



**TRADITIONAL MEDICINAL USES OF MONOCOT PLANTS BY BODO COMMUNITY
IN UDALGURI DISTRICT (BTAD), ASSAM, NORTH EAST INDIA**

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ABSTRACT

The present study deals with the traditional ethno-medicinal uses of monocot plants by the Bodo tribes of Udalguri District area. Study was conducted in the district during 2014-15 with the standard methodology. A total 48 plant species monocotyledonous group belongs to 17 families were found from the investigation. The species described in the present study was used for the cure of various diseases such as stomachic treatment, gonorrhoea, diarrhoea, diabetes, various skin diseases, jaundice, fungal infection, as antibacterial, germicidal, treatment of wounds, ulcer, respiratory disorders, fever, tooth-ache, gastric problems, bone fracture etc. there is need to conserve the plant resources on the ground level for the benefit of human beings and sustainable development of environment.

KEYWORDS: Ethnobotany, Flora, Indigenous knowledge, Participatory Rural Appraisal.

INTRODUCTION

Different medicinal plants and their uses are greatly well-known to Indigenous communities of different parts of the world they are expert for mounting inventive practices and products from their surroundings (Tiwarei et al. 2010). Ethnobotanical studies typically focus on recording the knowledge of traditional societies in remote places (Hodges and Bennett, 2006). Medicinal plants are important prosperity of Indian forest which is largely collected as raw materials for production of drugs. Ethnobotany involves the mere relationship between indigenous people with the flora and vegetation of the region.

Northeast region of India is much rich in monocotyledonous flora whereas NE Region is known as the "Floristic Gateway" of India and also rich in ethnobotanical study for its diverse aboriginal communities and tribes. These areas have ample scope for ethnobotanical study due to its rich folklore. The Bodo community is important tribe of Udalguri District. Uses of plant made by different tribes particularly by the Bodos are still unknown hence an attempt has made to explore some of the unknown species of the plants by the local people of this region. The tribal people used many plants for their own traditional lore. Uses of plant made by the Bodos are still unknown hence an attempt has made to explore some of the unknown monocot species of the plants by the local people of this region. However, many such plants yet to be reported from this area. Therefore, a study was undertaken to explore the

knowledge of the plants used by the Bodo tribes, particularly Udalguri district (BTAD) area.

MATERIALS AND METHODS

Study site

The present study was undertaken to document traditional uses of plants of Bodo tribe. The field study was carried out in 10 villages of Udalguri district (BTAD) of Assam, located in latitude 26° 30'-20° 40'N and longitude 92° 15'-92° 23' E, mostly inhabited by Bodo. The average altitude of the district is 590 feet. The annual rainfall varies from 1500 mm to 2600 mm. The total geographical area of the district is about 1,985,69 sq km. The district position of the Udalguri district is bounded by Bhutan and Arunachal Pradesh towards North, Sonitpur district in the East, Darrang district in the South and Baska district in the west. The area is high plain land and covered with moderate forest towards northern part of the district.

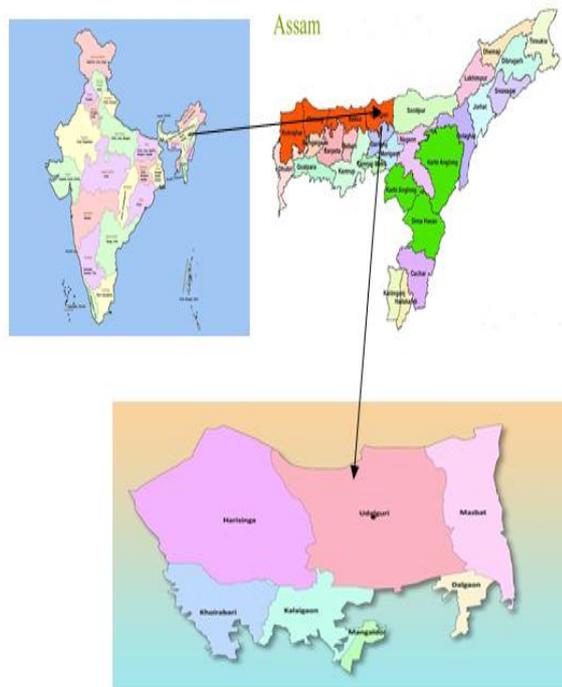


Figure 1. Map of the study area.

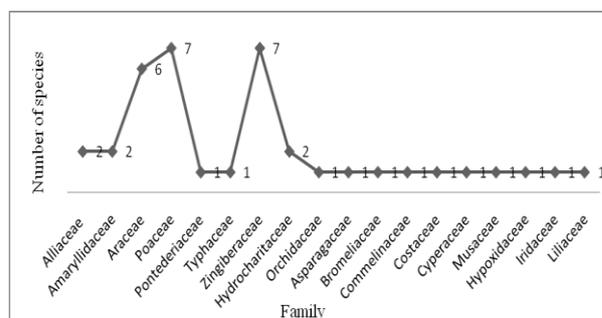
The surveyed Bodo-villagers were Gormara, Singaon, Sonai, Bathabari, Goraimari, Gersong, Orang and Naoherua.

METHODS

A systematic ethnobotanical uses of some monocot flora survey was carried out in different selected Bodo villages of Udalguri district namely Gormara, Singaon, Sonai, Bathabari, Goraimari, Gersong, Orang and Naoherua. The relevant information regarding the traditional farming practice by the local people were gathered from the elderly farmers using Participatory Rural Appraisal (PRA) techniques like interview, observation and discussion. Frequent field trips were arranged in order to collect information about the folk/culinary knowledge of monocot medicinal plants used by the local Bodo people to cure them from various diseases. During field trips, the questionnaire (Medicinal Species Datasheet) was used to interview the local inhabitants, older people including both men and women, who were familiar with traditional uses of indigenous plants. Interviews were conducted with local people (Oja) in different Bodo villages individually. Repeated queries were made to get the data confirmed. The cropped plants species cultivated in jhum field were collected from the study sites and were made into herbarium specimens following Jain and Rao (1977) and later identified with the help of local flora and available references. The monocotyledonous plants have been studied and identified with the help of taxonomic literature and authentic herbarium specimens in herbaria of Botanical survey of India, Shillong. The herbarium specimens were deposited in the Department of Botany, University of Science and Technology, Meghalaya.

RESULTS AND DISCUSSION

The monocotyledonous plants have been described here with proper technical name, family, vernacular name (Bodo) and uses (Table 1). Thirty eight (38) monocot species belongs to 18 families were collected and recorded for its medicinal values. Details of the family, parts' used and medicinal values of the medicinal plants were given in the Table 1. The poaceae and Zingiberaceae forms the largest family with 7 species, followed by Araceae (5), Verbanaceae (6) Alliaceae (2), Amaryllidaceae (2), Hydrocharitaceae (2) (Figure 2).



Various plant parts such as leaves, roots, stems, flowers, fruits, barks, seeds, gum, rhizomes etc. were used for medicinal purposes. The recorded species belong to different life forms, i.e., shrubs (2), herbs (30), climbers (1), Epiphytic herbs (1) and Aquatic Herb (4) (Figure 3). As per plant parts used, leaves (11) were predominant, followed by tuber (6), root (5), shoot (5), whole plant (4), bulb (3), flower (2) etc. (Figure 4).

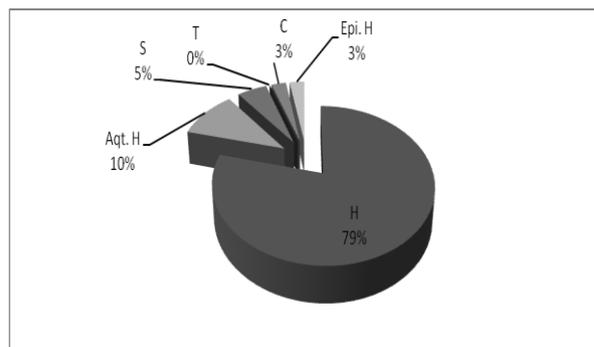


Figure 3. Habits of the plant species found in the study area.

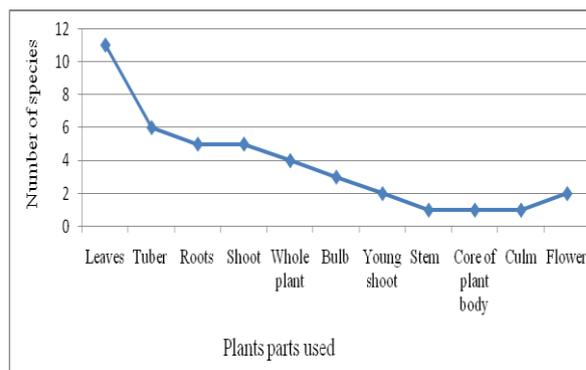


Figure 4. Parts of the monocot plants used in different purposes.

Most of the plants had more than one part used in combination for medicinal purposes. These different plant parts are used in the form of fresh juice, latex, powder, paste, decoction, direct use for the cure of illness. Leaves were found to be the most useful part and applied frequently in the paste and juice for curing various ailments. During the investigation it was observed that the same plant used for the treatment of different disease. From the study site it was observed that almost all the people use some sort of medicinal plants in their everyday life.

These medicinal plants use to cure many types of ailments. Different medicinal plants are used for the management of several diseases like body pain, cough, jaundice, dysentery, ulcers, leprosy, diarrhea, piles, fever, asthma, malaria, headache, stomach trouble, hypertension, piles, bleeding, skin problems etc.

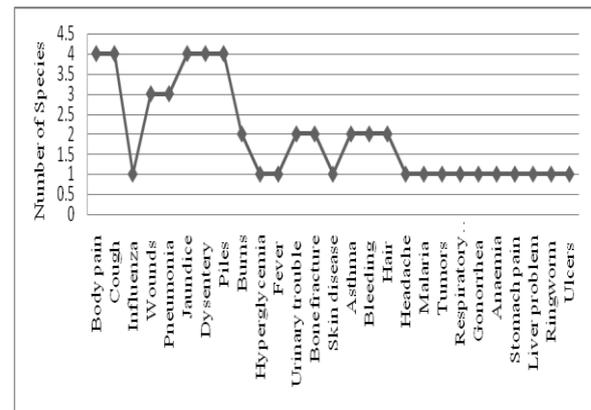


Figure 5. Plants used for different diseases.

During the study it was found that, the elder persons (above 50 years of age) of the family possess more knowledge regarding medicinal plants use and identification of than that of younger generations. Data also showed that, females knew more about the usage of medicinal plants than that of male. Most of the plant parts used for curing ailments is gathered from forest, but some rural people are keen to raise certain species with medicinal properties.

Table-I: Ethno-medicinal monocot plant used by traditional healers from remote Bodo villages of Udalguri district (BTAD) Assam, India.

Sl No.	Botanical name	Local name (Bodo)	Family	Habit	Parts used	Mode of preparation	Traditional use/ Name of disease
1	<i>Allium cepa</i> L.	Sambram	Alliaceae	H	Bulb	Cut a bulb into pieces + one spoon mustered oil mixed to it, then roasted for a few minutes. It is applied on infected area	Body pain, wounds, sudden cut and in body heating
2	<i>Allium sativum</i> L.	Sambram gufur	Alliaceae	H	Bulb	4-5 pieces of garlic + kalajira (<i>Cuminum sp.</i>) fried together until it become yellow. 2-3 pieces of garlic and 4-5 leaves of <i>Ocimum sanctum</i> mix rawly. Juice of raw garlic. Eating pieces of raw garlic everyday with meal.	Influenza, cold and cough, fever. Applied for baby cry. Abscess, earache, sprains. Hyperglycemia.
3	<i>Crinum defixum</i> Ker.Gawl.	Hagrani Sambram	Amaryllidaceae	H	Bulb, Leaves	Bulb is covered in sudden burnt area of the body. Juice of leaves applied minimum twice a day	Burns. Earache, skin diseases and to reduce inflammation.
4	<i>Crinum pratens</i> Herb. (= <i>C. asiaticum</i> L.)	Khanari	Amaryllidaceae	H	Leaves, Rhizome, Tuber	On the dorsal side of the fresh leaves polishing castor oil/mustard oil hit into the fire massaged the aching muscles and swelling part for two times. Decoction of tuber drink one cup to relief sudden stomach pain.	Pain of the vein and arteries. Stomach pain, diseases of spleen

5	<i>Acorus calamus</i> L.	Boch	Araceae	H	Rhizome, Leaves	Equal portion of each fresh rhizome + <i>Ocimum</i> (Tulsi) + Gon - gaithen are grind together and with the juice massage body of the baby gently. Fresh juice of leaves with gently warming water. Decoction of rhizome.	It is used to stop afraid and cry. Baby bathing. Skin affections, hair washing.
6	<i>Alocasia indica</i> (Lour.) Koch.	Thaso manai	Araceae	H	Tuber	Tuber of it + tuber of <i>Homalomena aromatica</i> + whole plant of <i>Equisetum</i> (approximately 50 gm) are grind together with a few drops of water and then allow to plastered / wrapped infected part of bone fracture until it dried.	Rejoin in bone fracture
7	<i>Colocasia esculenta</i> (L.) Schott.	Thaso gwswm	Araceae	H	Whole plant	Edible culinary. Ground corm is apply on cuts, burns and for relief of honeybee and scorpion sting.	Anaemia Body pain.
8	<i>Homalomena aromatica</i> (Roxb.) Schott.	Thaso thukhru	Araceae	H	Tuber	Sufficient amount of tuber + <i>Alocasia indica</i> + <i>Equisetum</i> + Aloevera are grind together then paste over infected area and wrapped tightly for 3 days interval until re join for 2-3 months	bone fracture
9	<i>Lasia spinosa</i> Thw	Sembra	Araceae	H	Young shoot	Delicious culinary	Pneumonia
10	<i>Typhonium trilobatum</i> (L.) Schott.	Bolamuli	Araceae	H	Tuber	100 gm tuber with a 5gm of castings of <i>Pheretima</i> (earthworm) grind and mix nicely. Then the mixture is paste over suck by the mollusos (Ganler)	Pain, swelling.
11	<i>Asparagus racemosus</i> Willd.	Satmul	Asparagaceae	Cl	Roots	Decoction of roots are prescribed to drink in empty stomach everyday in the early morning.	piles, jaundice, urinary disorders
12	<i>Ananas comosus</i> (L.) Merr.	Rwimali/ Anaros	Bromeliaceae	H	Shoot	A shoot of it is grind + 1 glass juice of <i>Saccharum officinarum</i> L. (Sugarcane) mix properly and the extract is used 2 spoonfull twice a day after meal.	Hi cough.
13	<i>Commelina benghalensis</i> L.	Gdeb bifang	Commelinaceae	H	Leaves, stem, young shoot	Juice of leaves used externally on human skin. The juice exceded from the stem. Young shoot are make curry with magur fish for weak patient after fever.	Leprosy, skin irritation. Eye sore. Used to get body strength.
14	<i>Costus speciosus</i> (koen.) Smith.	Daola khungur	Costaceae	H	Rhizome	Equal portion minimum 100g each rhizome of <i>costus speciosus</i> + leaves of <i>Cajanus cajan</i> + <i>Averrhoa carambola</i> are grind together. Extracted juice is boil and used twice a day after meal	Jaundice

15	<i>Cyperus rotundus</i> L.	Khaya hagra	Cyperaceae	H	Rhizome	Mixture of 200 gm of rhizome of <i>Cyperus rotundus</i> & <i>costus speciosus</i> +bark of <i>Azadirachta indica</i> are grind. A juice were boil in litre of water and reduced the volume to one fourth. 2-4 spoons of decoction were prescribed after meal for 10 days. During those days diet should be pure vegetation.	Stomach pain, dysentery.
16	<i>Ottelia alismoides</i> (L.) Pers.	Dainithalir	Hydrocharitaceae	A.H.	Leaves	Leaves are mixed more or less 1kg + shoot of <i>Ipomea aquatic</i> (mande) + <i>Allium sativum</i> + <i>Lasia spinosa</i> + <i>Costus speciosus</i> + <i>Ocimum sanctum</i> + <i>Centella asiatica</i> + <i>Typha angustata</i> were grind with sufficient water. A juice was boiling in a liter of water ½ glass of decoction were prescribed twice / thrice a day after meal.	Pneumonia
17	<i>Vallisneria spiralis</i> L.	Daini kharai	Hydrocharitaceae	A.H	Whole plant	Whole plant + <i>Ottelia alismoides</i> + water fern + <i>centella asiatica</i> + <i>Hydrocotyle sibthorpioides</i> + <i>Anagallis arvensis</i> L. (Sonafuli) are mixed equal amount each to make 1kg dried and prepared bolus dried under the sunlight. 4-5 bori are boil in water ½ glass are prescribed twice a day after meal.	Itching, measles
18	<i>Curculigo orchoides</i> Gaertn.	Hagrani goi	Hypoxidaceae	H	Leaves, Rhizome	Decoction of leaves are apply over the infected area. Juice of rhizome is prescribed.	Whitlows, piles, jaundice, asthma.
19	<i>Belamcanda chinensis</i> (L.) DC.	Surjokranti	Iridaceae	H	Roots	Sufficient amounts of Roots + <i>Houttuynia cordata</i> Thunb. (Maisundri) + <i>centella asiatica</i> (L.) urban (manimuni geder) + <i>Hydrocotyle sibthorpioides</i> lamk. (manimuni fisa) are grind together. Decoction is boiled in water and prescribed ½ glass twice a day after meal.	respiratory problem, asthma
20	<i>Aloe barbadensis</i> Mill.	Sal-khungri	Liliaceae	H	Leaves	Decoction of leaves are apply over the body externally. Internally leaf juice are prescribed.	Burns, wounds, sore eyes, skin disorders. Piles, chronic ulcers, liver and spleen enlargement.
21	<i>Musa balbisiana</i> Colla.(= <i>M.sapi entum</i> var. <i>pruinosa</i> king.ex. Cowan.)	Thalir athia	Musaceae	H	Core of plant body	A little amount of central core from stem and <i>Costus speciosus</i> are grind and paste on human head externally.	Headache
22	<i>Dendrobium aphyllum</i> (Roxb.)	Daothu bibar	Orchidaceae	Ep. H.	Leaves	Leaves (equal amount each) + <i>Clerodendrum viscosum</i> (mwkhwna) + <i>Crinum pratens</i>	body pain

	Fischer.					(khanari) + <i>Murrya koenigii</i> are grind together. Decoction of it prescribed to 2 spoons twice a day after meal.	
23	<i>Axonopus compressus</i> (Sw.) P.Beauv.	Dabsa hagra	Poaceae	H	Whole plant	Whole plant of it + <i>Cynodon dactylon</i> + roots of <i>Carica papaya</i> L. (mwdwmful) are mixed equally to 1 kg grind. A juice put in raw cow milk (250ml) prescribed to drink morning, noon and evening before food.	Bleeding
24	<i>Chrysopogon aciculatus</i> (retz.) Trin.	Samthai	Poaceae	H	Roots	Decoction of roots used in sudden stomach pain. Roots are pull out facing eastern on Saturday and Tuesday + bones of wild animal are put into the Tabis and wear on neck.	Stomach pain. Khetra (causing horror).
25	<i>Cymbopogon nardus</i> (L.) Rendle.	Chitranelia	Poaceae	H	Leaves	The infusion of the leaves is important	Stomachic, carminative
26	<i>Cynodon dactylon</i> (L.) Pers.	Daori hagra	Poaceae	H	Whole plant	The juice of the plant is applied externally to fresh cuts and wounds. A few branch of the plant deep with a broze coin into a glass of water whole night then prescribed to drink empty stomach.	Bleeding urinary trouble
27	<i>Imperata cylindrica</i> (L.) P. Beauv.	Thuri	Poaceae	H	Roots	Roots extract prescribed to drink.	diarrhea, dysentery, gonorrhoea
28	<i>Saccharum officinarum</i> L.	Khuser	Poaceae	S	Culm	Juice of culm is drunk.	jaundice, urinary trouble, hiccough
29	<i>Saccharum spontaneum</i> L.	Khasi hagra	Poaceae	S	Leaves, roots	Leaves bundle burn with elephant's faecal matter to allow more smoke to warm foot. Roots extract is internally used.	irritating sore in foot, body pain.
30	<i>Monochoria hastate</i> (L.) Solms.	Ajwnai	Pontederiaceae	A.H.	Flower, Leaves	Flowers as delicious curry. Leave juice is given to children.	Alterative and tonic. secreting more saliva
31	<i>Typha angustata</i> Chaub and Bory.	Ala	Typhaceae	A.H	Flower, Shoot	Flowers allow drying properly under sunlight, burning them taken heat on foot. Young shoots are eaten by human.	Itching, ringworm. stomach problem, pain
32	<i>Alpinia nigra</i> (Gaertn.) Burt. [= <i>A.allughas</i> (Ret z.) Rose.]	Tharai	Zingiberaceae	H	Rhizome	Rhizomes are eaten rawly	Respiratory troubles.
33	<i>Curcuma amada</i> Roxb.	Thaiju haizeng	Zingiberaceae	H	Rhizome	Rhizomes are eaten rawly.	Dysentery
34	<i>Curcuma aromatic</i> Salisb.	Khathri phul	Zingiberaceae	H	Rhizome	Juice extracted from rhizome (200g) of it + <i>Zingiber officinale</i> (200g) were prescribed 2 spoons twice a day after meal for one week.	Dysentery
35	<i>Curcuma domestica</i> Valet (= <i>C. longa</i> L.)	Haldi	Zingiberaceae	H	Rhizome	Grinded raw rhizome with milk and with honey treat many diseases.	Antitumor, arthritis, piles, antibacterial, blood purifier.

36	<i>Kaempferia galanga</i> L.	Sonfera	Zingiberaceae	H	Rhizome, tuber	Decoction of rhizomes + <i>Centella asiatica</i> + <i>Hydrocotyle sibthorpioides</i> + dalmisri + bismuri are prescribe to boil in a little water and to have 3 times a day after meal.	treat typhoid, pneumonia, malaria, stomachic
37	<i>Kaempferia rotunda</i> L.	Khatri rothing	Zingiberaceae	H	Tuber	Raw tubers are used to eat. Rhizome extract is given on head	Gastric complaints, tumors. Growth of hair.
38	<i>Zingiber officinale</i> Rose.	Haizeng	Zingiberaceae	H	Rhizome	Rhizome + <i>Piper nigrum</i> L. + stem of <i>piper betel</i> L. + <i>Syzygium aromaticum</i> L. + shoot of <i>Leucas aspera</i> + <i>Ocimum sanctum</i> + <i>Piper longum</i> L. are grind together into 100 ml of water to mix properly. The dried tablet prescribed to deep in honey and 1-2 tablets asked to swallow 3 times in a day.	dry cough

CONCLUSION

Almost in every village, there exists a person who has a good knowledge of medicinal plants and is capable of healing diseases by applying medicine obtain from plants. They are called "Oja" (traditional healers). It is found that the practices follow generation to generation. The traditional healers were using these plants are either used singly or in combinations with some other plants or plant parts to treat the various ailment and diseases. It is seen that the various plants used by the Bodos are found nearby their settlement. Though the traditional plants used by them are wild, they domesticated and conserved them nearby their houses. The traditional methods of treatment are still prevalent within tribal communities of Assam. But the folk culture and tradition is now under serious threat and gradually losses the traditional practices due to the younger generations are gradually traditional migrating to town and cities. So, the evaluation of Bodo knowledge, the conservation of monocot plants and scientific documentation has great significance and become an essential constituent. There is an urgent need to protect the information, traditional knowledge and wisdom for conservation of various valuable monocotyledonous plants in near future.

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