

Research Article

AN ETHNOBOTANICAL STUDY OF MISHING TRIBE LIVING IN FRINGE VILLAGES OF KAZIRANGA NATIONAL PARK OF ASSAM, INDIA

A. Kutum, *R. Sarmah and D. Hazarika

Department of Botany, D.R. College, Golaghat-785621, Assam, India

*Author for Correspondence

ABSTRACT

Plants and plant products are traditionally used among the tribal societies especially in different parts of northeast region of India from time immemorial. The livelihood system of Mishing tribe is traditionally dependent on forest resources. A total of 86 plant species belonging to 45 families has been recorded in the present study that used in various aspects of ethnobotanical importance by Mishing tribe of upper Brahmaputra valley of Assam. Among the families recorded, poaceae was the largest with altogether 11 species followed by euphorbiaceae and malvaceae with 5 species each and cluciaceae with 4 species.

Key Words: *Indigenous traditional knowledge, Medicinal plants, livelihood, Mishing tribe, ethnobotany, Kaziranga national park, Assam*

INTRODUCTION

Plants provide humankind with our most basic resources – food, medicines, fiber and a whole array of other useful products. The uses of natural herbal drugs whether traditional or modern, have originated directly or indirectly from folklore, and rituals known as ethnomedico-botany. The use of herbal medicine reflects the long history of human interaction with the environment. Different tribes inhabiting different parts of Assam with an intricate life totally dependent on the forest resources for their livelihood. *Houttuynia cordata*, *Terminalia chebula*, *Centella asiatica*, *Clerodendron colebrookianum*, etc. are commonly used medicinal plants of Mishing tribe in Assam. Local communities of northeast India are extremely knowledgeable about the local plant resources and their utilization (Sarmah, 2006, 2010; Sarmah *et al.*, 2006). The interesting as well as useful aspect of human dimension on the plant diversity is unique and affected by the nature and practices among different ethnic groups (Jain, 2000). Mishing tribal have been inhabiting in and different parts of Kaziranga national park.

Mishing is a tribal community belonged to Mongoloid group – a multitude of people that followed Austro-Asiatic races to India (Singh *et al.*, 1996). Livelihood system of Mishing people is traditionally dependent on forest resources (Figure 2). They are agriculturist, hard working and very much peace loving. But, in spite of their ceaseless toil and their peaceful co-existence with their Assamese non-tribal neighbors, they have remained literally and economically poor and backward. In Assam they are distributed in most parts of the northern bank of the river Brahmaputra. Mishings have distinct entities from the rest of the tribes of Assam with their special culture and tradition (Baruah and Kalita, 2007). The fringe tribal villages of Kaziranga national park are used depend on the forests for preparation of medicine, food, country-drinks, fibre, detergent, construction materials, fishing, implements, fire wood, spice, broom, agricultural implements, thatch-grasses and endless materials required for various purposes. Considering the importance of the traditional knowledge for the welfare of human being, a number of researches have been undertaken in this field in India from time to time. Some of the important publications include Arora (1990) on native food plants of the tribals in northeastern India. Sharma and Singh (2001) on ethnomedicinal study from Dadra, Nagar Haveli and Daman. Sarmah *et al.* (2008, 2011) and Sarmah and Arunachalam (2011) studied in the various aspects of traditional knowledge on forest products utilization pattern and their contribution to livelihood system from Arunachal Pradesh. These publications reveal lot of interesting findings on traditional knowledge in relation to biodiversity

Research Article

utilization and highlighted the significance of the study for the sustainable utilization of bioresources and their conservation.

Nevertheless due to gradual degradation of natural forests as well as strengthening the regulations by the park authority has forcing the life-style of these people to change. Hence, during last few decades, the choice of the people of this region has taking a distinct turn from actual forest based livelihood to partial dependence on natural products. Such a situation has increased the fear of extinction of many indigenous traditional knowledge (ITK) based information that built-up from centuries of experiences. The present paper tries to focus the ethnomedico botany of Mishing inhabiting in and around Kaziranga national park.

MATERIALS AND METHODS

The study was carried out in and around Kaziranga national park (26°30' N to 26°45' N to 93°08' E to 93°36' E) Located on the banks of the mighty Brahmaputra River in the far North East of India (Figure 1). Detailed field study was conducted during September 2007 to March, 2008 and ethnobotanically important plants were collected with interviewing the villagers of different age and sex. Local traditional healers (Ojhas) were also engaged during collection of plant samples. All relevant informations such as parts used, mode of preparation, used pattern along with morphological features, unsecured ecological information about their habitat were recorded during field work and herbarium were prepared. Plant samples were identified by comparing their morphology recorded during field trips as well as laboratory studies, with local floras and monographs and with the help of plant taxonomists. Finally by comparing the specimens with the Weed Herbarium Assam Agricultural University, Jorhat and Herbarium of Rain Forest Research Institute, Jorhat. The plants were described in the table according to alphabetic order of botanical name. The vernacular (Local) name (s) and the name of the families have also been provided along with the valid botanical name. The voucher herbarium were submitted to the Weed Herbarium of Assam Agricultural University, Jorhat.

RESULTS AND DISCUSSION

Ethnobotanical knowledge on forest resources is the local knowledge that is unique to a given culture or a human society. Traditional knowledge basically related with the socio-cultural activities of a particular community that included health care, food security and natural resource management in rural communities etc. A total 86 species belonging to 45 families ethnobotanically important plants were recorded in the present study. Among the families recorded poaceae was the largest with altogether 11 species followed by euphorbiaceae and malvaceae with 5 species each and clusiaceae with 4 species. The detailed ethnobotanical importance, utilization pattern of every plant part (s) are given in table 1.

Public environmental awareness is very important for the study area. Protection of land, water, fauna, flora and atmosphere must become the joint responsibility of the people and the Government. Involvement of fringe tribal people in the management of natural resources is essential for promoting all these natural resources and ITKs, that are used in food, building material, pollution control, medicines, maintaining natural balances, biodiversity conservation. Present study has enabled in understanding the Mishing people of this region socio-culturally and their relation with the plants especially the uses of medicinal plants (Figure 3).

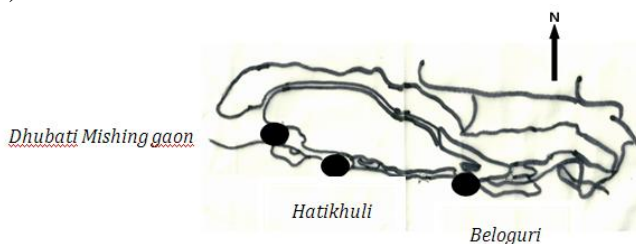


Figure 1: Map of Kaziranga national park showing the study sites in black spot.

Research Article

Table 1: Ethnobotanically used plants by Mishing tribe living in and around Kaziranga national park

Sl.No	Botanical name	Family	Local name (s)	Parts used	Ethnobotanical uses
1	<i>Adhatoda vasica</i> Nees	Acanthaceae	Bahaka (As; M)	Leaves Flowers	The juice of leaves is used as an expectorant and relieve cough. Flowers are eaten cooked.
2	<i>Aegle marmelos</i> (L) Correa	Rutaceae	Bel (As; M)	Fruit, leaves	Ripe fruit is eaten and medicinal in stomach trouble. Leaves are used in religious activities.
3	<i>Alocasia acuminata</i> Schott	Araceae	Kochu (As.); Ange (M)	Shoots, leaves, tubers	Young shoot , tender leaf and caudex are eaten cooked with acidic fruit. the leaves grinding with dried fish are kept in the bamboo shoot. Mishing people called “namshing”. It is used of malaria and blood purification.
4	<i>Aloe barbadnis</i> Mill	Liliaceae	Chalkunwari (As; M)	Leaves	It is cultivated ornamental plant. Leaves are used to treatment of disease like cuts , burns and eczema.
5	<i>Alpinia alughas</i> (Retz) Rose	Zingiberaceae	Tora (As); Talayang akhan (M)	Leaves, Young shoot	It is one of the most commonly used monocot species by Mishing people. Perhaps only after paddy. Special variety of rice is cooked after bundled with leaves of “tora”. This is called ‘Porang Apin’ which is essential for many festivals related with cultivation. Even fish , pork, mutton are smoked , cooked , baked after bundled with leaves. Scent/ flavor of the items become quite in this way. Young shoots are used as vegetable for de-worming purpose. Whole plant is a good buffalo-fodder.

Research Article

6	<i>Alpinia galanga</i> (L.) Willd	Zingiberaceae	Karphul or Gandhi tora (As; M)	Rhizomes, petioles	Rhizomes eaten fresh or with betel nut. A small portion of petiole or rhizome is added to curries for flavor.
7	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Hati-Khutora (As); Geang (M)	Leaves stem	Whole plant is used as vegetable.
8	<i>Andrographis paniculata</i> Nees	Acanthaceae	Kalmegh (As; M)	Leaves stem	Stem and leaves are used as stomatic, febrifuge and used as tonic.
9	<i>Artocarpous heterophyllus</i> Lamk	Moraceae	Kothal (As); Bilangaai (M)	Stem, leaves, fruit	Ripe fruit is edible, young fruit and seeds are used as vegetable. Leaves are used in preparation of the country liquor.
10	<i>Arundo donax</i> L.	Poaceae	Nol (As; M)	Spikes	Whole plant is used to keep rice. It is also used treat “bagly” (skin disease).
11	<i>Azadiracta indica</i> A. Juss.	Meliaceae	Moha Neem (As; M)	Twig, leaves	Young stems are used for brushing, leaves are eaten as vegetable also medicinal in skin diseases, small pox.
12	<i>Baccaurea sapida</i> L.	Euphorbiaceae	Leteku (As; M)	Fruit	Ripe pulp is edible.
13	<i>Bacopa monnieri</i> (L.) Pennell	Scrophulariaceae	Bhahmi (As.; M)	Whole plant	It is valued in medicine as a tonic for nerves, mental diseases, and brain tonic. Leaf juice is given to infants in bronchitis. Leaves used as vegetables.

Research Article

14	<i>Bambusa balcooa</i> Roxb.	Poaceae	Bhalookaa baah (As; M)	Culm	Bamboo is very essential for fringe villages. The main purposes of bamboos are construction of platform houses (chang) of the study area. Without bamboo the people of the villages can't live. The fishing implement made from bamboo are esap, porang, dirdang, kolyang, turji, jurki, jambork, saloni, jakoi, tuli etc. the agricultural implement of bamboo are moi, zuyali, stick etc.
15	<i>Bombax ceiba</i> L.	Malvaceae	Simolu (As); Singhee (M)	Root, flower, Fruit	The wood is porous soft and perishable but durable under water or when seasoned in water. Suitable for match, under water work cotton cushion etc. Seed & flowers are good fodder, roots medicinal.
16	<i>Butea monosperma</i> (Lamk.) Taub	Fabaceae	Palas (As; M)	Gum	The gum contains tannins and is medicinal in diarrhea.
17	<i>Calamus rotang</i> L.	Arecaceae	Bet (As); Jeying (M)	Apical portion	Climbing palms. Mishing people heavily use this species for furnisher, basket making. Apical portion after striping is used as vegetable and for de-worming medicine. Bitter in taste
18	<i>Cassia fistula</i> L.	Caesalpiniaceae	Sonaru (As; M)	Leaves, bark, fruit	Commonly planted in gardens and roadsides for its beauty. The heartwood is hard and fairly durable. The pulp of the fruit is a powerful purgative. Leaves are good fodder.

Research Article

19	<i>Celosia argentia</i> L.	Amaranthaceae	Mesor (As); Lasor (M)	leaves, shoots	An erect glabrous herb. Flower white or pink in spike. Seeds are small like mustard seed, black. Flowering occurs during late April. Young leaves and shoots are vegetable. Seeds considered medicinal against diarrhoea.
20	<i>Centella asiatica</i> Urb.	Apiaceae	Bormanimuni (As); Bortan Manimuni (M)	Whole plant	It is used as vegetable. The whole plant is used in stomachic disorder and carminative and rice beer preparation.
21	<i>Ceratopteris thalictroides</i> (L.) Ad. Brongn.	Parkeriaceae	Pani dhekia (As); Okangoing (M)	Fronds	Fronds are cooked with pork – which is very essential dish of Mishing people in all festivals.
22	<i>Cinnamomum, tamala</i> Nees.	Lauraceae	Tejpat (As; M)	Leaves	Cultivated plant. Leaves used as spice.
23	<i>Cinnamomum veram</i> Presl	Lauraceae	Dalchini (As; M)	Bark	The branches of the trees are looped and their bark removed; the dried inner bark constitutes the drug Cinnamon. The drug is used in diarrhea, vomiting. It is commonly used as condiment.
24	<i>Cissus quadrangula</i> L	Vitaceae	Herhuraa lata (As; M)	Stem, leaves	Paste of the plant is used in join broken fracture.

Research Article

25	<i>Clerodendrum cloebrookianum</i> L.	Verbenaceae	Nefafu (As); Pakcoom (M)	Leaves	Leaves are eaten to reduce high blood pressure and as vegetable.
26	<i>Clerodendrum indicum</i> (L) Kuntz	Verbenaceae	Akalbih (As; M)	Leaves, whole plant	Juice extracted from herbaceous portion, with ghee is used in various skin diseases. Whole plant is a good fish poison.
28	<i>Colocasia esculenta</i> (L.) Schott.	Araceae	Kochu (As); Ange (M)	Tender leaves	Tender leaves and tubers are eaten as vegetable. Leaves are used for the preparation of “namshing” (Both dried fish and Tender leaves grinding). Namshing is used for curing malaria and leaves used blood purification.
29	<i>Corchorus capsularis</i> L.	Tiliaceae	Tita Morapat (As); Mura (M)	Stem, Leaves	The plant is cultivated. Both old and young leaves are dried. The dried leaves are called sukuta. It is eaten after of the demise of any person of the family. The young plant is eaten as vegetable. Fibre is used for making twine, bags, etc.
30	<i>Costus speciosus</i> (Koen ex Retz.) Smith	Costaceae	Jom lakhuti (As; M)	Shoot, rhizome	Tender shoots are eaten as vegetable. Rhizome juice is used for treatment of Jaundice.
31	<i>Cynodon dactylon</i> Pers	Poaceae	Duboribon (As; M)	Whole plant	Twigs are used in religious purposes. Often cultivated for decorative purposes and sports grounds.
32	<i>Datura stramonium</i> L	Solanaceae	Dhutura (As; M)	Root, flower	Fairly common, wild as well as cultivated ornamental plant. Roots are used in the treatment of the bite by mad dog.
33	<i>Dendrocalamus hamiltoni</i> , Nees et Arn	Poaceae	Banh (As); Wha (M)	Culm	Pericarp of fruit crustaceous.

Research Article

34	<i>Dillenia indica</i> L.	Dilleniaceae	Outenga (As); Champa (M)	Bracts, fruit	The juice of fruit is used as cooling beverage in fevers, diarrhea, dysentery. Fruit used as vegetable.
35	<i>Dioscorea alata</i> L.	Dioscoreaceae	Kathalu (As); Ali (M)	Tuber	Wild as well as cultivated. Tubers are edible.
36	<i>Diplazium esculentum</i> (Retz.)SW	Athyriaceae	Dhekia (As) Okang (M)	Tender leaf	Tender apical leafy portion is used as vegetable. It is also an essential ingredient in religious ceremony (Dodgang) of dead person.
37	<i>Drymaria cordata</i> (L.) Willd ex Roem.	Carryophyllaceae	Laijabori (As; M)	Tender leaves, shoots	Tender leaves and shoots are vegetable. It is used as medicine for sinus problem, and in treatment of cuts & wounds of domesticated animal. It is herbal ingredient of preparation of rice beer (Apong.)
38	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Gakhiritibon (As); Anjuk:bon (M)	Whole plant	Common upland weed, used as vegetable.
39	<i>Ficus glomerata</i> Roxb	Moraceae	Dimoru (As); Takpiyang (M)	Leaves, Fruits	Ripe fruit is eaten raw. Leaves are boiled with pork and eaten as curry.
40	<i>Flacourita cataphracta</i> L.	Flacortiaceae	Ponniyal (As; M)	Fruit	Ripe fruits are eaten raw.
41	<i>Garcinia cowa</i> L	Cluciaceae	Kuji thekera (As; M)	Fruit	Fruit is edible. Direct fruit is used as medicine in dysentery (Prickle)
42	<i>Garcinia xanthohymus</i> Hook.f.&Th.	Cluciaceae	Tepor tenga (As; M)	Fruit	Fruit edible, raw or cooked.

Research Article

43	<i>Gossipium herbaceum</i> L.	Malvaceae	Kopah (As); Sipag (M.)	Seed leaves	Young leaves are used as vegetable.
44	<i>Hibiscus Suddarifa</i> L.	Malvaceae	Tenga Mora (As; M)	Leaves, fruits	Leaves and fruits are acidic, eaten cooked. It is good with fish and pork. Jelly is prepared with ripe fruits. Leaves are used in dysentery of man and domestic animals.
45	<i>Houttuynia cordata</i> Thunb	Saururaceae	Mosundori (As; M)	Leaves	Leaves are eaten raw or cooked as vegetable chutney. It is medicinal in dysentery.
46	<i>Hydrocotyle sibthopioides</i> L.	Apiaceae	Haru mani-muni (As); Borma manimuni (M)	Whole plant	It is used as vegetable. The whole plant is used in stomachic disorder and carminative and rice beer preparation.
47	<i>Imperata cylindrica</i> L.	Poaceae	Ulukher (As); Tase-Selag (M)	Leaves	Leaves are used in building of chang houses.
48	<i>Lagerstroemia flos-reginae</i> Retz.	Lythraceae	Azar (As; M)	Wood	Wood is last long under water. Village people used it for making boat.
49	<i>Lawsonia inermis</i> L.	Lythraceae	Jetuka (As; M)	Leaves	Leaves are used for treatment of hair and skin diseases.
50	<i>Leucas indica</i> (L.) R.Br.ex Vatke	Lamiaceae	Doron (As); Durun (M)	Root, leaves	Leaf juice diluted with water is put into the eyes two or three times daily to get relieve from burning sensation and redness of eyes. Root juice is used as nostril in 'Ardhashishi'. Leaf are boiled and eaten with rice.
51	<i>Lygodium flexuosum</i> L.	Schizaceae	Kopojungi (M)	Twigs	Mishing people use leafy twigs as one of the ingredient for making cake, which is used in preparing rice beer. Said to be containing

Research Article

					antifungal property.
52	<i>Magifera indica</i> L.	Anacardiaceae	Am (As); Ke:di (M)	Fruit, leaves,	Both ripe and unripe fruit are eaten. Leaves are uses for religious purposes mostly related to marriage ceremony,
53	<i>Meliosma pinnata</i> (Roxb.) Maxim.	Sabiaceae	Bon pachala (As); Dermi esing (M)	Young leaves	The young leaves are eaten cooked as vegetable especially with fishes by Mishing.
54	<i>Meliosma simplicifoila</i> (Roxb.) Walp.	Sabiaceae	Dhapapatia (As); Nitak (M)	Young leaves	Tender leaves and young shoots are eaten cooked by Mishing people. It makes a popular dish with local fishes.
55	<i>Mentha spicata</i> L.	Lamiaceae	Pudina (As; M)	Leaves	Common wild as well as cultivated herb. Leaves are used as vegetable and for treatment of fever and bronchitis.
56	<i>Michelia champaka</i> L.	Magnoliaceae	Champa-full (As; M)	Stem, root	Stem is used to make furniture, boat. The paste of bark is used in rheumatism. Women use the root juice in monthly period.
57	<i>Mimusops elengi</i> L.	Sapotaceae	Bokul (As; M)	Fruit, Stem	Ripe fruit edible and locally applied in insect bite. A good timber yielding plant.
58	<i>Moringa pterygosperma</i> Gaetern	Moringaceae	Sajina (As; M)	Leaves flower, seed	The flower, leaves and young fruits are used as vegetables. Leaves are used for the treatment of nerves, debility, epilepsy, bronchial, asthma etc.
59	<i>Murraya koenigii</i> Spreng	Rutaceae	Narasingha (As); Nor-hing (M)	Leaves	Leave are used as salad or chutney. The juice of the leave is used for the treatment of dysentery.
60	<i>Musa balbisiana</i> (Rety) Rose	Musaceae	Bhim kol (As; M)	Leaves	Heavily used by Mishing people for many purposes. Fruit is used as baby food. Fleshy petiole is used as dish in religious ceremony. Young pseudo stems are eaten as vegetables

Research Article

					(<i>Posola</i>). This is used as medicine against tuberculosis. Pseudo-stems are used as rafts in this flood prone area. Dried fruit exterior is used as medicine against cold and influenza.
61	<i>Nycthenches arbor-tristis</i> L.	Oleaceae	Shewali (As; M)	Leaves, flower	Leaf juice efficacious for internal worms, young leaves & flowers are edible (cooked)
62	<i>Nymphaea nouchali</i> Burms.f	Nymphaeaceae	Vateful (As); Alu:ck (M)	Whole plant	The tubers, rhizomes and petioles are used as vegetable. Fruit is eaten as raw.
63	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulosi (As); Tulohi (M)	Leaves, seed	The ripe seeds of the plant are used in the treatment of eye diseases. Leaves are used in coughs and religious purposes.
64	<i>Oryza sativa</i> L.	Poaceae	Dhan (As); Um (M)	Caryopsis straw	It is used for making rice beer also. Sometimes rice straw and husks are burnt and the ash are also used to prepare a special country liquor. Mishing peoples are very much fond of transplanted lowland and medium lowland rice cultures. Accordingly they used to cultivate traditional as well as improved varieties of <i>kharif</i> (=Sali) as well as deep-water (=Bao) rice depending upon suitability of land situation.
65	<i>Osbeckia nepalensis</i> Hook.	Melestomatacea	Umba (M)	Young leaves	Young leaves are used as vegetable.

Research Article

66	<i>Paederia foetida</i> L	Rubiaceae	Bhedailota (As); Bungkirupug (M)	Stem, leaves	Leaves are boiled and eaten as curry. The juice of the leaves is astringent and is a specific for diarrhoea and dysentery.
67	<i>Passiflora assamica</i>	Passifloraceae	Noltenga (As); Nakung (M)	Young leaves	Most essential ingredient for religious ceremony for dead person. Vegetable. Sour in taste.
68	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Amlakhi (As; M)	Fruit	Fruits are used in diarrhea and dysentery, bronchitis, hair medicine. Ripe and unripe fruits are eaten as raw.
69	<i>Piper nigrum</i> L	Piperaceae	Bonoria jaluk (As; M)	Leaves, seed	Fruits are collected and dried and used as spice, specially with red meat. Leaves are used to prepare the rice-beer 'Apong'. Powdered fruit is cooked with papaya and chicken or pigeon meat and used as medicine to lactating mother for better lactation.
70	<i>Polygonum glabrum</i> L.	Piperaceae		Leaves	Preparation of rice beer.
71	<i>Ricinus communis</i> L.	Euphorbiaceae	Era (As; M)	Leaves, seeds	Seeds are medicinal in ear diseases. Leaves are used to cure pain.
72	<i>Rubus moluccanus</i> L.	Rosaceae	Jotuli poka (As; M)	Fruit	A wild plant along forest edges. Fruits are eaten as raw.
73	<i>Saccharum spontaneum</i> L.	Poaceae	Kohuabon (Asm)	Whole plant	Young leaves of <i>S. spontaneum</i> is a good fodder for cows and buffalos. Leaves used for thatching.
74	<i>Sapindus mukorossi</i> Gaertn.	Sapindaceae	Ritha, monichal (As); Haithal-bang (M)	Fruit, Stem	Rare tree. The leaves are eaten by cattle. Fruit is used for washing old gold ornaments.

Research Article

75	<i>Saraca asoca</i> (Roxb.) De Wilde	Caesalpiniaceae	Asok (As; M)	Flower, seed	Flowers pounded and mixed with water are useful in haemorrhagic dysentery. Seeds are useful in urinary discharges.
76	<i>Scoparia dulcis</i> L.	Scrophulariaceae	Bondhonia (As); Jaluk (M)	Stem, leaves, flower	The whole plant is used in making rice beer.
77	<i>Solanum indicum</i> L.	Solanaceae	Tit-bhekuri (As); Bangko (M)	Fruit	Ripe and unripe fruits are eaten as vegetable.
78	<i>Spilanthes paniculata</i> L.	Asteraceae	Swoni (As); Malsa (M)	Leaves	A common marshland facultative weed; whole plant is eaten as vegetable. Young shoots and leaves are used as medicine in sore mouth, toothache and in wounds etc. Mishing women boil it with black-pepper (<i>jaluk</i>) and fed to mother after childbirth to increase the milk.
79	<i>Stenochlaena palustris</i> (Burm. f.) Bodd.	Balechnaceae	Dhekia lota (As); Tarong (M)	Young frond	A large climber with large fronds, drooping from the host plant, young fronds are reddish in color. Mishing people ate it mixing with others as vegetable
80	<i>Syzgium cumine</i> (L.) Skeels	Myrtaceae	Jamu (As; M)	Fruit	The fruits are eaten raw. Preserved fruit juice is used to cure dysentery.
81	<i>Tamarindus indica</i> L.	Caesalpinaceae	Teteli (As; M)	Stem, Seed	The timber of this tree is used for making ploughing tools, and other household articles. The ripe pulp of the seeds are eaten raw. Seeds are also eaten cooked.

Research Article

82	<i>Terminalia chebula</i> L.	Combretaceae	Hilikha (As; M)	Fruit	Unripe fruit is useful in medicine for diarrhea & dysentery. Fruit is eaten as raw.
83	<i>Thysanolaena maxima</i> (Roxb)	Poaceae	Jharugash (As); Chompang (M)	Inflores-cens; leaves	Inflorescences are used make brooms. Leaves are good fodder.
84	<i>Tinospora cardifolia</i> (Willd) Hook.f. & Th.	Menispermaceae	Amoilota (As; M)	Root. Stem	The starch obtained from the roots and stems of the plant is useful in diarrhea and dysentery; stem is used as substitute of cane in making baskets.
85	<i>Vitex neguno</i> L.	Verbenaceae	Pochotiya (As; M)	Root, twigs, leaves	Twigs are used for basket making. Leaves & roots are used as febrifuse and tonic. Leaves are eaten cooked with small fishes.
86	<i>Zanthoxylam oxyphyllum</i> Edgn.	Rutaceae	Mezenga (As); Onger (M)	Tender shoots	Tender shoots are eaten as vegetables, suitable with pork and considered a good vegetable by Mishing. It is presumed that it kills the tap-worm that is spreaded by pork-meat.

Research Article



A. Construction of traditional Mishing house



B. Homestead garden of medicinal plants



C. Weaving in Mishing village



D. Trade of rice in a Mishing village



E. Gathering plant materials for domestic uses



F. Grinding plant parts for rice beer

Figure 2: Ethnobotanical uses of plants and plants products

Research Article



A. Preparation for rice-beer



B. *Bombax ceiba* L.



C. *Calamus roang* L.



D. *Alpinia alughas* (Retz.) Rose



E. *Spilanthes paniculata* L.



F. *Murraya koenigii* Spreng

Figure 3. Widely used medicinal plants.

Research Article

The ethnobotanical exploration of the tribe has bring out the age-old practices of use of plants to the limelight with possibilities for further exploitation and value addition in commercial venture as well as for exploitation of new bio-molecules for the benefit of mankind. Almost all the species recorded in the present study were collected from natural habit. Hence there is urgent need to check the over exploitation of natural population and conservation of medicinally potent species of this region.

ACKNOWLEDGEMENTS

The authors are thankful to Director and Research Officer of Kaziranga national park for providing necessary help and useful suggestions. The author also thankful to the villagers for their help and cooperation and providing the necessary informations during fieldwork.

REFERENCE

- Arora RK (1990).** Native food plants of the tribal in northeast India. In Jain S. K. (ed.) *Contribution to Ethnobotany of India* Scientific Publisher Pvt. Ltd., Jodhpur, pp. 137 - 152.
- Baruah M and Kalita D (2007).** Ethnomedicine used by *Mishings* tribes of Dibrugarh distrivt, Assam. *Indian Journal of Traditional Knowledge* **6**(4) 595-598.
- Jain SK (2000).** Human aspect of plant diversity. *Economic Botany* **54** (4) 459 - 470.
- Sarmah R (2006).** Non-timber forest products and their utilization pattern in Changlang district of Arunachal Pradesh. PhD thesis, Rajiv Gandhi University, Itanagar, India.
- Sarmah R (2010).** Commonly used non-timber forest products (NTFPs) by the Lisu tribe in Changlang district of Arunachal Pradesh, India. *Sibsagar college teachers research journal* **05** 68-77.
- Sarmah R and Arunachalam A (2011).** Contribution of non-timber forest products (NTFPS) to livelihood economy of the people living in forest fringes in Changlang district of Arunachal Pradesh, India. *Indian Journal of Fundamental and Applied Life Sciences* **1** (2) 157-169.
- Sarmah R, Adhikari D, Majumder M and Arunachalam A (2008).** Traditional medicobotany of Chakma community residing in the Northwestern periphery of Namdapha national park in Arunachal Pradesh. *Indian Journal of Traditional Knowledge* **7** (4) 587-593.
- Sarmah R, Adhikari D, Majumder M and Arunachalam A (2006).** Indigenous technical knowledge of Lisus with reference to natural resource utilization in the far-eastern villages of Arunachal Pradesh India. *Indian Journal of Traditional Knowledge* **5** (1) 51-56.
- Sarmah R, Arunachalam A and Melkania U (2011).** Utilization pattern of non -timber forest products (NTFPs) by the tribal people in Changland district of Arunachal Pradesh, India. *Journal of Non-Timber Forest Products* **18** (2) 105-118.
- Sharma PP and Singh NP (2001).** Ethnomedicinal uses of some edible plants in Dadra, Nagar Haveli and Daman. *Ethnobotany* **13**: 121 – 125.
- Singh J, Bhuyan TC and Ahmed A (1996).** Ethnobotanical studies on he Mishing tribes of Assam with special reference to food and medicinal plans-I. *Journal Economic Taxonomy Botany* **12**:350-356.