinal plants. Even today, people not only in the rural areas but those living in the urban areas are also using these traditional medicines, and they give first preference to herbal treatments by consulting the medicine men. The state is inhabited by numerous aboriginal tribes with *Meiteis* being the dominant community. All the ethnic groups used a large number of wild and cultivated plants for the treatment of various ailments, thus a considerable amounts of information on medicinal plants will be available with these communities. Bishnupur District is an administrative district of Manipur, with its Headquarters at

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Bishnupur *(http:// bisnupur.nic.in; www.whereincity.com)*. This district has the smallest area in the state with population density of about 2,40,363(8.83%), according to 2011 Census. The district is rich in vegetation which is varied in character. Further, tourist attractions are Keibul Lamjao National Park, Loktak Lake and Loukoipat Ecological Park. Bishnupur in Manipur is also famous for it's chiselled stoneware. The *Meiteis* are the major dominant community in the district but besides the *Meitei* the predominant community of the district, there are Muslims, Nagas, Zou, Kom, Vaiphei, Gangte, etc. Fishing and stone chiseled crafts are the major occupation of the people of this district. Loktak Lake in this district provides the major source of income. Road communication of the district is not adequate. The people of the district still find it difficult to travel to city for basic health care facilities and as such they depend on the available biodiversity for their daily need to cure ailments. They still practices herbal medicines and are transfer knowledge orally from generation to generation. Therefore, the present investigation was carried to explore the medicinal plants used by the *Meitei* community of Bishnupur District, which may prove to have potential traditional knowledge for the benefits of humankind at large.

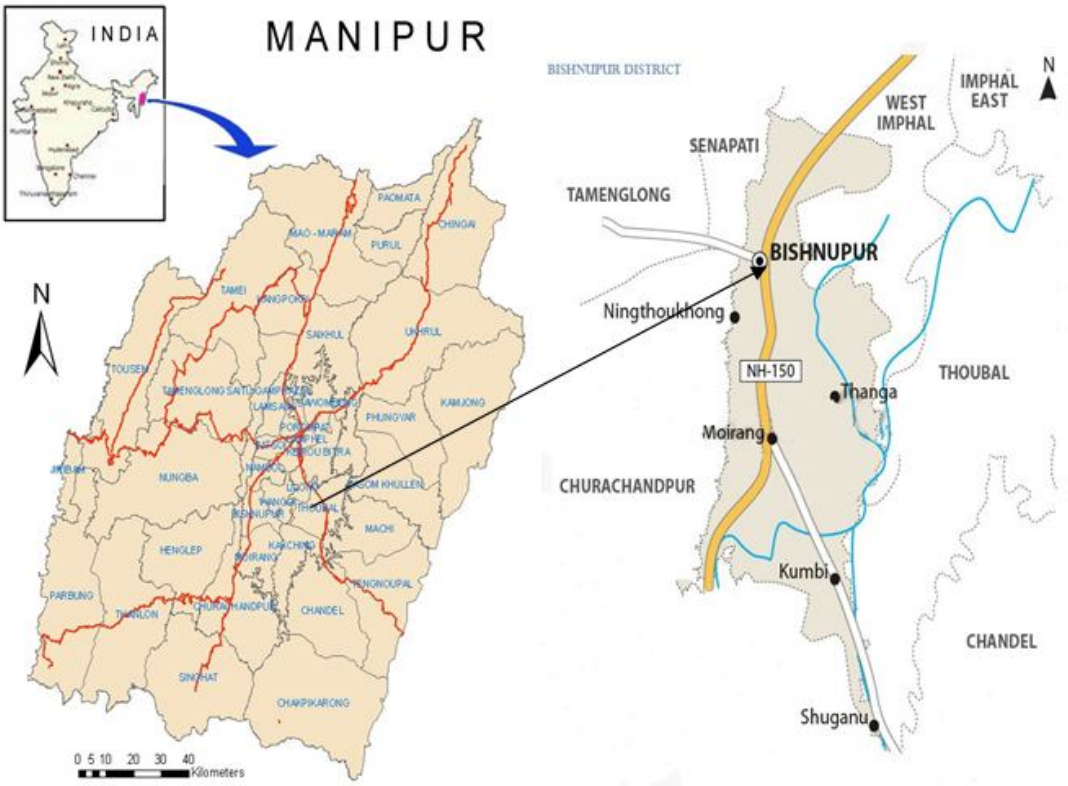


Fig. 1. Detailed map of the study area

ABOUT THE MEITEI COMMUNITY

The *Meiteis* are the majority ethnic group of Manipur, and they are the original people of Manipur and sometimes referred to as Manipuris by outsiders *(http:// bisnupur.nic.in; www.whereincity.com)* . The word "*Meitei"* and "*Meitheis"* by Englishmen is a word invented by the enemies of *Meetei* literature and culture which are very ancient and unique. They used to believe the worshipping of forefathers. They also believe that they are the descendants of God. There is a common saying among the *Meitei's* society that "Oldness is Godliness" (*Mee Ahal Laini*). The majority of the Meiteis follow Vaishnavite Hinduism, mixing it with their ancient Meitei religion, known as "Sanamahi Laining. From the ancient era, *Meeteis/Meiteis* had their own unique style of using surname as well; it was entirely different from other communities in the world. *Meiteis* love dancing and they perform different kind of dances which are derived from the Lai Haraoba of Sanamahi religions. *Meitei* people are also warriors and they love martial arts. The language used is called Meitei-lon. It belongs to the Tibeto-burman family of languages. 'NupiKeithel' are markets run by Meitei women only, the most prominent one being the royal market, Sana Keithel (also known as ImaKeithel) in Imphal. Agriculture is the main occupation for their livelihood and they are very hard working people. Though many *Meitei* reside in rural areas, living in the remote corner, rich in indigenous knowledge. They rely on traditional system of medicine which is the cheapest way. They still believe in healing power of herbal practitioners locally known as '*Maibas*' (male) and '*Maibees*' (female) practitioners. In the recent years, traditional medicines are gaining popularity among the community, but is also fast depleting due to rapid modernization and lack of interest of the younger generation. Therefore, this study has been taken up to bridge the gap of research and to document and preserve the rich indigenous knowledge of the community which is on the verge of extinction.

MATERIALS AND METHODS

Extensive field trips were organized for collecting the plant species during the flowering and fruiting seasons. During the field study, local medicine men *Maibas* or *Maibees* or village elders are interviewed, vernacular names, parts used, mode of preparations of medicine were noted/ recorded from some selected villages (40Nos.) and taking them to the field for the collection of plants. Herbarium of these plant species were prepared by following the standard methods (Jain & Rao, 1977). 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, 1872-1892); Flora of India, vol. 1– 3 (Sharma, *et al*., 1993); Flora of Assam, vol. 1-4, (Kanjilal, *et al*., 1934-1940); and vol. – 5 (Bor, 1940); Flora of Lushai Hills, (Fisher, 1938); Flora of India, vol. 12 – 13 (Hajra, *et al*., 1995); Flora of Manipur (Singh, *et al.*, 2004).

Besides these floras, in order to match the specimens for further confirmation and to identify the plants up to species level, the herbarium sheets were taken to the Botanical survey of India, Eastern Circle, Shillong for consultation & confirmation of the identification. The voucher specimens were deposited in the Herbaria of Department of Ecology and Environmental Science, Assam University, Silchar for future reference.

RESULTS

Enumeration of species along with their medicinal uses, local name, family, habits, parts uses against diseases and finally plants are arranged in alphabetical order, and given as tabular form :

Table 1. Medicinal plants used by the Meitei community

Scientific name	Vernacular name	Family	Habit	Parts used	Medicinal uses
Acorus calamus L.	Ok hidak	Araceae	A rhizomatous herb	Rhizome	Rhizome is used for worm deworming, also eaten in cough and chest congestion.
Aegle marmelos (L.) Correa. ex. Roxb.	Heikhagok	Rutaceae	Middle sized tree	Fruit and leaf	Fruit is stomachic, used as cooling agent, improves digestion. Leaf juice is taken orally against cold.
Ageratum conyzoides L.	Khongjai -napi	Asteraceae	A herb	Leaf	Leaves are used as lotion for hair wash in local preparation *Chingi*, also taken in dysentery and as nervine tonic.
Allium ascalonicum L.	Meitei tilhou	Liliaceae	A bulbous herb	Whole plant	Whole plant is boiled with red sugar and given in dog and snake bite, also given to women after child birth
Allium hookerii Thw.	Maroi napakpi	Liliaceae	A bulbous herb	Whole plant	Plant is used in reducing high blood pressure.
Allium odorum Lour.	Maroi nakupi	Liliaceae	Herb with thick fleshy root	Whole plant	Boiled juice is given in stomach complaints, old wounds and also applied in forehead during high fever.
Aloe barbadensis Mill.	Ghrita -kumari	Liliaceae	A succulent plant	Leaf	Soft paste of the leaves are used as skin lotion, also as liver tonic and applied in dizziness.
Alpinia galanga Willd.	Kanghoo	Zingiberaceae	A robust herb	Rhizome	Rhizome is cooked with *Chana punctatus* and given to cure piles, cough.
Alocasia macorrhiza (L.) Schott.	Yendem	Aracaceae	A herb with rhizomatous corm	Petiole	Decoction of petiole is given in anaemia, also used after child birth.
Alternanthera sessilis L.	Phakchet	Amaranthaceae	An aquatic herb	Leaf	Leaves are used in eruptive fever, boils and burns.
Amaranthus viridis L.	Chengkruk	Amaranthaceae	Herb	Shoot and root	Shoot paste is used as cooling agent in snake bite. Root also have the same effect.
Andrographis paniculata Nees.	Vubati	Acanthaceae	Erect annual herb	Leaf	Boiled decoction of leaves is given as remedy in asthma, chronic fever and bronchitis.
Annona squamosa L.	Sitaphal	Annonaceae	A climber	Fruit and leaf	Unripe fruit is anthelmintic, leaves have insecticidal property.
Artocarpus heterophyllus Roxb.	Theibong	Moraceae	Evergreen tree with milky juice	Seed	Fresh seed is used for easy digestion and prevent diarrhoea.
Artemisia nilagirica (C.B. Clarke) Pamp.	Leibak-ngou	Asteraceae	An aromatic undershrub	Leaf, flower and bark	Leaves are used in local preparation *Chingi* and applied as hair lotion and as tonic, also used as insect repellent.
Asparagus racemosus Wild.	Nungarei	Liliaceae	Creeper with long needle like leaf	Leaf	Leaves are given as remedy in diabetes.
Averrhoa carambola L.	Heinoujom	Averrhoaceae	Small tree	Fruit	Ripe fruit is boiled along with sugar and given in kidney stone case, unripe fruit is given in bleeding piles
Azadiracta indica A.Juss.	Neem	Meliaceae	A middle to large sized tree	Leaf	Boiled decoction of the leaves are used for bath in skin diseases. Dried leaves are used as insect repellant.
Bauhinia purpurea L.	Chingthrao angangba	Caesalpinaceae	A moderate sized deciduous tree	Flower	Boiled decoction of the flower is used as remedy in cough, and piles.
Blumea densiflora DC.	Karpur	Asteraceae	Erect annual herb	Leaf	Leaves are used as ingredients in local hair lotion *Chingi*, for women, and as insect repellant.
Cajanus cajan L. Mill.sp.	Mairongbi	Fabaceae	Erect shrub	Leaf	Leaf juice is used in gurgling during cold & cough.

Calotropis procera R.Br.	Anggot	Asclepiadaceae	A large shrub or small tree	Leaf	Mature leaf is burnt in flame and grind to powder and applied in toothache, ear infection.
C*annabis sativa* L.	Ganja	Cannabinaceae	A large shrub	Leaf and flower	Leaves and flowers are used in diarrhoea and dysentery.
Capsicum annum L.	Morok	Solanaceae	Herb	Fruit	Boiled fruits with red sugar is taken as a good remedy for piles.
Carica papaya L.	Awathabi	Caricaceae	Herbaceous tree	Fruit	Ripe and unripe fruit is eaten during dog and snake bite.
Cassia fistula L.	Chahui	Leguminosae	Deciduous medium tree	Bark and fruit	Bark extract is used in liver complaints, Fruit is taken in chronic fever.
*Centella asiatica (*L.) Urban	Peruk	Apiaceae	Perennial herb	Whole plant	Whole plant either raw or decoction is given as tonic for brain, and in diarrhea, and leprosy.
Cinnamomum tamala Nees & Eberm.	Tejpata	Lauraceae	A medium sized evergreen tree	Leaf	Fresh juices of the leaves are used as remedy in diabetes.
Cinnamomum zylanicum Breyn.	Ushingsa	Lauraceae	A bushy plant	Bark	Pounded bark is applied in toothache and gum infection.
Citrus aurantifolia (Christm.) Swingle	Champra	Rutaceae	A large bushy plant	Fruit	Juice of the fruit along with honey is used as remedy for diabetes.
Clerodendrum serratum Spreng.	Moirang khanum	Verbenaceae	A large shrub	Leaf	Leaf is eaten to reduce high blood pressure, also used as worm repellant.
Clitoria ternatea L.	Aparajita	Papilonaceae	Creeper	Root	Crushed root is taken along with honey in goiter.
Coix lacryma jobi L.	Chaning	Poaceae	Tall or perennial herb	Root & grain	Root and grain of the plant is taken as blood purifier, and for menstrual troubles.
Crataeva nurvala Buch.-Ham.	Loiyumba lei	Capparidaceae	Large tree	Leaf	Fresh juices of the leaves are taken in stomach disorders, urinary complaints.
Crasscephalum crepidioides Benth. Moore.	Terapabi	Asteraceae	Succulent herb	Leaf	Lotion of leaves used in mild stomachic, also used to prevent nose bleeding.
Cymbopogon citratus Staf.	Kouna	Poaceae	Aquatic herb	Leaf	Leaves are used as insect repellant, juice is given in diabetes, ingredient for local hair lotion.
Cynodon dactylon (L.) Pers.	Tingthou	Poaceae	A perennial grass	Whole plant	Whole plant is smeared and applied in fresh injuries. Fresh juice is also taken as remedy in diarrhoea.
Dactyloctenium aegypticum Beauv.	Pungphai	Poaceae	Annual herb	Whole plant	Fresh juice is applied in fever also given in small pox.
Datura metal L.	Sagol-hidak	Solanaceae	Undershrub	Seed	Seed is pounded and applied on the snake & dog bite area.
Dioscora alata L.	Ha	Dioscoraceae	Large climber	Tuber	Tuber is eaten as remedy for leprosy, diarrhea and applied to prevent nose bleeding.
Drymaria cordata Willd.	Tandon-panbi	Caryophyllaceae	A glabrous diffuse herb	Leaf	Boiled leaves are taken during dysentery and diarrhoea.
Eclipta prostrata L.	Oochi -sumbal	Asteraceae	Annual herb	Root and leaf	Leaf or root juices are given in fever, cough and also applied in scorpion sting.
Elsholtzia blanda Benth.	Kanghu -man	Lamiaceae	A perennial slender undershrub	Leaf and inflorescence	Fresh leaves and inflorescences are given in dry cough.
Emblica officinalis Gaertn	Heikru	Euphorbiaceae	Medium sized tree	Fruit	Fruits are taken daily as a good remedy for urinary trouble, diabetes and cold and cough.
Enhydra fluctuans Lour.	Komprek- tujombi	Asteraceae	Glabrous herb	Shoot and leaf	Fresh extract of shoot is prescribed as antidote to food poisoning, diarrhea and dysentery.
Eryngium foetidum L.	Awa-phadigom	Apiaceae	Highly aromatic herb	Whole plant	Plant is taken as vegetables against paralysis and epilepsy.
Eupatorium birmanicum DC.	Langthrei	Asteraceae	An undershrub	Leaf	Boiled decoction of the leaves are used as remedy in burning sensation of stomach, for nervous system, over excitement.
Euphorbia hirta L.	Pakhangba maton	Euphorbiaceae	A small herb	Whole plant	Whole plant is taken in asthma, dysentery and as anthelmintic.
Ficus palmata Forsk.	Heibam	Moraceae	A deciduous tree	Fruit	Fruit is used in diseases of lungs and urinary bladder.
Ficus religiosa L.	Sanakhongnang	Moraceae	Small tree	Bark	Bark infusion is used in scabies.
Flacourtia jungamos Lour.	Heitroi	Flacourtiaceae	Small evergreen tree	Fruit	Fresh fruit paste is applied in stomach disorder like diarrhea, and dysentery.

Garcinia pedunculata Roxb.ex Buch.	Heibung	Guttiferae	A small tree	Fruit	Sun dried slice of fruit are given in dysentery.
Hisbiscus cannabinus L.	Sougri	Malvaceae	A tall erect undershrub	Leaf and seed	Cooked leaves are eaten as remedy for constipation and cough. Seeds are considered to be stomachic.
H. esculentus L.	Bhelendr	Malvaceae	Erect undershrub	Fruit	Fresh fruit is take as brain tonic.
H. rosa-sinensis L.	Jabakusum	Malvaceae	A bushy plant	Leaf	Leave are used as ingredient in local hair lotion, *Chingi* for women.
H. sabdariffa L.	Silo sougre	Malvaceae	A tall erect undershrub	Succulent calyx	Succulent calyx boiled in water is used as tonic for blood. Also used in the preparation of local hair lotion *Chingi.*
Houttuynia cordata Thunb.	Toning-khok	Saururaceae	Perennial creeping herb	Leaf and root	Boiled extract of leaves and root is given in muscular sprain. Leaf extract is also given in dysentery.
Hydrocotyl javanica Thunb.	Awa-peruk	Apiaceae	Perennial herb	Whole plant	Plant is given in stomach ulcer, and as liver tonic.
Jatropha curcus L.	Awakege	Euphorbiaceae	Large shrub	Leaf	Latex is applied to boils for early suppuration and skin sores, and leprosy.
Kyllinga brevifolia Rottb.	Shambang kouthum	Cyperaceae	Perennial herb	Rhizome and leaf	Rhizome along with honey in given in dry cough.
Lantana camara L.	Nongbal lei	Verbenaceae	Straggling shrub	Leaf	Leaf pastes is applied externally to prevent bleeding in fresh cuts and wounds.
Leucas plukenetti (Roth) Spreng.	Mayang lenbum	Lamiaceae	Annual branched herb	Leaf and flower	Leaf juice is applied in sinus, cold and cough.
Melothria purpusilla Blume	Lamthabi	Cucurbitaceae	Herb with slender branches	Whole plant	Boiled decoction of the plant is taken as remedy in jaundice, and fever.
Mentha arvensis L.	Nungshi-hidak	Lamiaceae	A strongly aromatic herbaceous plant	Whole plant	Crushed juice of the plant is used in stomachic and antispasmodic.
Mikania micrantha H.B.K.	Oori-hingchabi	Asteraceae	Twiners	Whole plant	Paste of the plant is applied in area of snake bite, itching and wound.
Mimosa pudica L.	Kangphal ikaithabi	Mimosaceae	A prickly undershrub	Leaf	Boiled decoction of leaves is taken in piles, urinary disorder and sinus.
Meyna laxiflora Robyns	Heibi	Rubiaceae	Tree	Leaf and fruit	Leaf and fruits are used as blood purifier. Juice of ripe fruit is applied as skin lotion.
Momordica charantia L.	Karon akhabi	Cucurbitaceae	Climber	Fruit	Used as vegetable in high blood pressure
Musa paradisiaca L.	Laphoi	Musaceae	Stoliniferous herb	Fruit	Unripe fruit is taken in dysentery.
Nelumbo nucifera Gaertn.	Thambal	Nelumbonaceae	Large perennial aquatic herb	Whole plant	Whole plant is eaten in diarrhea, liver and cardiac complaints, also used as remedy in bleeding piles.
Nicotiana tobacum L.	Hidak mana	Solanaceae	Shrub	Leaf	Fresh leaves are given in ulcers, and as remedy in cancer as claimed by the Meitei medicine man. Grounded leaves along with mustard oil are given as cooling agent in scalp.
Nyctanthes arbor-tristis L.	Singgarei	Nyctanthaceae / Oleaceae	A shrub or small tree	Leaf	Boiled decoction of the leaves are used in chronic fever and also applied in skin disease.
Ocimum americanum L.	Mayangba	Lamiaceae	Aromatic herb	Leaf	Leaf juices is given in fever, cough and colic. Leaf past is used in parasitical skin diseases.
O. basilicum L.	Naoseklei	Lamiaceae	Aromatic herb	Leaf	Leaf is juice is given in throat complaints and ringworm.
O. sanctum L.	Tulsi	Lamiaceae	Herb	Leaf	Leaf juice along with honey is given in high fever, cold and cough.
Oenanthe javanica Blume	Komprek	Apiaceae	A glabrous herb	Leaf	Leaf used as appetizer and to stimulate digestive function.
Oroxylum indicum Vent.	Shamba	Bignoniaceae	A middle sized tree	Bark	Bark soaked in water is given in diabetes, muscular pain and wound.
Oxalis corniculata L.	Yensil	Oxalidaceae	Diffuse herb	Whole plant	Leaf juice is used as cooling and in stomach trouble, piles and colic pain.

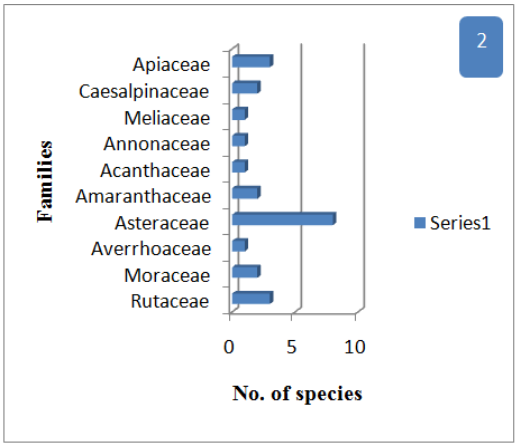
Persicaria chinensis L.	Anom yensil	Polygonaceae	Diffuse herb	Leaf	Leaves extract used as tonic, and used for healing wounds.
Persicaria perfoliata L.	Lilhar	Polygonaceae	Herb	Whole plant	Leaves are smashed and applied on fresh wounds and snake bite.
Phyllanthus amarus Schumach & Thonn.	Chakpa heikru	Euphorbiaceae	Annual herb	Whole plant	Boiled decoction of the whole plant is used for stomachic, in diarrhea and jaundice.
Phytllanthus ocidus L.	Gehori	Euphorbiaceae	A small deciduous tree	Root and seed	Roots and seeds are cathartic, antidote to Viper venom.
Plantago erosa Wall.	Yempat	Plantaginaceae	Herb	Whole plant	Warm leaves are applied externally on boils and fresh injuries, also given in fever.
Plumeria rubra L.	Khagi leihao	Apocynaceae	A soft wooded small tree	Leaf and root	Juice of leaves and root is given in stomach complaints. Milky latex is applied in itches, rheumatism.
Plumbago zeylanica L.	Tel hidak	Plumbaginaceae	A perennial rambling herb	Root and seed	Seeds are boiled in water and given to get relief from muscular pains. Roots are abortifacient, and used in diarrhea and skin diseases.
Polygonum barbatum L.	Yelang	Polygonaceae	A soft herb	Roots, and seed	Root is astringent and cooling.Seeds are used as tonic.
Portulaca oleraceae L.	Leibak kundo	Portulaceae	Prostrate succulent herb	Leaf and stem	Boiled decoction of leaves and stem are used in kidney and bladder disease, gum and teeth complaints.
Psidium guajava L.	Pungdon	Myrtaceae	A small tree	Leaf and Fruit	Young leaves and fruit is given in diarrhea.
Punica grantum L.	Kaphoi	Punicaceae	Small tree	Fruit	Bark of the fruit is grounded and eaten to control cough and piles.
Pyrus pashia Buch.-Ham.	Naspati	Rosaceae	Medium sized tree	Fruit	Raw fruit is used in the treatment of dysentery, juice have antibacterial property.
Rhus hookeri Shani & Bahadur.	Heimang	Anacardiaceae	Medium size tree	Leaf and fruit	Leaf is used in colic pain, fruits prevent diarrhea and dysentery.
Rumex vesicarius L.	Torong khongchak	Polygonaceae	Glabrous herb	Leaf	Juice along with honey is given in any urinary diseases / trouble.
Scutellaria discolor Colebr.	Yenakhat	Lamiaceae	Perennial herb	Leaf	Leaves extract is given in urinary disorder.
Sesamum indicum L.	Thoiding	Pedaliaceae	Erect annual shrub	Seed and leaf	Leaf and seeds are grounded and taken in urinary complaints, pile. Fresh leaves are also used in kidney and bladder trouble.
Setaria italic (L.) Beauv.	Hoop	Poaceae	Annual herb	Grain	Grain is externally used in rheumatism.
Sida cordifolia L.	Uhal	Malvaceae	Small undershrub	Leaf and root	Decoction of leaves and root is given as remedy for tuberculosis and rheumatism
Solanum nigrum L.	Leipung khangga	Solanaceae	A coarse undershrub	Leaf and Berries	Leaf or berries are eaten as remedy in tuberculosis, fever, eye, skin, and heart trouble.
Solanum torvum Swartz	Singkhangga	Solanaceae	A shrub	Fruit, leaf and root	Fruit or leaves are eaten in cough, tonsillitis, liver and spleen enlargement.
Syzygium cuminii (L.) Skeels	Jam	Myrtaceae	Evergreen tree	Seed	Seeds grinded and boiled in water, is used to cure diabetes.
Tamarindus indica L.	Mangge	Caesalpinaceae	Large tree	Leaf	Leaf is boiled in water and pinch of salt is added to be given in fever.
Trapa natans var.bispinosa L.	Heikak	Trapaceae	A floating aquatic herb	Fruit	Fruits are eaten as remedy for diabetes and also as brain tonic.
Zanthoxylum acanthopodium DC.	Mukthrubi	Rutaceae	Straggling thorny shrub	Leaf	Leaves are cooked and eaten in chronic fever, cough and bronchitis.
Zingiber officinalis Rosc.	Shing	Zingiberaceae	Rhizomatous herb	Rhizome	Fresh rhizome is eaten in dry cough, ulcers and prevent from cancer.
Zizania latifolia Staf.	Ishing kambong	Poaceae	A perennial aquatic plant	Culm	Infected culm forming galls eaten raw, as digestive and also rich in protein.
Zizyphus mauritiana Lam.	Boroi	Rhamnaceae	Tree	Leaf and Fruit	Leaves and fruits paste are applied in scabies and throat troubles.

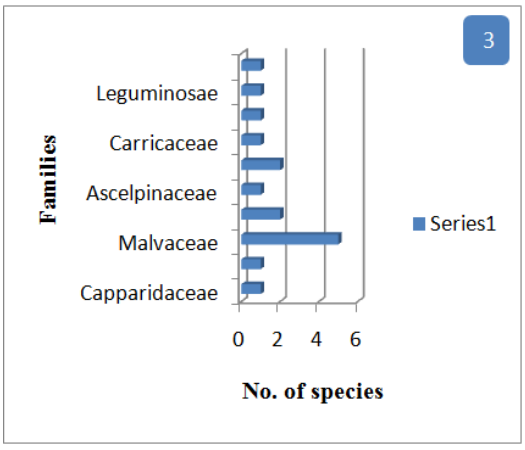
DISCUSSION

Survey conducted in the *Meitei* dominated different localities of Bishnupur district of Manipur, revealed the used of 106 plant species belonging to 55 families. They are used in curing different ailments like cold and cough, fever, diarrhea, dysentery, jaundice, tuberculosis, dog and snake bite, diabetes, piles etc. by applying them in their traditional method (Table: 1). The communities still believe and depend on the traditional practitioners for their common ailments. It was observed that 7 families belong to monocotyledons and 48 families belonging to dicotyledons (Table: 2) and used by the community.

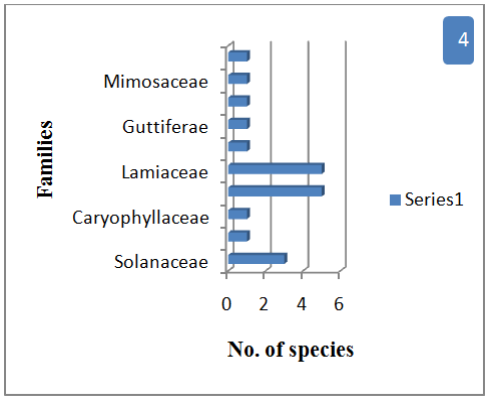
Table 2. No. of associated families to the medicinal plants used by the Meitei community

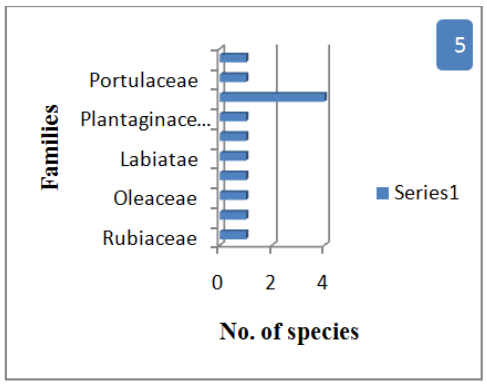
Plant groups	No. of medicinal plants	No. of families
Monocotyledons	21	7
Dicotyledons	85	48
Total	106	55





The family Asteraceae was found to be frequently used with 8 species followed by Malvaceae, Euphorbiaceae and Lamaiceae with 5 species each among the dicot (Fig.3-6) and Poaceae with 5 species followed by Alliaceae with 3 species among monocot (Fig.7). In the present investigation it is revealed that from the collected medicinal plants, leaves are found to be mostly used plant parts with 52 sps. followed by whole plant and root with 17 and 12 species respectively (Fig.8).





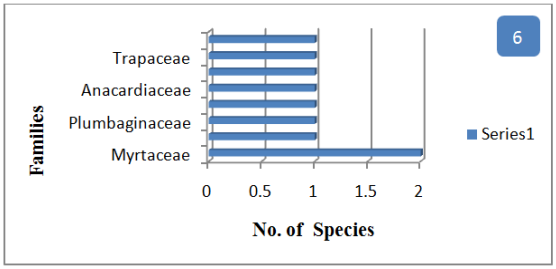


Fig. 3,4,5, 6. Diversity of plants among dicotyledons

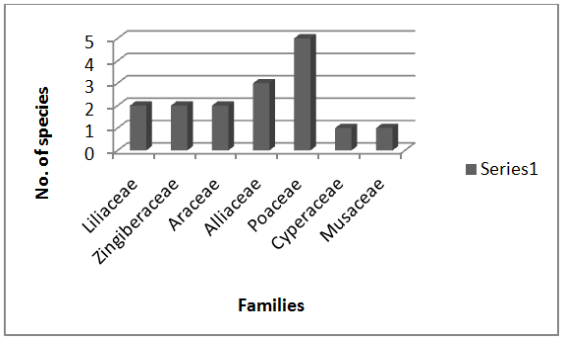


Fig. 7. Diversity of Medicinal plants among monocotyledons

It was also recorded that the most common diseases among the *Meitei* include common cold / fever / cough these are treated with 26 plant species used. Diarrhoea and stomach related problems are found to be second and third most common ailments they are treated with 14 and 12 plant species

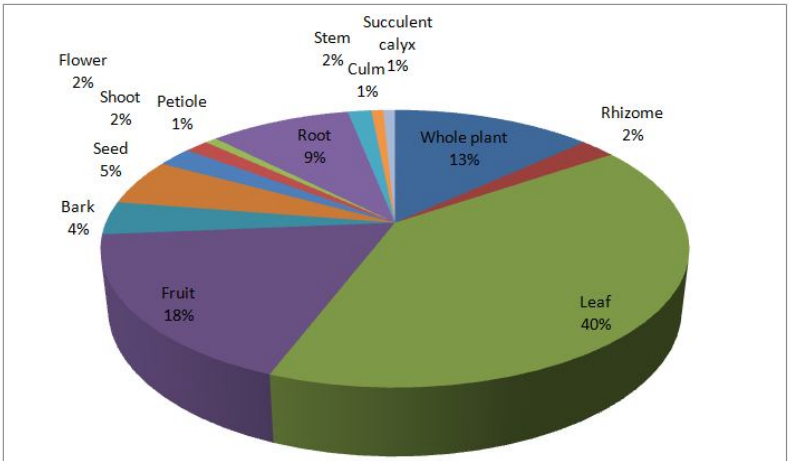


Fig 8: Medicinal use of plant parts.

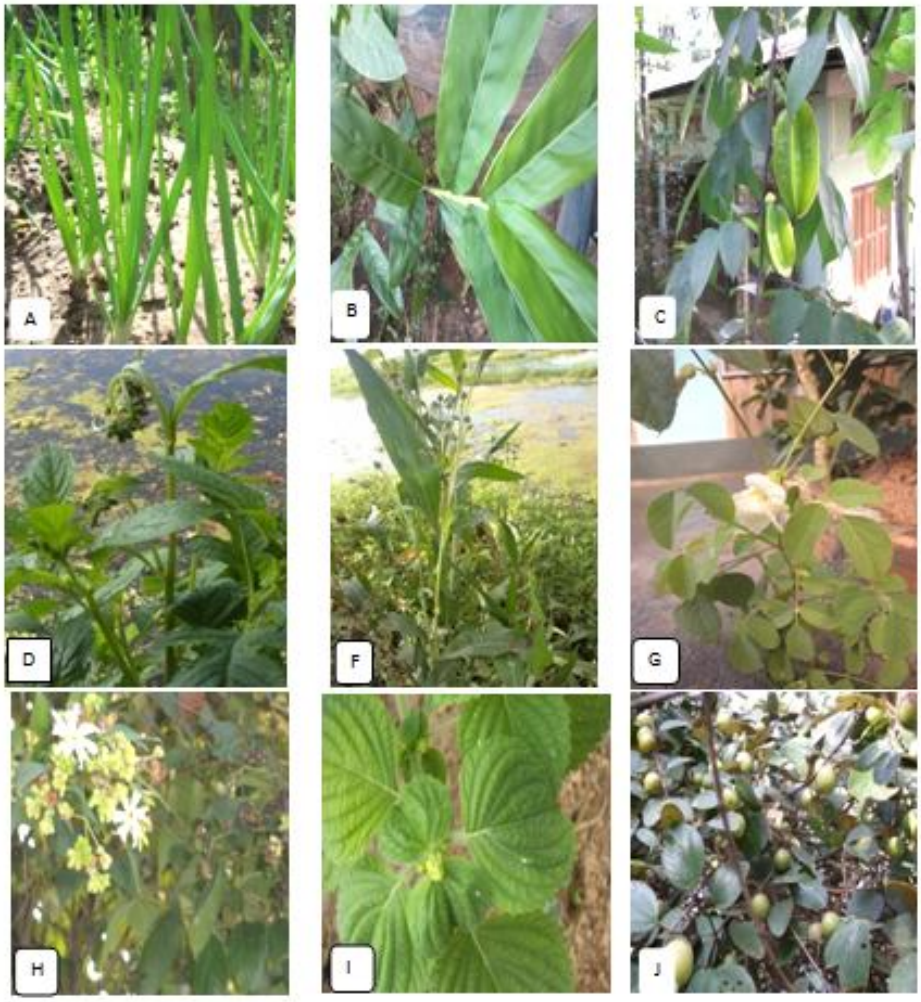


Fig.9. A. *Allium ascalonicum* L.; B. *Alpinia galanga* L. ; C. *Averrhoa carambola* L. ; D. *Crassocephalum crepidioides* Benth. Moore ; F. *Coix lacryma jobi* L.; G. *Clitoria ternatea* L.; H. *Nyctanthes arbortristis* L.; I. *Sesamum indicum* L. ; J. *Ziziphus mauritiana* Lam

respectively. The medicinal preparations were given by the local practitioners in the form of tablets, decoction or paste and in some cases fresh or raw plants are also eaten. The study also revealed that whether the medicinal plants used have any side effect or not need to be thoroughly investigated. Although there are examples where people are cured ith no side effects. In the present investigation it is noted that the *Meitei* community still believes in the traditional use of herbal medicine and maintain herbal gardens in their own homestead**.** This knowledge is passed down from generation to generation in oral form. With

the advent of modernization and lack of interest by the younger generation, the traditional knowledge of these communities are on the verge of extinction and will ultimately lead to loss of valuable indigenous knowledge. Therefore, this study has been taken up on a priority basis and it should help in conserving such knowledge and can ultimately lead to discovery of new drugs.

Conclusion

Medicinal plants play an important role in the healthcare of *Meitei* community. Uses of these plants for medicine has been known since time immemorial, and most of the plant parts used by them include leaf, fruit, whole plant, root, seed, bark etc. Therefore, they are collected in large quantities from the wild without proper management and as such decreasing their populations. Nowadays, the plant population is also destroyed from their natural habitat by other anthropogenic activities like deforestation, habitat encroachment through shifting cultivation, forest fires, etc. Thus, in order to protect the medicinal plants and indigenous knowledge for conservation and to ensure sustainable management, there is an urgent need for documentation, identification and prioritization of important medicinal plants, development of database and proper harvesting techniques, formulation of cultivation techniques for potential species, community participatory management and awareness programs in the state and in the region. It is also urgently require to prove their curative properties through phytochemical, pharmacological and biological investigation, validation of folklores claims of less known medicinal plants resources, finally through commercial cultivation can provide substitute for their livelihood and help to conserve plant genetic resources with special reference to medicinal and horticultural plants. Further, it is stated that indigenous knowledge is the life line of the human being and base line of drug discovery and food plants.

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