

## **CHAPTER-V**



### **RESULTS**

#### **ETHNOBOTANICAL USAGE OF BODO AND RABHA COMMUNITY OF UDALGURI DISTRICT**

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##### 5.1 BODO AND RABHA PEOPLE OF UDALGURI DISTRICT

Bodos and Rabhas are the scheduled tribe of India. The Bodos and the Rabhas people are the mainly inhabitant tribes of Assam. As the community they have their own languages including their cultural heritage, tradition, customs and festivals to represent themselves and culturally they are rich community.

The Bodos and the Rabhas are the major tribe inhabiting in Udalguri district. Since Bodo's and Rabha's are living around the forest and nature; they have some traditional beliefs and knowledge in plants and forests. Perhaps the availability and richness of forests and plants of the areas where they inhabit may be the important reasons how they get influence with plants and forests in their life. The scientific documentation of the plant species which are used in their life will definitely give encouragement to the tribal community. The preservation of their indigenous knowledge with plant and forest may be important tools for conservation of these plant species.

As per the 2001 census, among the scheduled tribes (STs), in the Assam the major populated Scheduled Tribe Community is Bodo

**Table 6: Population of Bodo and Rabha in Assam (according to 2001 census)**

Sl. No	Name of the STs	Total population	Proportion to the total ST population
1.	Bodo	13,52,771	84.0%
2.	Rabha	2,77,517	40.9%

Secondary source

The percentage of population of Udalguri district, viz. Bodo (81.75%) and Rabha (11.55%) as per 2001 census.

## **5.2 INFORMATION RECORDED DURING PERIOD**

The present study was carried out among the Bodo's and the Rabha's tribes inhabiting in Udalguri district, BTAD Assam, India. During the field survey, some monocot plants and plants parts utilized by Bodo and Rabha tribes are recorded. Udalguri district is regarded as a resourceful Monocot plants, include resources are food and vegetable plants, medicinal plants or drug yielding plants, food adjuncts, beverages and plants of miscellaneous uses. The information regarding the utility of different Monocot plants in different purpose was collected from elderly person, medicine men and religious headman. Data was collected by questionnaire, interviews and discussion method among local headman in their local language. Information collected in different parts of popular traditional herbal medicine practitioners of Bodo and Rabha of Udalguri district are viz., Mr. Lahit Mochahari (55 yrs.), Mrs. Purnimai Daimari (52 yrs.), Mr. Ratna Daimari (50 yrs.), Mr. Kharab Daimari (75 yrs.), Mr. Robi Daimari (68 yrs.), Mr. Magon Basumatari (90 yrs.), Mr. Martin Basumatari (60 yrs.), Mrs. Ranjita Basumatari (62 yrs.), Ms. Jayanti Daimari (55 yrs.), Mr. Darendra Basumatari (66 yrs.), Mr. Philip Swargiary (68 yrs.) and his wife. Mr. Chandra Daimari (82 yrs.). Mrs. Amti Rabha (70 yrs.), Mr. Hayantha Rabha (51 yrs.), Mr. Queen Rabha (91 yrs.), Mr. Sukra Rabha (48 yrs.), Mr. Mangal Rabha, Mr. Jaynath Rabha, Mr. Roma Rabha, Mr. Prasit Rabha, Mr. Ananta Rabha, etc.

### **PROFORMA**

#### **A sample questionnaire adapted version from Jain (1987)**

Serial No.:
Voucher Specimen Ref. No.:
Recorded by:
Date:
Remarks:

**0.1. Proforma for background information:**

- 0.1.1. Village: .....
- 0.1.2. Sub-Division: .....
- 0.1.3. District: .....
- 0.1.4. Altitude: .....
- 0.1.5. Area of the Village: .....
- 0.1.6. Population: .....
- 0.1.7. Ethnic group: .....
- 0.1.8. Religion: .....
- 0.1.9. Literacy: .....
- 0.1.10. Language spoken: .....
- 0.1.11. Occupation: .....
- 0.1.12. Economic status: .....
- 0.1.13. Rainfall, humidity, temperature, soil conditions etc.: .....
- 0.1.14. Area under forest and nature of forest: .....
- 0.1.15. Farming and Agriculture: .....

**0.2. Proforma for information to be collected in the field:**

- 0.2.1. Collection No.: .....
- 0.2.2. Date of collection: .....
- 0.2.3. Place of collection: .....
- 0.2.4. The collected specimen is wild or cultivated: .....
- 0.2.5. Name of the informant: .....
- 0.2.6. Community: .....
- 0.2.7. Clan: .....
- 0.2.8. Age: .....
- 0.2.9. Sex: .....
- 0.2.10. Language spoken: .....
- 0.2.11. Field of expertise: .....

**0.3. Proforma for information to be collected about the plant and its usage:**

- 0.3.1. Name: .....
- 0.3.2. Address: .....

- 0.3.3. Occupation: .....
- 0.3.4. Date: ..... Collection no.: .....
- 0.3.5. Taxon: .....Family: .....
- 0.3.6. Local name: (specify language): .....
- 0.3.7. Locality (specify): ..... Habit: ..... Monocot: .....
- 0.3.8. Height: .....
- 0.3.9. Bark character: .....
- 0.3.10. Smell: .....
- 0.3.11. Latex : present: .....Absent: .....
- 0.3.12. Colour: .....
- 0.3.13. Parts used in medicine:
- Root: .....Stem:.....Twig: ..... Bark: ..... Fruit: ..... Seed: .....
- Shoot: ..... Leaves: .....Flower: .....
- 0.3.14. How a plant parts used: .....
- Fresh: ..... Dried: ..... Boiled: .....
- 0.3.15. Other plant added to it:
- 0.3.16. Method (S) of preparation for use:
- Powdered: .....Extracted with cold water:....
- With the hot Water: ....Boiled: .....Any other: .....
- 0.3.17. Mode of administration: .....
- 0.3.18. Doses: .....
- 0.3.19. Any other contact or information: .....
- 0.4. Pharmacology as practiced by them: .....**
- 0.5. Belief and superstition: .....**
- 0.6. Reasons for declining of ethno medicine in the area: .....**

Place:

Name of the informant:

Date:

Signature:

**GLIMPSES OF THE FIELD WORK OF ETHNOBOTANY OF  
BODO AND RABHA COMMUNITY OF UDALGURI DISTRICT**



**A. B. C. Medicine Man : Informant, D. Medicine Man,  
E. Informant, F. Medicine Woman**





**A.** Elder Man of the village, **B. C.** Medicine Man discussion about his Medicinal plants, **D.** Informants about Medicinal plants, **F.** Interpreters and Medicine woman collecting Medicinal plants.



**A.** Medicine Man with his dried medicine, **B.** Prepared herbal medicine, **C.** Medicine Man collecting medicinal plants, **D.** Medicine Man: Informant, **E.** Dried Medicinal plants, **F.** Medicine Woman, **G.** **H.** Interpreters.





**A.** Informant, **B. C.** Medicine Man, **D. E. F.** Medicine Man collecting medicinal plants in his garden, **G. H.** Rabha Women with Traditional Attire.



**A. B. C. D.** Ethno veterinary or Ethno livestock





**A. B. C. D. E. F. G. H.** Utilisation of bamboo in different purposes  
by Bodo and Rabha community of Udalguri district



A Bodo Girl with Traditional Attire



A Rabha girl with Traditional Attire



### 5.3 MONOCOT PLANTS USED BY BODO AND RABHA PEOPLE OF UDALGURI DISTRICT

**1. Edible plants:** Several plant parts of Monocot plants like leaves, shoot, tuber, rhizome, culm, flower, fruit, seed, etc. are consumed by Bodo and Rabha community inhabiting both urban and rural area of greater Udalguri district are given below:

**i. Leaves and Shoot:** The leaves and shoots of most of the species like *Allium cepa* L., *Allium sativum* L., *Colocasia esculenta* (L.) Schott, *Lasia spinosa* Thw. and *Bambusa tulda* Roxb. are cooked and consumed as leafy vegetables.

**ii. Tubers:** The tubers of *Dioscorea alata* L., *Dioscorea bulbifera* L., *Dioscorea esculenta* (Lour) Burkill., *Alocasia acuminata* Schott., *Alocasia cuculata* (Lour.) G. Don, *Alocasia odora* (Roxb.) K. Koch., *Amorphophallus bulbifera* (Schott.) Bl. are cooked as vegetables due to rich in starch.

**iii. Flowers:** The flowers of *Musa balbisiana* Colla., *Monochoria hastata* (L.) Solms., *Monochoria vaginalis* L., *Colocasia esculenta* (L.) Schott a cooked with small fishes by adding rice powder named “Ondla” a special curry by Bodo people. Rabha people also cooked as vegetables.

**iv. Fruits:** The ripe fruits of *Ananas comosus* (L.) Merr., *Musa assamica* G. Mann., *Musa balbisiana* Colla., *Musa champa* Hort., *Musa chinensis* Sweet., *Musa sapientum* L. are consumed raw, but the young green fruit of *Musa paradisiacal* L. is cooked as vegetable as a source of iron element content. The fruit of *Cocos nucifera* L. and *Phoenix dactylifera* L. are consumed as raw.

**v. Seeds or Grains:** The grain of *Eleusine coracana* Gaertn., locally made wine called ‘jwo’, by the Bodo people. The seeds of grass species viz. *Oryza officinalis* Wall. and *Setaria glauca* (L.) P. Beauv., were consumed as rice in past by the Bodo and Rabha tribes in the region.

**2. Dye yielding plants:** The rhizome of *Curcuma longa* L. was traditionally used for dyeing yarns and garments by Bodo and Rabha women since long time.

- 3. Narcotics and masticatories:** The fruit of *Areca catechu* L. is chewed both raw and dried after meal traditionally by Bodo and Rabha people.
- 4. Plants as firewood:** Specially culms of all bamboo species and species of family Areaceae are utilized as fire wood by poor people of the region.
- 5. Aromatic plants:** The various plant parts like leaves of *Cymbopogon nardus* (L.) Rendle; rhizome of *Acorus calamus* L. and *Curcuma amada* Roxb.; leaves and rhizome of *Zingiber officinale* Roscoe are used as flavouring agent in various dishes due to presence of aroma by the Bodo and Rabha people.
- 6. Spices and condiments:** The leaves and bulbs of *Allium cepa* L., *Allium sativum* L., leaves and rhizomes of *Zingiber officinale* Roscoe; dried rhizome powder of *Curcuma longa* L.; dried seeds of *Amomum aromaticum* Roxb. and *Elettaria cardamomum* (L.) Maton are used as spices and condiment with fish and crabs frequently by the Bodo and Rabha people.
- 7. Green manure producing plants:** A few delicate aquatic Monocot plant species viz. *Pistia stratiotes* L., *Najas minor* All., *Eichhornia crassipes* (Mart.) Solms, *Ottelia alismoides* (L.) Pers. are used as manure after their decomposition in their agricultural field.
- 8. Fodder plants:** Grasses and sedges from the family Cyperaceae and Poaceae are used as fodder plant for domestic animals in the area. Aroids species like *Colocasia esculenta* (L.) Schott, *Alocasia odora* (Roxb.) K. Koch., etc. are used as fodder plant specially for pig. The fronds of *Lemna perpusilla* Torrey., *Spirodela polyrrhiza* (L.) Schleid., *Wolffia arrhiza* (L.) Hook ex Wimm. are used to feed duck.
- 9. House making and other house-hold uses:** The culm of *Bamboo spp.* and *Calamus spp.* are utilized by Bodo and Rabha people for making different kinds of furniture, mat, basket, fishing equipment, agricultural equipment, weaving equipment, fencing and wall of houses, etc. the leaves of *Imperata cylindrica* (L.) Raeusch. and culm of *Phragmites karka* Trin. ex Steud. are utilized as house roof

thatching. Small and straight culm of *Bambusa pallida* Munro is used to make a “flute”, (Sifung-Bd.) and (Thorkha-Bd.) are traditional musical instrument of Bodo and Rabha people during Rongali Bihu. Leaves of *Cocos nucifera* L. and *Phoenix dactylifera* L. are used as mate, wall, gate, basket, etc.

**10. Oil yielding:** Oil yielding plants like *Cocos nucifera* L., *Cymbopogon nardus* (L.) Rendle and *Oryza sativa* L. are also used by fermentation.

**11. Rope making:** Stem of *Alpinia nigra* (Gaertn.) Burtt.; fruit bark of *Cocos nucifera* L.; leaves of *Typha angustata* Bory & Chaub. used as rope for tie bundles of fire wood, particularly harvesting time of rice plant and so on.

**12. Ritual activities:** The present study could document 11 Monocot plant species from 6 families which are associated with the socio-cultural and religious beliefs among the Bodo and Rabha tribe of Udalguri district.

**Table 7: List of Monocot plant species used in ritual activities by Bodo and Rabha people**

Sl. No.	Scientific Name (Bd. and Rh. Name)	Family	Ritual Uses
1.	<i>Allium sativum</i> L. [Bd.-Sambram-Gufur] [As. and Rh.-Nohoru]	Liliaceae	4-5 cloves mixed with the leaf of <i>Ocimum sanctum</i> L. is used to drive away the evil spirits by Bodo and Rabha peoples.
2.	<i>Alpinia nigra</i> (Gaertn.) Burtt. [Bd.-Tharai] [As. and Rh.-Bogitora]	Zingiberaceae	Leaves are used to traditional packaging materials “Gwkha-gwkhwi”, a kind of social prepared during ‘Bwisagu’, The

			Assam's new year by Bodo people.
3.	<i>Ananas comosus</i> (L.) Merr. [Bd.-Raimali] [As. and Rh.-Anaros]	Bromeliaceae	Young leaves are used to preparation of 'Amao', the startle cake for 'jwo', a kind of rice beer which is cultural and social drinks of Bodo's.
4.	<i>Areca catechu</i> L. [Bd.-Goi] [As. and Rh.-Tamul]	Arecaceae	It is considered as holy fruits by Bodo and Rabha tribes and used to offered to God's and Goddesses.
5.	<i>Bambusa tulda</i> Roxb. [Bd.-Owa] [As. and Rh.-Bah]	Poaceae	Bamboo plant has relation from birth to death of Bodo and Rabha people. Sharp bamboo flat blade like stick is used to cut the navel (nari-Bd.) of new born baby. This bamboo is used strictly to carry the death soul by bamboo carrier.
6.	<i>Curcuma longa</i> L. [Bd.-Haldwi] [As. and Rh.-Halodi]	Zingiberaceae	The rhizome extract is used to bathing before doing any sacred work. It is seen among the Bodo and Rabha



			people.
7.	<i>Cocos nucifera</i> L. [Bd., As. and Rh.-Narikol]	Areaceae	It is considered as holy fruit and used to offered to God's and Goddess by Bodo and Rabha people.
8.	<i>Colocasia esculenta</i> (L.) Schott [Bd.-Thaso Gwswm] [As. and Rh.-Kosu kola]	Araceae	Young shoots and leaves are used in preparation of fermenting fish known as "Napham," which is a traditional heritage and social dish of Bodo.
9.	<i>Cynodon dactylon</i> (L.) Pers. [Bd.-Dubrihagra] [As. and Rh.-Duburi Bon]	Poaceae	Twigs are used to sprinkle holy water over (Dai Santi) during worship by the Bodo and Rabha people.
10.	<i>Musa balbisiana</i> Colla [Bd.-Thalirathia] [As. and Rh.-Athiakol]	Musaceae	The whole plant is used to social and religion activities by the Bodo and Rabha people.
11.	<i>Oryza sativa</i> L. [Bd.-Mai] [As. and Rh.-Dhan]	Poaceae	Seeds or grains are used in many religious occasion by Bodos and Rabhas. It is also used to preparing traditional rice beer or wine during the festivals and

			marriage ceremonies.
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Primary source

It makes us understand that how plants are important in human life which are used in food, medicine, cloth and shelters. In the Udalguri district, both Bodo and Rabha people are contributing in conservation of plants and forest of their own interest to check their inherent ritual activities. These activities of conserving and using of monocot plant species in ritual activities has significance in today's crisis of biodiversity conservation.

#### **5.4 MEDICINAL MONOCOT PLANTS USED BY BODO AND RABHA PEOPLE OF UDALGURI DISTRICT**

A total number of 42 Monocot flora of Udalguri district are utilized by Bodo and Rabha people inhabiting there in as medicine were recorded. In an ethno medicinal Monocot plants, various parts namely root, stem, leaves, fruit, flower, bark, seed, etc. are used in one way or the other. Often the same plant is used for several preparations by using different plant parts. In the interviews it was observed that there were highly significant differences between age of respondents and their knowledge of medicinal plants. Respondents who were 45 years and above were generally more knowledgeable than those who are younger. The most knowledgeable respondents were used to prepare the medicinal combination as home practices. The local medicine man known as "Ojha" or "Kobiraj" or "Bej" were very comparative in sharing their knowledge in preparation and administration of medicine. Administration of medicines (methods) are varied. Several were oral and others in the form of poultice and still others are inhalation, rubbing or massaging. There are also instances of magical religious beliefs associated with administration of medicine. After distinctive analysis with standard literature like Indian medicinal plants Chopra *et al* (1956); Kirtikar and Basu (1975); Boissya *et al* (1981, 1982); Barua and Sharma (1984, 1987); Hajra and Baishya (1990); Jain (1991); Brahma (1992); Dutta and Nath (1998); Gogoi and Borthakur (2001); Barua *et al* (2003); Bora (2003); Gogoi and Das (2003); Gogoi *et al* (2003); Borthakur *et al* (2004); Mao *et al* (2009); Sharma and Joshi (2010); Deka

and Sarma (2010); Nath (2011); Das and Teron (2014) have been studied, but it was unveiled that many Monocot plant species of Udalguri district can be treated as medicinal plants. These comprise as follows:

**Table 8: List of Monocotyledonous Medicinal plants used by the local Bodo people of Udalguri district**

Sl. No	Botanical Name (Bodo Name)	Family (Life form)	Parts used and mode of preparation	Mode of used or name of disease
1.	<i>Acorus calamus</i> L. [Boch]	Araceae [H]	Rhizome and Leaves: Equal portion of each fresh rhizome, <i>Ocimum sanctum</i> L. (Tulsi) and Gon-gaithen (Bd. and As.) are grind together and with the juice rub body of the baby gently.  Fresh juice of leaves with gently warming water.  Decoction of rhizome.	Used to relief afraid and cry (causing horror).  Used to baby bathing. Used to cure skin disease and for hair washing.
2.	<i>Allium cepa</i> L. [Sambram]	Liliaceae [H]	Bulb: Cut a bulb into pieces and one spoon mustared oil mixed to it, then roasted for a few minutes. It is applied on infected area.	Uses to cure pain, wounds, cuts and body heating.
3.	<i>Allium sativum</i> L. [Sambramgufur]	Liliaceae [H]	Bulb: 4-5 pieces of <i>Allium sativum</i> L. (Garlic) and <i>Cuminum sp.</i> (Kalajira) are fried together until it become yellow. 2-3 pieces of <i>Allium sativum</i> L. (Garlic) and 4-5 leaves of <i>Ocimum sanctum</i> L. (Tulsi) are mix rawly.	Used to cure influenza, cold, cough and fever.  Used to cure afraid of babies  Uses to cure abscess, ear-ache, sprains.

			Juice of raw <i>Allium sativum</i> L. (Garlic). Eat pieces of raw seeds everyday with meal.	decrease glucose.
4.	<i>Aloe vera</i> (L.) Burm. f. [Sal-khungri]	Liliaceae [H]	Leaves: Decoction of leaves are applied over the body externally. Internally leaf juice are prescribed.	Used to cure burns, wounds, sore eyes, skin disorders. Used to cure piles, chronic ulcers, liver and spleen enlargement.
5.	<i>Alocasia indica</i> (Lour.) Koch. [Thasomanai]	Araceae [H]	Tuber: Tuber of <i>Alocasia indica</i> are to be added with tuber of <i>Homalomena aromatica</i> L. and whole plant of <i>Equisetum sp.</i> (all are 50 g) are grind together with a few drops of water and then allow to plastered or wrapped infected part of bone fracture until it dried.	Used to re-join in bone fracture.
6.	<i>Alpinia nigra</i> (Gaertn.) Burtt. [Tharai]	Zingiberaceae [H]	Rhizome: Rhizomes are eaten rawly.	Used to cure respiratory troubles.
7.	<i>Ananas comosus</i> (L.) Merr. [Rwimali or Anaros]	Bromeliaceae [H]	Shoot: A shoot of it is grind with 1 glass juice of <i>Saccharum officinarum</i> L. (Sugarcane) are mix properly and the extract is administered to have 2 spoonfull twice a day after meal.	Used to cure hiccough.
8.	<i>Asparagus racemosus</i> Willd. [Satmul]	Asparagaceae [CI]	Roots: Decoction of roots are prescribed to drink in empty stomach every day in the early morning.	Treated to cure piles, jaundice, urinary disorders.



9.	<i>Axonopus compressus</i> (Sw.) P. Beauv. [Dabsahagra]	Poaceae [G]	Whole plant: Whole plant of it, <i>Cynodon dactylon</i> (L.) Pers. roots of <i>Carica papaya</i> L. (Mwdwmful) are mixed equally to 1 kg grind . A juice put in raw cow milk (250 ml) prescribed to drink morning, noon and evening before food.	Used to cure nose-bleeding.
10.	<i>Belamcanda chinensis</i> (L.) DC. [Surjokranti]	Iridaceae [H]	Roots and Bulb: Sufficient amounts of Roots, <i>Houttuynia cordata</i> Thunb. (Maisundri), <i>Centella asiatica</i> (L.) Urban (Manimunigeder) and <i>Hydrocotyle sibthopioides</i> Lamk. (Manimunifisa) are grind together. Decoction is boiled in water and prescribed ½ glass twice a day after meal.	Treated to the diseases of respiratory tract like asthma.
11.	<i>Chrysopogonaciculatus</i> (Retz.) Trin. [Samthai]	Poaceae [G]	Roots: Decoction of roots used in sudden stomach pain. Roots are pull out facing eastern side on Saterdag and Tuesday and bones of wild animals are put into the Tabis (warmth) and wear on neck.	Used in stomach pain.  Used in khetra (causing horror).
12.	<i>Colocasia esculenta</i> (L.) Schott [Thasogswm]	Araceae [H]	Whole plant: Edible culinary. Ground corm is apply on cuts, burns and for relief of honey bee and scorpion sting. Edible culinary. Ground corm is apply on cuts, burns and for	Used in anaemic patient to increase 291aemoglobin .  Used to relief

			relief of honey bee and scorpion sting.	pain.
13.	<i>Commelina benghalensis</i> L. [Gadebbifang]	Commelinaceae [H]	Leaves, Stem and Young shoot: The juice of leaves are used externally on human skin. The juice is extracted from the stem. Young shoots are made curry with magur fish for weak patient.	Used to treat leprosy, skin irritation.  Used to treating sore eyes.  Used to get body strength.
14.	<i>Costus speciosus</i> (Koen.) Smith [Daola khungur]	Costaceae [H]	Rhizome: Equal portion minimum 100 g each rhizome of <i>Costus speciosus</i> (Koen.) Smith., leaves of <i>Cajanus cajan</i> (L.) Huth. (Khokhling) and <i>Averrhoa carambola</i> L. (Khambrenga ) are grind together properly then extracted juice is boil and used twice a day after meal.	Used to treat jaundice.
15.	<i>Crinum defixum</i> Ker.-Gawl. [Hagrani Sambram]	Amaryllidaceae [H]	Bulb and Leaves: Cut bulb is covered in sudden burnt area of the body. Juice of leaves applied minimum twice a day.	Used to get relief burns. Used to cure ear-ache, skin diseases and to reduced inflammation.
16.	<i>Crinum asiaticum</i> L. [Khanari]	Amaryllidaceae [H]	Leaves, Rhizome and Tuber: On the dorsal side of the fresh leave apply castor oil or mustard oil, hit into the fire then massaged the aching muscles and swelling part for two times. One cup of decoction of tuber is used to relief sudden stomach pain.	Used to relief pain of the vein and arteries. Used to cure stomach pain and also used to cure spleen disease.
17.	<i>Curculigo</i>	Hypoxidaceae	Leaves:	Used to cure

	<i>orchioides</i> Gaertn. [Hagrani Goi]	[H]	On the dorsal side of the fresh leaves polishing castor oil or 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.	whitlows.  Used to cure piles, jaundice and asthma.
18.	<i>Curcuma amada</i> Roxb. [Thaiju haizeng]	Zingiberaceae [H]	Rhizome: Rhizomes are eaten rawly.	Used to cure dysentery.
19.	<i>Curcuma aromatic</i> Salisb [Khathriphul]	Zingiberaceae [H]	Rhizome: Juice extracted from rhizome (200 g) of it and <i>Zingiber officinale</i> Roscoe. (200 g) are prescribed 2 tea spoonful twice a day after meal for one week.	Used to cure dysentery.
20.	<i>Curcuma longa</i> L. [Haldi]	Zingiberaceae [H]	Rhizome: Grinded raw rhizome with milk and with honey treat many diseases.	Used to cure anti-tumour, arthritis, piles, anti-bacterial and as a blood purifier.
21.	<i>Cymbopogon nardus</i> (L.) Rendle [Chitranelia]	Poaceae [G]	Leaves: The infusion of the leaves are important.	Used to reduce stomachic and carminative.
22.	<i>Cynodon dactylon</i> (L.) Pers. [Daori hagra]	Poaceae [G]	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.	Used to cure urinary trouble.
23.	<i>Cyperus rotundus</i> L.	Cyperaceae [G]	Rhizome: Mixture of 200 g of	Used to cure stomach pain

	[Khaya hagra]		rhizome of <i>Cyperus rotundus</i> L. and <i>Costus speciosus</i> (Koen.) Smith., bark of <i>Azarichta indica</i> L. are grind together till juice comeout. A juice were boil in a litre of water and reduced the volume to one fourth. 2-4 tea spoonful of decoction were prescribed after meal for 10 days. During those days diet should be pure vegetation.	and dysentery.
24.	<i>Dendrobium aphyllum</i> (Roxb.) Fischer [Daothu bibar]	Orchidaceae [Ep.H]	Leaves: Leaves (equal amount each), <i>Clerodendrum viscosum</i> Vent. (Mwkhwna), <i>Crinum pratens</i> Herb. (Khanari), <i>Murrya koenigii</i> (L.) Spreng. (Mwrsing) are grind together. Decoction of it prescribed to 2 spoons twice a day after meal.	Used to relief all kind of body pain.
25.	<i>Eleutherine balbosa</i> (Mill.) Urb. [Sambramgwja]	Iridaceae [H]	Bulb: Raw juice of bulb with water at least 1 cup is prescribed during stomach pain.	Used to cure stomach pain.
26.	<i>Homalomena aromatica</i> (Roxb.) Schott [Thaso thukhru]	Araceae [H]	Tuber: Sufficient amount of tuber of it, <i>Alocasia indica</i> (Lour.) Koch., <i>Equisetum</i> sp. and <i>Aloe barbadensis</i> Mill. are grind together then paste over infected area and wrapped tightly for 3 days interval until re join for 2-3 months.	Used to re-join in bone fracture.
27.	<i>Imperata</i>	Poaceae	Roots:	Used to cure

	<i>cylindrica</i> (L.) Raeusch. [Thuri]	[G]	Roots extract prescribed to drink.	diarrhea, dysentery and gonorrhoea.
28.	<i>Kaempferia galangal</i> L. [Sonfera]	Zingiberaceae [H]	Rhizome: Decoction of rhizomes, <i>Centella asiatica</i> (L.) Urban., <i>Hydrocotyle sibthorpioides</i> Lamk., dalmisri, bismuri are prescribed to boil in a little water and to have 3 times a day after meal.	Used to treat typhoid, pneumonia, malaria and stomache.
29.	<i>Kaempferia rotunda</i> L. [Khatri rothing]	Zingiberaceae [H]	Tuber: Raw tubers are used to eat. Extracted rhizome is given on head.	Used to cure gastric complaints, tumours. Used for proper growth of hair.
30.	<i>Lasia spinosa</i> Thw. [Sembra]	Araceae [H]	Young shoot: Delicious culinary.	Used to cure Pneumonia.
31.	<i>Monochoria hastata</i> (L.) Solms [Ajwnai]	Pontederiaceae [A.H]	Flower and Leaves: Flowers as delicious curry. Leave juice is given to children.	Used to get alterative and tonic. Used to get secreting more saliva.
32.	<i>Musa balbisiana</i> Colla [Thalir athia]	Musaceae [H]	Core: A little amount of central core from stem and <i>Costus speciosus</i> (Koen.) Smith. are grind and paste on human head externally.	Used to relief head-ache.
33.	<i>Ottelia alismoides</i> (L.) Pers. [Daini thalir]	Hydrocharitaceae [A.H]	Leaves: Leaves are mixed more or less 1 kg, shoot of <i>Ipomea aquatic</i> Forssk. (Mande), <i>Allium sativum</i> L., <i>Lasia spinosa</i> Thw. (Sembra), <i>Costus speciosus</i> (Koen.) Smith.,	Used to cure Pneumonia.

			<p><i>Ocimum sanctum</i> L.  <i>Centella asiatica</i> (L.)  Urban. And <i>Typha angustata</i> L.  (Ala) are grind with sufficient water. A juice were boil in a litre of water ½ glass of decoction were prescribed twice or thrice a day after meal.</p>	
34.	<p><i>Saccharum officinarum</i> L.  [Khuser]</p>	<p>Poaceae  [S]</p>	<p>Culm:  Raw juice of culm is drunk.</p>	<p>Used to treat jaundice, urinary trouble and hiccough.</p>
35.	<p><i>Saccharum spontaneum</i> L.  [Khasi hagra]</p>	<p>Poaceae  [S]</p>	<p>Leaves and Roots:  Leaves bundle burn with elephant's faecal matter to allow more smoke to warm foot.  Roots extract is internally used.</p>	<p>Used to cure irritating sore in foot.   Used to treat body pain.</p>
36.	<p><i>Typha angustata</i>  Bory &amp; Chaub.  [Ala hagra]</p>	<p>Typhaceae  [A. H]</p>	<p>Flower and Shoot:  Flowers allow to dry properly under sunlight, burn them taken heat on foot.  Young shoots are eaten by human.</p>	<p>Used to reduce itching and ringworm.  Used to keep stomach cold and in pain.</p>
37.	<p><i>Typhonium trilobatum</i> (L.)  Schott  [Bolamuli]</p>	<p>Araceae  [H]</p>	<p>Tuber:  100 g tuber with a 5 g of castings of <i>Pheretima</i> (Earthworm) grind and mix nicely. Then the mixture is paste over suck by the <i>Molluscus</i> (Ganler).</p>	<p>Used to treat pain and swelling.</p>
38.	<p><i>Vallisneria spiralis</i> L.  [Daini kharai]</p>	<p>Hydrocharitaceae  [A. H]</p>	<p>Whole plant:  Whole plants, <i>Ottelia alismoides</i> (L.) Pers., water fern, <i>Centella asiatica</i> (L.) Urban., <i>Hydrocotyle sibthorpioides</i> Lamk. and <i>Anagallis arvensis</i></p>	<p>Used to cure itching and meascles.</p>

			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.	
39.	<i>Zingiber officinale</i> Roscoe [Haizeng]	Zingiberaceae [H]	Rhizome: Rhizome, <i>Piper nigrum</i> L. (Golmuris), stem of <i>Piper betel</i> L. (Fathwi), <i>Syzygium aromaticum</i> L. (Long), shoot of <i>Leucas aspera</i> Link., <i>Ocimum sanctum</i> L. and <i>Piper longum</i> L. (Simfri) are grind together into 100 ml of water to mix properly. The dried bori prescribed to deep in honey and 1-2 bori asked to swallow 3 times in a day.	Used to cure dry cough.

Primary source

**Note:** A. H-aquatic herb, Cl-climber, Ep. H-epiphytic herb, G-grass, H-herb, S-shrub.

**Table 9: List of Monocotyledonous medicinal plants used by the local Rabha**

**People of Udalguri district**

Sl. No.	Botanical Name (Rabha Name)	Family (Life form)	Parts used and mode of preparation	Mode of used / Name of disease
1.	<i>Allium cepa</i> L. [Piash]	Liliaceae [H]	Bulb: Cut bulbs are rubbed over insect sting or bite.	Used to relief burning of the insect bite and



				sting.
2.	<i>Allium sativum</i> L. [Nohuru]	Liliaceae [H]	Cloves or Seeds: Grinded cloves are administered to massage over the insect bite. And generally used in high blood pressure also.	Used to get relief pain from insect bite and sting.
3.	<i>Aloe vera</i> (L.) Burm. f. [Salkuori]	Liliaceae [H]	Leaves: Juice of leaves.	Used to relief skin burning.
4.	<i>Alpinia nigra</i> (Gaertn.) Burtt [Bogitora]	Zingiberaceae [H]	Seeds: A few seeds with little sugar are grinded together in water, then extract is filtered with clean piece of cloth and filtrate is given to patient.	Used to cure jaundice and urinary trouble.
5.	<i>Ananas comosus</i> (L.) Merr. [Anaros]	Bromeliaceae [H]	Leaves or shoot: Extract juices.	Used to cure anthelmintic and abortifacient.
6.	<i>Asparagus recemosus</i> Willd. [Satmul]	Asparagaceae [Cl]	Shoots and roots: Every morning	Used to cure fever and jaundice.

			patients are asked to take a full glass of raw juice in an empty stomach.	
7.	<i>Bambusa assamica</i> Bar. & Borth. [Bah]	Poaceae [T]	Buds or Shoots: A bud is grind with 50 gm of colocasia and prepared a cup of juice and advice to drink.	Used to get relief from painful menstruation of women.
8.	<i>Canna indica</i> L. [Parijat]	Cannaceae [H]	Rhizome: Fresh rhizomes are extracted juice of one cup is given to the patient.	Used to cure blood dysentery and blood diarrhoea.
9.	<i>Colocasia esculenta</i> (L.) Schott [Kola kochu]	Araceae [H]	Corms and runners: It makes curry.	Used to remedy piles and tonsillitis.
10.	<i>Commelina benghalensis</i> L. [Kona simalu]	Commelinaceae [H]	Stem and Leaves: It is made to juice.	Used externally and to stop bleeding.
11.	<i>Costus speciosus</i> (Koen.) Smith [Buritokon]	Costaceae [H]	Rhizome: Fresh extracted juice of rhizome is given to the	Used to cure leucorrhoea.

			patient.	
12.	<i>Crinum asiaticum</i> L. [Kanari]	Amaryllidaceae [H]	Leaves: Fresh leaves are cut into small pieces, then mustard oil is put on the surface of leaves and heated over a flame. The hot oily leaves surface is gently foamed over the rheumatic part of the body.	Used to cure chronic rheumatic and body pain.
13.	<i>Cynodon dactylon</i> (L.) Pers. [Duboribon]	Poaceae [H]	Leaves or Shoots: Fresh leaves or shoots are crushed and applied around the cuts and severe wounds.	Used to relief severe cuts, injuries, bleeding and pain.
14.	<i>Dioscorea alata</i> L. [Kath alu]	Dioscoreaceae [Cl]	Tuber: It is used as curry.	Used to cure anaemia.
15.	<i>Monochoria hastata</i> (L.) Solms [Borbhat meteka]	Pontederiaceae [A.H]	Young shoots: Leaf juice (50 ml) mixed with honey (20 ml) is	Used to cure boils.

			taken twice daily for a month regularly.	
16.	<i>Ottelia alismoides</i> (L.) Pers. [Segun tepa]	Hydrocharitaceae [A.H]	Flowers: Flower paste (15 gm) is taken orally early in the morning.	Used to cure piles.
17.	<i>Oryza sativa</i> L. [Dhan]	Poaceae [H]	Grains or Seeds: Starch.	Rice wash water is used to cure diarrhoea and dysentery.
18.	<i>Pistia stratiotes</i> L. [Borpunni]	Araceae [A.H]	Leaves: Leaf juice (15-20 ml) mixed with equal amount of rose water and sugar is applied twice daily upto 15-16 days.	Used to cure diarrhoea and dysuria.
19.	<i>Saccharum officinarum</i> L. [Kurchi]	Poaceae [C]	Stem: Sugar cane juice.	Juice are administered to drink in constipation and to cure jaundice.
20.	<i>Sansiviera</i>	Agavaceae	Leaves:	Used to cure

	<i>roxburghiana</i> Schult. [Sarpagas]	[H]	Fine thread like fibres extracted from the leaf and a small rope is prepared and tied around the waist to cure chronic waist pain.	waist pain.
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Primary source

**Note:** **A.** **H**-Aquatic herb, **C**-Culm, **Cl**-Climber, **H**-Herb, **T**-Tree.

It means that the nature of people interactions with forests is critical for sustainability and conservation. Mechanism of transmission of traditional knowledge of plant use in traditional societies of Bodos and Rabhas are an interesting area worth investigating. Further, studies on people forest interactions must incorporate the role of women because despite being active users of biodiversity, their invaluable contribution remained neglected in many instances. It may be mentioned that men folk remains outside the house for most part of the time and Bodo and Rabha women take care of the needs of the family. In doing so, Bodo and Rabha women had developed knowledge of plant use, they are exposed to more diversity of natural resources than their male counterpart and so, obviously have superior knowledge of plant use of the Udalguri district. Cultural practices of resource utilization should be encouraged among forest dwellers, such practices have elements of sustainability and also act as natural deterrents against over exploitation in the Udalguri district. It is also to be noted that the most common plants used were leaves, shoots, twigs, flowers, fruits and harvesting of roots and barks can easily threaten the local diversity and density of plants.

## 5.5 ETHNO VETERINARY OR ETHNO LIVESTOCKS PRACTICES OF BODO AND RABHA PEOPLE OF UDALGURI DISTRICT

Ethno veterinary or ethno livestock research and development is a holistic interdisciplinary study of indigenous knowledge of Bodos and Rabhas of Udalguri district, and associated skills, practices, beliefs and social structures pertaining to the healthcare and husbandry of income producing animals. Though, traditional uses of medicinal plants have been in vogue since time immemorial, only a few reports are available in India, for ethno veterinary practices like Jain (2003) and Nirmala Rani (2008). During the field trips, some elderly Bodo and Rabha villagers and in veterinary practitioners of these tribes of Udalguri district were interviewed to gather data and information. The following are some ethno veterinary practices of Bodo and Rabha people of Udalguri district:

a) *Aloe vera* (L.) Burm. f. [Liliaceae]

Fresh leaves juice is applied to skin of cattle to kill ticks and parasites. It is also used to treat rheumatism.

b) *Allium cepa* L. [Liliaceae]

Bulb or seeds crushed with sufficient quantity of piper seeds is administered daily once for a week to cure mouth diseases of cow and goat.

c) *Amomum aromaticum* Roxb. [Zingiberaceae]

30 gm dried fruit powder mixed with powder of Turmeric, Zinger and Syzygium given is administered once daily for 4-5 days for stomach ailments, foot diseases, mouth diseases and fever to the cow.

d) *Elettaria cardamomum* (L.) Maton. [Zingiberaceae]

20 -30 dried seed powder mixed with Syzygium and Zinger is fed to cattle to cure fever, swelling, foot and mouth diseases.

e) *Crinum defixum* Ker-Gawl. [Amaryllidaceae]

Paste of fresh leaves, bulbs or rhizome is applied externally to cure limb swellings and wounds.

f) *Curcuma longa* L. [Zingiberaceae]

Rhizome paste (100 gm) with sufficient quantity of piper and garlic juice is administered once daily for a week to cure indigestion, wounds and pain to the cattle.

g) *Cynodon dactylon* (L.) Pers. [Poaceae]

Fresh plant (100 gm) juice with salt is fed to animal to cure indigestion.

In conclusion, animal husbandry is the second major occupation in the region, after agriculture and contributes significantly to the regional economy. Though the traditional wisdom is on the decline, a substantial proportion showed knowledge of traditional ethno veterinary or ethno livestock practices in the region. The majority of the treatments procedures are based on the traditional wisdom and beliefs of the local people and such a practice exists for many years. Such vast treasure of traditional knowledge of the Bodo and Rabha community of Udalguri district are needs to be recognized, documented and validated scientifically. From ecological conservation point of view, efforts will help in unnecessary harvesting of some of the plants. Moreover, the plants having medicine properties need to be promoted through *ex-situ* (off-site) conservation practices in agriculture fields, gardens and nurseries. Proper strategies are to be adopted to list out the important plants, prioritize them and develop suitable cultivation techniques, if conservation of traditional values and wisdom are to be ensured.