ISSN 0976 – 3333

Available Online at www.ijpba.info

International Journal of Pharmaceutical & Biological Archives 2012; 3(4):809-815

ORIGINAL RESEARCH ARTICLE

Ethno Medicinal Studies of Common Plants of Assam and Manipur

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Received 08 May 2012; Revised 03 Aug 2012; Accepted 11 Aug 2012

ABSTRACT

Traditional medicine has always played a key role in the health systems of different ethnic groups living in remote areas of North-East India. Ethnomedicinal study of medicinal plants of Assam and Manipur was done during 2010-2011. In the present study 84 species of plant growing wild in rural, urban, semi forest and forest area which are commonly used by people of both the state for curing several diseases like skin disease, cough, asthama, diarrhoea, wound, piles, seminal debility, and other common diseases. The present paper reports the some common plant species and their scientific name, family, local names, part used and medicinal used for curing diseases.

Key words: Assam, Diseases, Ethnomedicinal, Manipur.

INTRODUCTION

North East India comprises of seven states commonly known as the “Seven Sisters”. They are Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. North East India is one of the richest biodiversity regions in India. The rich floristic diversity is due to its unique geographical location and comprises of forest range from tropical to alpine and has a vast reservoir of plants providing food, fuel, medicine, timber, fiber, oil and pulp etc. It is an important part of the Indian Floristic Zone and has been identified as one of the twelve “Genetic Epicenters” for the evolution of world flora. The region boasts of a rich wealth of threatened and endemic flora.

Assam is the gateway to the north-east; it is the second largest state of north east India situated between $24^0$2’-$27^0$6’N latitude & $89^0$8’-96^0E longitude covering an area of 78,438 sq km of which 23,688 sq km area is covered by forest. 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 [1]. Although a few study of ethnomedicinal plants of Assam and Manipur have been carried out [2-14]. However, the change of agricultural practices and other anthropogenic causes has threatened the nature’s unique genetic resources in the verge of extinction. In addition to that very little or no sufficient systematic studies have been done to explore and conserve the medicinal and nutritive potentials of these unique genetic resources. There is ever increasing demand for the herbal medicine in recent days in the domestic as well as international market. This resulted in the unauthorized collection, indiscriminate destruction and overexploitation of these resources from wild state.

The peoples of both the state have acquired knowledge on the natural resources that exists around their habitat in the forest ecosystem. These people have unique knowledge on use of different plant parts and their use in cure general ailment. These communities are using different formulations made out of plant parts in their primary health care. Keeping in view of vastness of forest area and richness of indigenous knowledge, systematic efforts have been made to document the ethnobotanical knowledge before it vanishes unknown. Therefore, an attempt has been made to explore and document the common medicinal plants used by the people of Assam and Manipur.

MATERIALS AND METHODS

The study was undertaken during the year 2010 to 2011. Information of medicinal plants was gathered by conducting randomly surveyed in particular district of Assam and Manipur. Altogether 84 plants species were identified with the help of standard keys of several workers [15 -18].

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After ethnobotanical surveys, herbariums were prepared following the methods [19, 20]. The collected plant specimens have been kept preserved in ecology and cytogenetic & plant breeding laboratory of Life Sciences Department for records. Each species is provided with nomenclature, family, vernacular name (Assamese & Manipuri) and part/parts used to cure diseases, in ethno-medicinal practice. Knowledgeable persons of communities and traditional herbal healers were contacted and information was collected through interviews, observations and discussions held during field survey through well prepared questionnaires.

RESULTS AND DISCUSSION

A total of 84 species belonging to 57 families were identified (**Table 1**). For each species the botanical name, family name, local name, plant part used and usage were recorded. In the present study reveal that most of the plant species were used for the treatment of skin and other diseases. The results of the present study provide evidence that medicinal plants continue to play an important role in the healthcare system of these community. The peoples of both the state used these plants for well being of their life, their general ailments and first aid. The general health problems such as skin disease, asthma, sore dysentery, diarrhea, stomach pain, cough, ulcers and fever are, most common in both the state. While sinus, gastric, eye problem, teeth problem, toothache, bronchitis, jaundice are other fairly complained health problems. Dysentery and diarrhea are most common and could be due to various reasons such as over eating, stomach upset, severe cold or due to other problems. High blood pressure, diabetes, headache, abdominal pain, menstrual problem, bleeding, asthma, chest congestion, and heart problem are also reported to some extent. There is similarity between the two states for preparation of medicines. Usually only one plant species or more than one are used. Plant such as *Azadiracta indica*, *Carica papaya*, *Centella asiatica*, *Cymbopogon citrates*, *Jatropha curcus*, *Phyllanthus emblica* and *Tinospora cordifolia* are used for the treatment of skin treatment. *Chenopodium album and Capsicum chinense* is used for the treatment of stomach problem and respiratory infection; *Ficus hispida and Leucas aspera* was used for treatment of liver ailments, snake bite, scorpion sting sinusitis, headache; *Tinospora cordifolia* is used for the treatment of irregular fever, chronic fever, jaundice thrist vomiting, arthritis, skin diseases, cough, as rejuveniative for purifying breast-milk, , eye diseases; *Jatropha curcus* for ulcer, tumour, scabies, wound, haemorrhoid, wound, splenomegaly, skin diseases, rheumatism and paralysis, Jaundice, eczema and ringworm; *Aegle Marmelos* for diarrhoea, sprue, piles, oedema, jaundice, vomiting, obesity, deafness, eye diseases, paediatric diseases, fever, diarrhea; *Allium sativum* for high blood pressure, diabetes and gastritis disorders; *Carica papaya* for digestive problems, constipation, intestinal worms and skin diseases; *Nymphaea rubra* for nose bleeding, piles and dysentery; *Oroxylum indicum* for diarrhea, dysentery, headache and rheumatism; *Asparagus racemosus for* haemorrhage, diarrhoea, piles, hoarseness of voice, cough, arthritis, poisoning, diseases of female genital tract, erysipelas, fever, as aphrodisiac; *Momordica charantia* for to treat dysentery, colic, fevers, burns, painful menstruation, scabies and other skin problems stomach complaints; *Benincasa hispida* for peptic ulcer, helps in cystitis, urinary tract infections, kidney stones and other urinary tract conditions, *Piper longum for* prevent indigestion fever, diarrhoea, piles, cough, hiccough, asthma, hoarseness of voice, consumption, flatulence, colic, vomiting, acid gastritis, pox, diseases of mouth, eye diseases, diseases of semen, diseases of women, intrinsic haemorrhage, jaundice, dentition.

The world health organization estimates that about 80% of the population of most developing countries relies on herbal medicines for their primary healthcare need. The finding of the study envisage that the herbal medicine have great potentiality to care different kind of skin diseases. The indigenous rural community depends on traditional healthcare system. About 80% of human population in India is using herbal medicine to care different kind of diseases [21]. Some species used by the community of both the state are also used by the different community from other places of India as it is evident from earlier works of [22-26]. Ethnobotany of medicinal plants was used by peoples of different state of India for various skin ailments and other diseases [27-30]. The information generated from the present study regarding the medicinal plant use by the people of this region need a thorough phyto-chemical investigation including alkaloid extraction and isolation along with few clinical trials. This could help in creating mass awareness regarding the need for conservation of such plants

and also in the promotion of ethno-medico-botany knowledge within the region besides contributing to the preservation and enrichment of the gene bank of such economically important species before they are lost forever. Sometime, over exploitation of a particular species can also lead to the incidental disappearance of other non-targeted species. People of both the state realize on ethnomedicine and in most problems they gone to local traditional herbal healers because of the poor health care condition.

The paper highlights the information to conserve these important plant species for sustainable uses for the future generations. Since medicinal plants and its derivatives continue to play a major role in the in medical therapy, it is of utmost importance to conserve these resources for the sake of mankind and future generations.

Table 1: Ethnomedicinal used for treatment of various diseases

S.No	Scientific Name	Local Name		Family	Part Used	Medicinal uses
		Assamese	Manipuri			
1	*Adhatoda vasica* L.	Boga bahak	Nongmangkha, Malabar nut	Acanthaceae	Fresh leaves, Flowers	Cough and allergic problems
2	*Aegle Marmelos* Linn.	Bel	Heirikhagok	Rutaceae	fruit, leaves and root	diarrhoea, piles, jaundice, vomiting, obesity, deafness, eye diseases, pediatric diseases, fever, diarrhea
3	*Ageratum conyzoides* L.	Gondhowa-bon	Khongjai napi,	Compositae	Fresh whole parts of plant	used as appetizer and ophthalmic; leaves are used to stop bleeding, used as hair lotion
4	*Allium ascalonicum* G. Don	Piyaz	Meitei tilou macha,	Amaryllidaceae	Leaves, Bulb	skin boil, toothache
5	*Allium sativum* L.	Naharu	Chanam,	Liliaceae	Fresh leaves, Bulb	high blood pressure, diabetes and gastritis disorders
6	*Alocasia macrorrhiza* (L.) G. Don	Bar-kachu	Hongngu	Araceae	petiole , rhizome	Whitlow, paronychia, knee joint pain, leucorrhoea, coolant in burns, dizziness, migraine headache
7	*Aloe barbadensis* Mill.	Chal-kunwari	Ghritakumar,	Liliaceae	Fresh leaves	fever, burn injury and stomach ache
8	*Alstonia scholaris* (L.) R.Br.	Satina	Barap lei	Apocynaceae	bark	malarial fever, chronic dysentery, diarrhoea and in snake bite; ulcers
9	*Ananas comosus (L.) Meer*.	Mati kothal	Keehom	Bromeliaceae	Fruits, leaf	burn area and wrinkle, inflammation
10	*Annona squamosa L*	Atlas	Sitaphal,	Annonoceae	Fruits, Roots	lowering blood sugar
11	*Aphanamixis polystachya* (WALL.)	hakhori bakhori	Heirangkhoi	Meliaceae	Bark, fruits	used to treatment of rheumatism
12	*Aquilaria agallocha* Roxb.	Hasi-goach	Agar	Thymelaeaceae	heartwood, stem	treat inflammation in folk medicine, antioxidant
13	*Artocarpus integrifolia*	Kothal	Theibong	Artocarpaceae	Fruits	Asthma, cuts, pains, fever, head ache, wounds, sprains, abortion, snake bite, diabetes, epilepsy, jaundice, boils
14	*Asparagus racemosus* Willd.	Satmul	Nunggarei	Lillaceae	Roots, tubers, rhizome	hemorrhage, diarrhoea, piles, hoarseness of voice, cough, arthritis, poisoning, diseases of female genital tract, erysipelas, fever, as aphrodisiac
15	*Averrhoa carambola* L.	Kardoi	Heinoujom	Averrhoaceae	Fruits, bark	Digestible, tonic, eye cleaner, scabies, fever, intestinal worms
16	*Azadirachta indica* A. Juss.	Moha-neem	Neem,	Meliaceae	Fresh leaves, Seeds	Pyorrhea, skin diseases and intestinal worms
17	*Bacopa monnieri* (L.) Penn	Brahmi	brahmi-sak	Scrophuclariaceae	whole plant	Epilepsy, pediatric diseases, pox and as a rejuvinative. Mental disorders, constipation, cough, fever, clearing voice and diabetes
18	*Benincasa hispida* (Thunb.) Cogn	Kumora	Torbot	Cucurbitaceae	Fruits	Peptic ulcer, helps in cystitis, urinary tract infections, kidney stones and other urinary tract conditions, prevent indigestion
19	*Blumea balsamifera* D.C.	Kaphur goch	Langthrei	Asteraceae	Tender shoots, Fresh leaves	stomach ache
20.	*Bryophyllum Pinnatum* Roxb.	Pategoja	Manahidak	Crassulaceae	Leaf	Epilepsy, inflammation
21	*Cannabis sativa* L.	Bhang	Ganja	Cannabinaceae	young leaves along and tender shoots	Insecticidal activities
22	*Capsicum chinense* Jacq.	Bhut Jolokia	Umorok	Solanaceae	Fruits	respiratory infection and stomach problem
23	*Carica papaya* L.	Amita	Awathabi, Papaya	Caricaceae	Unripe or ripe fruits	digestive problems, constipation, intestinal worms and skin diseases
24	*Cassia alata* L.	Khor-pat	daopata	Caesalpiniaceae	Leaves or sap	treat fungal infections such as ringworm, high-blood pressure,

						skin diseases, stomach problems, fever, asthma to snake bite and venereal diseases (syphilis, gonorrhea).
25	*Catharanthus roseus* G. Don	Nayantora	Saheb lei	Apocyanaceae	Root, leaves	cancer, wounds, fever, epilepsy, scabies
26	*Centella asiatica* (L.)Urban	Bor manimuni	Peruk,	Apiaceae	Leaves, Stems	blood purifier and skin diseases
27	C*henopodium album* L.	Jilmil-sak	Monsaobi	Chenopodiaceae	Leaves, Tender shoots	stomach pain
28	*Cinnamomum tamala*	Tezpat	tezpat	Lauraceae	Bark, leaf, powder	Sleeplessness
29	*Citrus grandis* (Osbeck)	Robab-tenga	Nobab Heijang	Rutaceae	Fruits	tonic, blood purifier, appetizer
30	*Citrus limon* (L.) Burm. f.	Kanji nemu	Champra	Rutaceae	Fruits	Nerve tonic, blood cleanser as well as used in the fight against cancer.
31	*Clerodendron siphonanthus*	Jomlakhuti	Charoi-utong	Verbenaceae	Stem, leaves	Asthma
32	*Croton tiglium* L.	Koni-bih	Yong Khullokpi and Khagi laikoi.	Euphorbiaceae	Leaf, root	Cancer, ringworm, wounds, constipation
33	*Cymbopogon citrates* (Stapf.)	Citronola	Haona	Poaceae	Srem	Bronchitis, skin diseases, cholera and fever
34	*Dillenia indica* L.	Ou-tenga	Heigri;	Dilleniaceae	Root, leaf. fruits	Hair lotion, fever, dysentery; chest pain, stomach disorder
35	*Dioscorea alata* (L.)	Kath alu	Ha	Dioscoriaceae	Tubers	treatment for fever, gonorrhea, leprosy, tumors, and inflamed hemorrhoids, antifungal properties
36	*Drymaria cordata* (L.) Willd. ex Roem. et Schult	Lai-jabori	Tandan-pambi	Caryophyllaceae	Whole Plant	hectic fever, dyspepsia and cough, muscular sprain, nasal blockade, fever, cold, throat trouble and painful menstruation
37	*Eugenia jambolana*	Kola-jamu	Heimun	Myrtaceae	Fruits, seeds, leaves and bark	Diabetes. Digestion, blood pressure and gingivitis
38	*Euphorbia antiquorum L*	Hiju-goach	Tengnou	Euphorbiaceae	Root	leprosy, earache, dropsy, syphilis
39	*Ficus glomerata* Roxb.	Dimaru	heibong	Moraceae	Fruits, leaves	treatment of diabetes, liver disorders, respiratory, urinary diseases and inflammatory conditions
40	*Ficus hispida L.*	Khohota Dimoru	Asi heibong	Moraceae	Fruits, Leaves, Sticky latex	liver ailments, urinary diseases and inflammatory
41	*Fragaria indica* Andr	Garukhis	Heirongkaklaba,	Rosaceae	Fresh whole parts of plant	problem of urinary tract & stone case
42	*Gynura cusimbua*	Chengache	Terapaibi	Asteraceae	stem and leaves	for stopping bleeding and fast healing, headache
43.	*Hibiscus rosa-sinensis*	Joba	Juba kusoom,	Malvaceae	Leaves and flowers	Irritation, burn injuries and fever
44	*Houttuynia cordata* Thunb.	Mochondori	Toningkhok	Saururaceae	The fresh whole plant (spices for curry and salad)	allergic reactions, tonic
45	*Jatropha curcus* L.	Bongali era	awa-kege	Euphorbiaceae	Leaves and twigs, seed	ulcer, tumor, scabies, wound, hemorrhoid, wound, splenomegaly, skin diseases, rheumatism and paralysis, Jaundice, eczema and ringworm
46	*Juglans regia* L.	Akhrot	Heijugang	Juglandaceae	Fruits	Hair care, Tongue cleaning, Wounds, Swelling on body, Knee pain
47	*Kaempferia rotunda* L.	Bhumi champa	Yai-Thamna-manbi	Zingiberaceae	Tubers	Used for wounds, ulcers, tumors, swellings and gastroenteritis.
48	*Lagenaria vulgare* Standl.	Jati-lau	Khongdrum	Cucurbitaceae	fruits	heart diseases, constipation, kidney disorder
49	*Leucas aspera* (WILLD.) SPRENG.	Doron	Mayanglambum	Lamiaceae	Leaves and flower buds	liver ailments, snake bite, scorpion sting sinusitis, headache
50	*Leucas plukenetii (*Roth) Spreng	Boga Doron	Mayanglambum	Lamiaceae	Leaves.	used in sinusitis
51	*Mentha viridis* L	Podina	Nungshi hidak	Lamiaceae	Whole plant	Pimples, diarrhoea
52	*Mimosa pudica* Linn.	Nilaj bon	Lam Ikaithabi	Mimosoideae	Roots, leaves and flower heads.	treatment of biliousness, leprosy, dysentery, vaginal and uterine complaints, inflammations, burning sensation, fatigue, asthma
53	*Mimusops elengi* Roxb.	Bokul	bokul	Sapotaceae	Bark, flowers and fruits	Fever and toothache
54	*Momordica charantia* L	Tita-kerela	Karot Akhabi	Cucurbitaceae	Fruits, Seed	to treat dysentery, colic, fevers, burns, painful menstruation, scabies and other skin problems stomach complaints
55	*Momordica cochinchinensis* (Lour.) Spreng	Bhat kerela	Karot	Cucurbitaceae	Fruits, Seed	kidney stone treatment

56	*Moringa oleifera* (Lam.)	Sajina	shajna	Moringaceae	Fruit, bark, seed, root, leaves	Anti-Inflammatory Cancer Treatment, Diabetes Treatment Gout & Arthritis Treatment Relief for Gastric Ulcers High Cholesterol Prevention,
57	*Morus alba* L.	Nuni	Kabrangchak Angouba	Moraceae	Fruits	Treatment of hyperuricemia and gout chronic diabetic treatment of leukemia
58	*Murraya Koenigii*, (Spreng)	Norosingho	Narsinghmana	Rutaceae	Leaves	Decoction of the leaf taken orally to cure dysentery
59	*Musa sapientum* L.	Aathia Kal	Lafu	Musaceae	Root, stem, ripe and unripe fruit	Dysentery, cholera, blisters and burns
60	*Nelumbo nucifera* Gaertn.	Padum	Thambal,	Nymphacaceae	Young leaves, Dried leaves, Seeds, Roots	Diarrhea, cholera, liver, cardiac complaints and diabetes.
61	*Nyctanthes arbor-tristis* L.	Sewali	Singarei	Oleaceae	Leaf, seed	Fever, hair fall, Cough/cold, Malaria Intestinal worms, wounds,
62	*Nymphaea rubra* Roxb.ex Andrews	Seluk	Tharo angangba,	Nymphacaceae	Rhizomes	nose bleeding, piles and dysentery
63	*Ocimum gratissimum* L.	Ram-tulshi	Tulsi	Lamiaceae	Fresh leaves, Tender shoots	bronchitis, stomach problem, fever, cough, cold and congestion of lungs
64	*Ocimum sanctum*	Tulshi	Tulsi	Lamiaceae	Fresh leaves, Tender shoots	bronchitis, stomach problem, fever, cough, cold and congestion of lungs
65	*Oroxylum indicum* (L.) Vent.	Bhatghila	Shamba	Bignoniaceae	Tender leaves, shoots and flowers	diarrhea, dysentery, headache and rheumatism
66	*Oxalis corniculata* L.	Soru tengeshi	Yensil	Oxalidaceae	Whole plant	kidney stone treatment
67	*Phyllanthus acidus* Skeels	Pora Amlokhi	Kehori	Euphorbiaceae	fruits	liver tonic, to enrich the blood
68	*Phyllanthus emblica* L.	Amlokhi	Heikru,	Euphorbiaceae	Fresh & dried fruits	Skin diseases and dysentery
69	*Phyllanthus fraternus* Webst.	Bon-amlokhi	chakpa-heikru	Euphorbiaceae	Fresh & dried fruits	Skin diseases and dysentery, hair lotion
70	*Piper longum* L.	Pipoli	Uchithi	Piperaceae	Fruits, stem, root	fever, diarrhoea, piles, cough, hiccough, asthma, hoarseness of voice, consumption, flatulence, colic, vomiting, acid gastritis, pox, diseases of mouth, eye diseases, diseases of semen, diseases of women, intrinsic hemorrhage, jaundice, , dentition,
71	*Piper nigrum*	Jaluk	Gulmirch	Piperaceae	Seed	Diuretic, carminative, stimulant, stomachic, anti cholerin, sialagogue, tonic, bechic, anti-asthmatic, in malarial fever, alterative, in paraplegia and arthritic diseases, externally rebefacient and stimulant to the skin, an infusion used on gargle for sore throat, hoarseness
72	*Psidium guajava* L.	Madhuri_am	Poongtol,	Myrtaceae	Young leaves	Diarrhea and vomiting
73	*Punica grantum* (L.)	Dalim	Kamphoi	Puniaceae	Bark, stem, root and fruit	Tapeworms, diarrhea and dysentery
74	*Santalum album* L.	Boga chandon	Cha-chandan	Santalaceae	Oil and powder of the wood	urinary troubles and skin diseases
75	*Sapindus mukorssi* Gaertn.	Manichal	Kekru	Sapindaceae	Bark, fruits	Epilepsy, cough, whooping cough and asthma, seeds used in leucorderma
76	*Scoparia dulcis* L	Seni bon	Maipuipin	Scrophulariaceae	Leaves.	Used for fever, cough and diabetes.
77	*Senna tora*	Bon medelua	Thaunum namthibi	Caesalpiniaceae	leaves and seeds	Leprosy, ringworm, flatulence, colic, dyspepsia, constipation, cough, bronchitis, cardiac disorders.
78	*Solanum nigrum* L.	Los kochi	Leipung khangnga	Solanaceae	Fruits	fever, cough, mouth and tongue ulcer
79	Spondias mangifera, (Willd)	Amora	Eikhoi	Anacardiaceae	Fruit, young leaf, bark	Dysentery, anemia
80	*Solanum xanthocarpum*Schrad.& Wendl.	Kotayen bengena	Leipung-khanga	Solanaceae	Fruits	Mouth ulcer, vomiting, fever, throat pain, Respiratory disorder
81	Swertia chirayita (Roxb. ex Fleming) Karst.	Chirata	Chiretta	Gentianaceae	Stem, root and leaves	anti-inflammatory, diuretic in anemia, bronchial asthma, liver disorder, debility, leudoerma, piles, bad, taste, skin diseases, ulcers
82	Tamarindus indicus (L.)	Tetali	mangge	Caesalpiniaceae	Fruits, leaf, seed, flower	Stomach disorders, general body pain, jaundice, yellow fever and as blood tonic and skin cleanser. ,
83	*Tinospora cordifolia* Miers.	Amoralota	ningthoukhongli	Menispermaceae	stem, root and leaf	irregular fever, chronic fever, jaundice thrist vomiting, arthritis, skin diseases, cough, as

						rejuveniative for purifying breast-milk, , eye diseases
84	*Zingiber officinale* Roscoe.	Ada	Shing,	Zingiberaceae	Leaves, Rhizomes	Stomach disorders, dyspepsia, colic and vomiting.

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