



### RESEARCH ARTICLE

## ETHNO-MEDICINAL PLANTS USED BY ETHNIC TRIBES OF FRINGE VILLAGES IN GREATER MANAS LANDSCAPE, BAKSA DISTRICT OF ASSAM, INDIA

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#### Abstract

Ethnobotanical knowledge plays an important role in curing various diseases among the indigenous people in and around the north-east India. An ethnobotanical study of medicinal plants was carried out in fringe villages at Manas National Park in Baksa district, Assam from 10<sup>th</sup> October, 2018 to 8th February 2019. During this survey a total of 33 plants species belonging to 24 families has been recorded in the study area. The present study focused on documentation of medicinal plants used to treat various human diseases such as diarrhea, dysentery, pain, kidney stones, diabetes and liver disorder etc. The study is an attempt to understand the plants used as medicine amongst the ethnic people and to attract their heedfulness on needful conservation of medicinal plants in the study area.

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#### Introduction:-

The North-east India is a part of foot hills of Himalayas and Indo-Burma "Biodiversity hot spot" in the world supporting about 50% of India's biodiversity (Mao et. al, 2009). The use of plants as a source of medicines has become an important component of present healthcare system in developing countries like India. The exploration of the traditional knowledge of ethnic people using different plants for treatment of diseases is very important. According to World Health Organisation (WHO) over 45,000 plant species in India have medicinal values and 70% of the Indian rural population used traditional medicine for primary healthcare system that come from the biological resources (Ved & Goraya, 2008). Several workers in the North Eastern Region of India have studied about the medicinal plants (Borthakur, 1976; Begum & Gogoi, 2007; Das, 2016; Saikia et. al, 2006). A total of 85 plants belonging to 49 families have been reported to therapeutic use against skin diseases and as herbal care (Das, 2016; Das et. al, 2008). The ethnic tribal community from the local fringe villages of Manas National Park mainly depends on herbal medicine for their any kind of ailments. The traditional system of medicine plays an important role in curing various diseases of these fringe viagers curing almost all types of ailments. It is fact that identification and documentation of these medicinal plants are of great importance in assessing country's natural resources and their scope of utilization in treating upcoming diseases.

#### The Manas National Park falls in the following districts:

Chirang, Baksa, Kokrajhar, Darrang, Udalguri and Bongaigaon in the state of Assam in India. The minimum temperature is around 15 °C (59 °F) and the maximum temperature is around 37 °C (99 °F). Manas National Park is a densely forested area located in the foothills of Eastern Himalayas having Latitude: 26.6594° N and Longitude: 91.0011° E.

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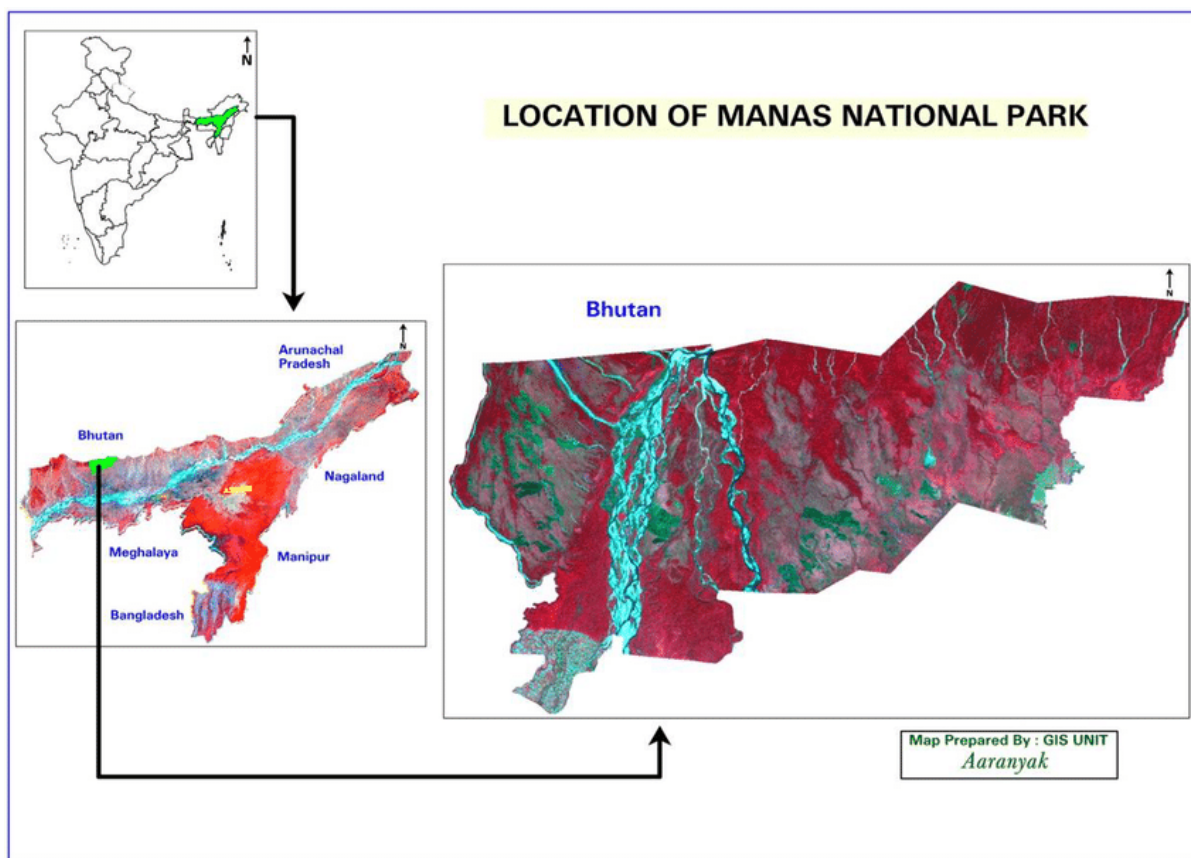


Figure 1:- Location map of the study area.

### Materials and Methods:-

A field survey was conducted among the ethnic locality of Baksa district of Assam from 10<sup>th</sup> October, 2018 to 8<sup>th</sup> February, 2019. During the study, the aged villagers and the local traditional medicinal practitioners (known as “Bez” or ‘Ojah’) were selected to consult about medicinal plants that the people of locality use. Plants have been identified by comparing herbarium sheets with those of Barama College, Barama and with the help of plant taxonomist of Archaeological survey of India. Immediate information about the medicinal use of plants was collected from the traditional healers. Information on medicinal plants used by villagers was taken on the basis of questionnaire and personal interview with the local people. Questionnaire was prepared for the collection of data such as local name of the plant, edible parts used, time of availability and what part is used as medicine and for what type of disorders.

### Result and Discussion:-

During this survey, a total of 33 ethno-medicinal plants species belonging to 24 families has been recorded. These plants have been used by the rural people of the study sites in various ways. Table-1 shows a list of the medicinal plants used by the ethnic tribal communities living in and around the Manas National Park of Assam, North East India.

S.No.	Scientific name of plant	Family	Local name	uses
1	<i>Drymaria cordata</i> Willd	Caryophyllaceae .	Laijabri(Ass)	Leaves are used to treat insect bite.
2	<i>Centella asiatica</i> (L.)	Apiaceae	Manimuni (Ass.),	Used to treat dysentery and liver disorder
3	<i>Nelumbo nucifera</i> Gaertner	Nelumbonaceae	Padum (Ass),	Medicinal value: root, leaf, flower, seed used in fever, skin diseases. Other uses: flowers used in ritual

				purpose.
4	<i>Vanda coerulea</i>	Orchidaceae	Bhatou Phul (Ass.)	Used for the treatment of Glaucoma, Cataract etc.
5	<i>Bacopa monnieri(L.)</i>	Scrophulariaceae	Brahmi(Ass),	Juice of shoot and leaves are used to treat dysentery
6	<i>Asparagus recemous Wild.</i>	Liliaceae	Satmul (As.)	Young shoots and tuberous root has medicinal value.
7	<i>Terminalia chebula Retz.</i>	Combretaceae	Silikha (As.)	The both unripe and ripe fruits as eaten raw or used as medicine usually chewed after meal as digestive
8	<i>Terminalia arjuna (DC.) W. &amp; A.</i>	Combretaceae	Arjun (As.)	Its bark is considered highly medicinal for heart diseases, diabetes and in lowering high blood pressure.
9	<i>Bryophyllum Pinnatum Roxb</i>	Crassulaceae	Pategoja, Dupar tenga (As.)	The leaves of this plant are used as vegetables. It is used as medicine for kidney stone and constipation
10	<i>Cassia fistula L.</i>	Caesalpiniaceae	Sonaru / Sonalu (As.)	The pulp of the ripe pod is eaten fresh, also use as medicine to cure mouth ulcers.
11	<i>Melia azedarach L.</i>	Meliaceae	Ghoraneem (As.)	Leaves are used in treatment of skin diseases, to kill germs
12	<i>Azadirachta indica</i>	Meliaceae	Mahaneem (As.)	It is valued as medicine for stomach pain, worm infection, skin diseases. It is highly valued as air purifier
13	<i>Averrhoa bilimbi L.</i>	Averrhoaceae	Bilimbi tenga, Rohdoi (As.)	Fruits are eaten fresh, as chutny, and also used as medicine for liver trouble.
14	<i>Averrhoa carambola L.</i>	Averrhoaceae	Kardoi (As.)	It is used as medicine for jaundice and kidney stone.
15	<i>Garcinia morella (Gaertn.) Desr.</i>	Clusiaceae	Kuji Thekera (As.)	Dried fruit slices are also considered good for dysentery patients
16	<i>Garcinia cowa Roxb.</i>	Clusiaceae	Kau thekera	Used as medicine for dysentery
17	<i>Hibiscus subdarifa L.</i>	Malvaceae	Tenga mora, Mesta tenga (As. & Bodo)	Leaves are used as medicine in dysentery of man and domestic animals.
18	<i>Abroma augusta</i>	Sterculiaceae	Bon-kopah (Assamese)	Used as medicine of Diabetes and headache
19	<i>Achyranthes aspera</i>	Amaranthaceae	Hati-huria (Assamese)	Used in dysentery, piles ulcer, diuretic
20	<i>Acalypha indica</i>	Euphorbiaceae	Mukuta-manjari (Assamese)	Burns, scabies, syphilis and centiped bites
21	<i>Hibiscus manihot</i>	Malvaceae	usipak (Assamese)	Tuberculosis, anti-diabetic
22	<i>Rauwolfia serpentine(L)</i>	Apocynaceae	Sarpagandha(Ass.)	Sedation, hypertension,

				Nervous disorders, anxiety, excitement, insomnia, epilepsy
23	<i>Oxalis corniculata L.</i>	Oxalidaceae	Soru tengeshi (As.)	The plant is also highly considered medicinal in dysentery and blood pressure. It is suitable vegetables with small fish.
24	<i>Amaranthus spinosus L.</i>	Amaranthaceae	Kata-Khutura	Used in Jaundice, Internal bleeding, diarrhoea, anaemia
25	<i>Mentha viridis L.</i>	Lamiaceae	Pudina	Leaves and stems are used for acidity and stomach problem
26	<i>Embilica officinalis Gaertn</i>	Euphorbiaceae	Amlokhi(As.)	Root is used in asthma, leaves used in blood dysentery, fruits used in diarrhea, acidity, anaemia, gastric ulcer and cardio tonic
27	<i>Dillenia indica L.</i>	Dilleniaceae	Ow-tenga(AS.)	Roots are used for swelling of scrotum, fruits are used in dysentery and tonic and slippery semi- liquid fluid used for dandruff
28	<i>Physalis minima L.</i>	Solanaceae	Kopal phuta	Used for Malaria, asthma, hepatitis, dermatitis
29	<i>Paederia foetida</i>	Rubiaceae	Vedailata	Used for any stomach problems.
30	<i>Chromolaena odorata (Linnaeus)</i>	Asteraceae	Germany ban	Used for healing sore or cut
31	<i>Oldenlandia corymbosa Linn.</i>	Rubiaceae	Sarpajiva (Ass)	plant extract used in stomach problem
32	<i>Datura metel L.</i>	Solanaceae	Boga-dhatura	Leaves and roots are used in pain and swellings and making beer
33	<i>Aegle marmelos Correa</i>	Rutaceae	Bel (As.) Wood apple (Eng.)	The pulp of the ripe fruit is laxative and mixed with milk and sugar. The unripe fruit is boiled or roasted to use as medicine for dysentery and diarrhoea.

From the eight surveyed fringe villages of greater Manas Landscape, it is revealed that around 80% people of indigenous communities use wild plant bio- resources as medicine. Most of the villagers in the study area depend on forest resource for food and medicinal purposes. The field survey revealed that there was more than 60 plant species for the treatments of different diseases in the area. But, some medicinal plants have been already extinct and some are being treated as endangered, vulnerable and threatened due to habitat destruction for deforestation and over or unskilful harvesting. Even, today most of the villagers of the study area remain busy with floristic wealth for collection of firewood, wild edible plants and medicinal plants used as food. The rich plant diversity of the study area is utilized by ethnic tribes in a variety of ways. It has been found that wild plants used as food and medicine are good sources of minerals and free from heavy metal contamination (Narzary and Basumatary, 2017). It is seen that the interest of the young generation on indigenous knowledge of medicinal plants are gradually diminishing due to its preparation and processing. Similar result was reported by Yineger and Yewhalaw (2007) where young people

showed disinterest on traditional medicinal plants. But, the people of the study area showed a keen interest to harvest different plant parts for the preparation of traditional remedies (e.g., leaves, roots, seeds, barks, and fruit). Moreover, as per local report it is known that the availability of medicinal plants has been affected by a remarkable decrease of native vegetation due to agricultural expansion, deforestation, fire, overgrazing, and charcoal and firewood (Cunningham, 1995 & Giday et. al, 2003).

### **Conservation Strategy:**

There is an urgent need to involve local people of the fringe villages of Greater Manas Landscape for conservation of such medicinal plants and also need to train them through conservation education so as to create a forest friendly livelihood holding seminars or workshops.

Though, there is a regeneration process of plant species reflect the effort of local NGO, lots of valuable forest products have reduced and many of them faced the level of extinction due to over exploitation of forest flora and encroachment of forest for agriculture and settlement. On the other hand, rapid development of transport and stone quarries are the some other causes which accelerated the process of destruction of natural vegetation. Government, forest department and N.G.O. should have taken up forestation programs within fringe villages in Greater Manas Landscape for much more intensive conservation of medicinal wild plants.

### **Conclusion:-**

This study reveals that varieties of plant species are playing important role for treating different human and livestock diseases in the study area. The therapeutic use of the documented plants will provide basic data for further research. No side effect of these ethno-medicinal plants is known from the interviews of healers or patients. It emphasizes that alternative medicine is better than our conventional allopathic medication for low income people of this locality. Hence, the present study emphasizes the need for extensive biochemical evaluation of these medicinal plants of Assam.

### **Recommendations:-**

The present study recommends that policy maker and private funding agencies should make proper step for conservation for economically important and rare medicinal plants. Strategies should be made to prevent the over exploitation and habitat destruction of these valuable resources.

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