

**JOURNAL OF BIORESOURCES** 

journal webpage: https://jbr.rgu.ac.in

ISSN: 2394-4315 (Print) ISSN: 2582-2276 (Online)

# **RESEARCH ARTICLE**

# Ethnomedicinal plants use by the *Ahom* and *Bodo* community in human health management in Charaideo district of Upper Assam, North East India

# Surajeet Konwar<sup>1</sup>, Rituporna Doimari<sup>2</sup>, Monisha Gogoi<sup>3</sup> and Pranati Gogoi<sup>4\*</sup>

<sup>1</sup>Department of Biotechnology, Debraj Roy College (Autonomous), Golaghat 785621, Assam, India.

<sup>2</sup>Department of Life Sciences, Debraj Roy College (Autonomous), Golaghat - 785621, Assam, India.

<sup>3</sup>Department of Botany, Assam Science and Technology University, Jalukbari, Guwahati - 781013, Assam, India.

4\*Department of Botany, Sonari College, Sonari, Charaideo - 785690, Assam, India.

\*Corresponding author email: pranatigogoi01@gmail.com

Article No.: SKJBR110; Received: 22.09.2024; Peer-reviewed: 20.10.2024; Revised and Accepted: 15.11.2024; Published: 31.12.2024. Doi: https://doi.org/10.5281/zenodo.14892099

## Abstract

Present study documents 68 species of ethnomedicinal plants used by the *Ahom* and *Bodo* communities in upper Assam, India. Data were obtained through participants observation and field interview with local informants in the fifteen villages across the Charaideo district of Upper Assam, India. The listed species were found to be widely accessible and used for the treatment of a variety of ailments including allergies, body discomfort, body aches, headaches, animal bites, heart difficulties, coughs, etc. It was found that several plant parts including seeds, leaves, bark, and roots can be used as medicinal materials. The majority of medications were prepared in mixers using other plant parts or non-plant components. The results of the present study demonstrated the cross-cultural ethnomedicinal knowledge of the *Ahom* and *Bodo* communities.

Keywords: Ahom; Bodo; Charaideo; Upper Assam; Ethnomedicobotany; Diseases; Traditional Therapy

# 1. Introduction

The state of Assam is situated in the southern section of the eastern Himalayas and is situated in the northeastern region of the India located within a geographical coordinates of latitudes 24°8' N and 28º2' N and longitudes 89º42' E and 96ºE. Assam is renowned for having a wide variety of medicinal plants utilized by the tribal communities for the treatment of various ailments. Assamese ethnic groups who lived in the remote forest regions still rely on traditional medical knowledge for rural healthcare (Dutta and Dutta, 2005). Since ancient times, a variety of wild plants have also been used as food and medicine (Basumatary et al., 2014). Oral transmission of medicinal properties of ethnomedicinal plants were passed on from one generation to next. Those opinions and customs relating to disease that are a consequence of traditional cultural advancement and have not been explicitly drawn from the theoretical framework of modern medicine. A number of experts from various regions of northeast India have conducted ethnomedical research on various ethnic groups. Ethnomedicinal knowledge of the Northeast India is evident from the publications of Sajem and Gosai (2006), Das and Tag (2006), Konwar and Buragohain (2007), Saikia et al (2010), Buragohain (2011), Barukial and Sarma (2011), Baruah and Borthakur (2012), Baruah (2014), Deka et al (2024), Nath (2014), Abujam and Shah (2012), Gogoi and Nath (2021), Boro et al (2023). However, ethnomedicinal knowledge of the Ahom and Bodo communities have been found to be least reported which warrant detail investigations (Balung and Pujari, 2016). Therefore, present study aims to documents ethnomedicinal plants and associated traditional utilization of the Ahom and Bodo community of Charaideo district of Upper Assam.

# 2. Material and methods

## 2.1. Study area

The present study area called Charaideo extends from 27°0'0" N latitude and 95°0'00" E longitude which encompasses fifteen randomly selected villages in the Charaideo district of upper Assam, including Bengenabari, Tiok Habi, Dulakharia, Dhuniapather, Ratanpur, Jalaha, Likson Gaon, Nabari, Kakotibari, Mahmora Konwar Gaon, Sonari, Shyam Gaon, Betijan, Pohusungi Gaon and Mathurapur (Figure 1).

## 2.2. Field survey

An ethnobotanical study was carried out in the several locations within the Charaideo district of Assam between January 2023 and May 2024. All the pertinent information was gathered in accordance with the code of ethics (International Society of Ethnobiology, 2006), including information on the traditional applications of medicinal plants by the ethnic communities in the Charaideo District. We gathered the data through personal interview and focused group discussions with 58 informants using the structured questionnaire format. A number of visits were made to isolated locations in the district, including Bengenabari, Tiok Habi, Dulakharia, Dhuniapather, Ratanpur, Jalaha, Likson Gaon, Nabari, Kakotibari, Mahmora Konwar Gaon, Sonari, Shyam Gaon, Betijan, Pohusungi Gaon, and Mathurapur. The main informants belonging to *Ahom* and *Bodo* were interviewed.

2.3. Collection of voucher specimen and plant identification

72

## Journal of Bioresources 12 (2): 72-77

Traditional herbalists from the Ahom and Bodo communities living in the Charaideo District were interviewed and ethnomedicinal information were collected. Voucher specimens were collected during flowering and fruiting seasons. Voucher specimens were identified by consulting relevant literature, including *Flora* of *Assam* (Kanjilal et al., 1934–1940) and Chowdhery et al. (2008). Accepted names were verified in POWO (plant of the world online) hosted by Royal Botanic Garden Kew UK. Ethnobotanical data were analyzed using Microsoft Excel.

## 3. Results and discussion

It was noted that 68 species of ethnomedicinal plants were found to be used for curing 15 illnesses by the herbal healers of Ahom and Bodo community of Charaideo district of Upper Assam (Table 1). These species are widely accessible and used to treat a wide range of conditions,



**Figure 1.** Map of Assam showing the study area - Charaideo district of Upper Assam, India (Source: www.googlemap.com)



Phyllanthus emblica L.; 2. Psidium guajava L., 3. Carica papaya L., 4. Dillenia indica L., 5. Clerodendrum colebrookeanum Walp.,
 Ziziphus mauritiana Lamk., 7. Macrosolen cochinchinensis (Lour.) Tiegh., 8. Hellenia speciosus (J. Koenig) S.R. Dutta,
 Zanthozylum nitidum (Roxb.) DC.

Table 1. List of ethnomedicinal plants used by the people of Ahom and Bodo community in Charaideo district, Upper Assam, India.

SI.	Diseases/Ailments	Botanical Name	Local Name	Habit	Parts used and procedure of treatment
<u>No</u> 1.	Improvement of	(i) Spinacia oleracea L.	Palenghak	Herb	Boil leaves taken as vegetable
	eyesight	(ii) Amaranthus viridis L	Khuturahak	Shrub	or salad Shoot portion used as
					vegetable
		<ul><li>(iii) Cynodon dactylon (L.) Pers.</li><li>(iv) Manihot esculenta Crantz.</li></ul>	Dubori bon Himolu alu	Herb Shrub	Whole plant is taken as juice Paste of bark and exudates are used
2.	Jaundice	(i) Erythrina stricta Roxb. (ii) Dracaena anaystifolia Roxb	Ronga modar Hati-kuhiyar	Tree	Leaves are taken as juice Stem portion is taken as juice
		(iii) Saccharum officinarum L.	Kuhiyar	Herb	Stem juice is taken
		(iv) Macrosolen cochinchinensis (Lour.) Tiegh.	Roghumola Pan	Shrub Climbor	Leaves are taken as juice
3.	Cough	(i) Piper betle L.	1 411	Chinder	Leaves are used as initiasion
		(ii) Rubus alceifolius Poir.	Jetuli-poka Chani ban	Shrub	Root paste is taken orally
		(iii) Scoparta dulcis L. (iv) Vitex negundo L.	Pochotia	Shrub	Leaves are taken as juice Leaf paste is taken orally
		(v) Ziziphus mauritiana Lamk.	Bogori	Tree	Fruits are taken
		(v1) Zingiber officinale Rosc.	Moran-ada	Herb	Rhizome is taken as paste orally
4	Fever	(i) Piper nigrum L.	Jaluk	Climber	Fruits are taken orally or paste
		(ii) Tamarindus indica L.	Teteli	Tree	Externally leaves paste are taken and fruits are taken orally
		(iii) Zanthoxylum nitidum (Roxb.) DC	Tezmuri	Climber	Leaf, stem and bark are taken orally as paste
		(iv) Ziziphus mauritiana Lamk.	Bogori	Tree	Fruits are taken
		(v) Allium sativum L. (vi) Saccharium officinarium L	Naharu Kuhiyar	Herbs Grass	Raw fruits are taken Dense juice is used
5	Stomach problem	(i) Paederia scandens (Lour)	Bhedailata	Cimber	Leaves are eaten as vegetable
5	Stommen Problem	(i) Bill and the three to a to a local line is the second se	The abal	China	
		(II) Philogacantnus thyrstformis (Hardw.) Mabb	I ita phul	Snrub	riower and leaves are taken as decoction
		(III) Polygonum Uninese L.	solang	Cumper	Leaves are used as vegetable
		(iv) <i>Sarcochlamys pulcherrima</i> (Roxb.) Gaudich.	Mechaki	Shrub	Orally leaves are taken as decoction
		(v) Solanum indicum L. (vi) Tarminalia chebyla Potz	Tita bhekuri Hilikha	Shrub	Fruits are used as vegetable
		(vi)Vitex negundo L.	Pochotia	Shrub/	Orally leaf paste is taken
		(viii) Spondias pinnata (L.f.) Kurz.	Amora	Tree	Leaves, fruits and barks are used as paste or eaten raw
6	Hair problem	(i) Phyllanthus emblica L.	Amlakhi	Tree	Fruits are taken
		(ii) Ricinus communis L.	Era gos	Herb	Stems are infused with oil and used externally
		(iii) Sapindus mukorossi Gaertn.	Moni-chal Keberai	Tree	Stems are used as decoction Whole plant parts are used as
		(1 <i>v) Ecupia prosirata</i> (E.) E.	neneraj	nerb	paste
		(v) Hibiscus rosa sinensis L.	Joba-phul	Shrub	Externally leaf and flower paste is used
7	Dysentery	(1) Psidium guajava L. (ii) Sarcochlamys pulcherrima (Roxb.)	Modhuri am Mechaki	Tree Herb	Leaves are eaten raw Leaves are used as decoction
		Gaudich. (iii) <i>Spondias pinnata</i> (L.f.) Kurz.	Amora	Tree	Fruits and leaves are eaten
		(iv) Mikania micrantha Kunth.	Prem-lota	Climber	raw Leaves are taken as inice
		(v) Mimosa pudica L.	Lajuki bon	Herb	Leaves are taken as juice
		(vi) Musa balbisiana Colla.	Athia kol	Herb	Raw fruits are used
8	Allergy	(i) Dendrocnide sinuate (Bl.) Chew.	Borsurat	Shrub/ small tree	Flower is used as vegetable
		(ii) Azadirachta indica A. Juss.	Neem	Tree	Leaf paste is used in the allergy prone area
		(iii) <i>Cucuma longa</i> Linn.	Haladhi	Herb	Rhizome paste is applied on affected area
9	Menstruation pain	(i) Clerodendrum colebrookeanum Walp.	Nephaphu	Small shrub	Leaves are used as decoction
		(ii) Curcuma caesia Roxb. (iii)Cynodon dactylon (L.) Pers.	Kola haladhi Dubori bon	Herb Herb	Paste of rhizome are used Whole plant part is taken as juice
		(iv) <i>Stenoclaena palustris</i> (Burm.f.) Bedd (v) <i>Mimosa pudica</i> L.	Bonjaluk Lajuki bon	Herb Herb	Leaves are taken as vegetable Orally leaf and root juice are taken
		(vi)Morus alba L.	Nuni	Tree	Raw fruits are taken
		(vii) Macrosolen cochinchinensis (Lour.) Tiegh. (viii) Impatiens tripetala L.	Roghumola Damdeuka	Tree Herb	Leaves are taken as juice Externally the paste of root,
		(ix) Acacia farnesiana (L.) Wild (x) Hibiscus rosa sinensis L.	Torua kadam Joba phul	Tree Shrub	Stems are used as decoction Externally floral and leaf paste are used

10	Gastrointestinal disease	(i) Acorus calamus L.	Bosh	Herb	Used as pill that are prepared from the rhizome
		(ii) Alternanthera sessilis (L.) R.Br. Ex DC	Mati kanduri	Herb	The whole plant is used as vegetable
		(iii) Capsicum frutescens L.	Dhan jolokia	Shrub	Fruits are taken raw
		(iv) Citrus grandis (L.) Osb.	Robab-tenga	Tree	Fruit juice is taken
		(v) Curcuma caesia Roxb. (vi) Curcuma zedoaria Rosc.	Kola haladhi Borahu	Herb Herb	Orally, rhizome paste is used Used as pill that are prepared from the rhizome
		(vii) <i>Leucas aspera</i> (Willd.) Link (viii) <i>Phlogacanthus thyrsiformis</i> (Hardw.) Mabb	Durun bon Tila phul	Herb Shrub/ tree	Leaves are taken as juice Flower and leaves are taken as decortion
		(ix) Trachyspermum ammi (L.) Sprague	Ajwain	Herb	Seeds are used as infusion
11.	Piles	(i) Calotropis procera (Ait.) R.Br	Akon	Shrub/ tree	Pill is used that is prepared from the leaf and also used as
		(ii) Curcuma zedoaria Rosc.	Borahu	Herb	paste Pill is used that is prepared from the rhizome
		(iii) Dactylotenium aegypticum (L.) P. Beauv. (iv) Drymeria cordata (L.) Wild.ex	Bobosa bon Lai-jaborihak	Herb Herb	Whole plant is used Whole plant is used as juice or paste.
		(v) Lagenaria siceraria (Molina) Standl.	Jati-lao Nahar	Climber	Fruit juice is taken
		(vii) Murraya koenigii (L.) Spreng	Narasingha	Tree/ shrub	Orally, leaf paste is taken
		(viii) Paederia scandens (Lour)	Bhedailota	Climber	Leaves are taken as vegetable
		(1x) Scoparia dulcis L. (x) Spondias pinnata (L.f.) Kurz	Cheni-bon Amora	Herb Tree	Leaves are taken as juice Stem, fruit, leaves and bark paste are used
		(xi) <i>Syzygium cumini</i> (L.) Skeels (xii) <i>Terminalia arjuna</i> (Roxb ex DC)	Kola-jamuk Arjun	Tree Tree	Fruit is taken raw Orally, bark is used as infusion
		(xiii) Ziziphus mauritiana lamk. (xiv) Vitex negundo L.	Bogori Pochotia	Tree Tree/ Shrub	Raw fruits are taken Shoot paste is taken
12.	Diabetic Problem	(i) Momordica charantia L.	Titakerela	Climber	Fruit juice is taken and fruits are rubbed below the foot except the people suffered gestreintesting disorder
		(ii) Syzygium cumini (L.) Skeels	Jamuk	Tree	Fruit and fruit juice are taken
		(iii) Dillenia indica L.	Ow-tenga	Tree	Fruits are taken as decoction and also fruits are taken
		(iii) Flacourtia jangomas (Lour) Raeusch. (iv) Mangifera indica L.	Poniyol Aam	Tree Tree	Raw fruits are taken Leaves are taken as decoction and raw fruits are taken
		(v)Elaeocarpus floribundus Bl. (vi) Phyllanthus emblica I	Jolphai Amlakhi	Tree	Fruits are eaten raw Raw fruits are taken
13.	Blood pressure	(i) Clerodendrum colebrookeanum Walp.	Nephaphu	Shrub	Leaves are used as vegetable
		(ii) Alocasia indica (Roxb.) Schot	Man kochu	Herb	Rhizome is used as decoction
		(iii) Tamarindus indica L. (iv) Rauvolfia serpentina L. Benth. ex Kurz.	Teteli Sarpagandha	Tree Shrub	Fruits are eaten raw Leaf juices are taken
14.	Toothache	(i) Alocasia macrorrhiza (Roxb.) Schot	Borkochu	Herb	Externally paste of leaf and
		(ii) Mimosa pudica L.	Lajuki bon	Shrub	Root paste is applied in the
		(iii) Alstonia scholaris (L.) R. Br	Chatiana	Tree	orally, stem and bark paste
		(iv) Azadirachta indica A. Juss.	Moha-neem	Tree	are used Leaves are used as vegetable
		(v) Nicotiana tabacum L.	Dhopat	Herb	or paste Leaf paste is applied in ache zone
		(vi) Mentha arvensis L.	Pudina	Herb	Leaves are used as paste
		(vii) Musa balbisiana Colla.	Athiya kol	Herb	Rhizome is used in the affected area after slightly roast
		(viii) <i>Myrica esculent</i> a BuchHam. Ex D. Don	Noga tenga	Tree	Power is used that is prepared from its bark
15.	Fungal infection	(i) Azadirachta indica. Juss.	Moha-neem	Tree	Leaf paste is used above the infected portion
		(ii) Lawsonia inermis L.	Jetuka	Shrub /tree	Leaf paste is applied above the infected area.

including fever, headache, body pain, burns, animal bites, cuts, diabetes, high blood pressure, TB, heart problems, stomach issues, worms, pox, jaundice, sinusitis, reproductive issues, allergies, pimples, hair loss, sunburn, and so forth (Figure 2; Table 1). Treatments for several illnesses involve the use of various plant parts, such as seeds, leaves, bark, roots, etc. (Table 2). Present study also revealed that medications were used in the form of paste and applied topically to the affected area, as well as occasionally consumed, for treating skin conditions (Table 3). Table enumerates the diseases, their respective scientific and local names, and the portion of the plant that is used as medication. It has been shown that the majority of medications are made as blends using non-plant materials or other plants. Because of their conservative views, the majority of respondents of the study area have expressed reluctance to share their information. They felt that the dissemination of their traditional knowledge would prevent efficacy of their traditional phytotherapy. Therefore, it is possible that the abrupt passing out of ethnomedicine knowledge to unknown person could result in the loss of indigenous knowledge systems. This emphasizes how crucial it is to thoroughly investigate and record the valuable indigenous knowledge system of the many ethnic communities. However, perusal of existing literature revealed that the majority of the ethnomedicinal plant species reported to be used by the Ahom and Bodo community in present studies are also reported from other tribes of North East India for same remedies such as Das and Tag (2006), Konwar and Buragohain (2007), Kalita and Bora (2008), Das et al (2008), Choudhary et al (2008), Saikia and Saikia (2010), Tanti et al (2010), Abujam and Shah (2012), Baruah and Borthakur (2012), Panda et al (2013), Thakur et al (2014), Debbarma et al (2017), Gogoi and Nath (2021), Daimary et al (2019), Das and Lungphi (2019). This reflects the cross-cultural importance of the ethnomedicinal plants used by the Ahom and Bodo community of Charaideo district of Upper Assam.

# 5. Conclusion

Present investigation has proven the fact that the traditional herbal healers of Ahom and Bodo communities of Upper Assam has a deep knowledge of ethnomedicine which has the potential to cure 15 ailments using 68 species of ethnomedicinal plants of their surroundings. The great majority of these ethnomedicinal plant species were reported to be angiosperm. The medicinal plants valuable in traditional medicine in the Charaideo area are: *Leucas aspera, Paederia foetida, Psidium guajava, Clerodendrum colebrookeanum, Musa balbisiana, Dendrocnide sinuata, Azadirachta indica and Cucuma longa.* These plants have received high scores utilization from traditional healers and elderly villagers. Conservation of these plants in the community forest area will help in sustainance of the age-old herbal tradition of the Ahom and Bodo communities of Charaideo of Upper Assam.

## Acknowledgement

All the authors are kindly thankful to the knowledge providers specially the villagers for sharing their valuable information during the period of work.

## **Authors contribution**

All authors have equally contributed in concept, research design, data generation and finalization of manuscript.

#### **Declaration of conflict of interest**

Authors have no conflict of interests.

## Reference

Abujam SS and Shah RK. 2012. Study on the ethnomedicinal system of local people of Dibrugarh, Assam. International Journal of Pharmaceutical Innovation 2:17-28.

Bailung B and Puzari M. 2016. Traditional use of plants by the Ahoms in human health management in upper Assam, India. Journal of Medicinal Plants Studies 4(2): 48-51.

Barua I. 2014. Indigenous herbal medicine among the Sonowal Kachari tribe: a study in a forest village in Dibrugarh, Assam, India. NeBIO 2(4):30-35.

Baruah S and Borthakur SK. 2012. Studies on morphology and ethnobotany of Six species of Garcinia L. (Clusiaceae) found in the Brahmaputra Valley, Assam, India. Journal of Natural Product and Plant Resources 2(3): 389-396.

**Table 2** showing the different plant parts used by *Ahom* and *Bodo* community in Charaideo district, Assam.

SN	Plant part	No of species
1	Whole plant	45
2	Leaf	60
3	Stem	35
4	Root	15
5	Fruit	10
6	Seed	2
4	Flower	1

Table 3. Showing the forms of medication pract	iced by
Ahom	

and Bodo community.

SN	Form of medication	No of species
1	Paste	55
2	Juice	41
3	Eaten raw	24
4	Vegetable	15
5	Pill	3
6	Decoction	5

Barukial J and Sarmah JN. 2011. Ethnomedicinal plant used by the people of Golaghat district, Assam, India. International Journal of Medicinal and Aromatic Plants 1 (3): 203-211.

Basumatary N, Teron R and Saikia M. 2014. Ethnomedicinal practices of the Bodo-Kachari tribe of Karbi Anglong district of Assam. International Journal of Life Science, Biotechnology and Pharma Research 3(1): 161-7.

Bodo M and Bodo B. 2015. Health Care Practices among the Dimasa Tribe of Diyungbra Block in Dima Hasao District, Assam. Public Health Journal 1(2):62-65.

Boro M, Das B, Boro KK, Nath M, Buragohain P, Roy S, ... & Nath N. 2023. Quantitative ethnobotany of medicinal plants used by the Bodo Community of Baksa District, BTR, Assam, India. Biodiversitas Journal of Biological Diversity 24(6).

Buragohain J. 2011. Ethnomedicinal plants used by the ethnic communities of Tinsukia district of Assam, India. Recent Research in Science and Technology 3(9).

Buragohain J and Konwar BK. 2007. Ethnomedicinal plants used in skin diseases by some Indo-Mongoloid communities of Assam. Asian Journal of Experimental Science 21(2): 281-288.

Choudhary K, Singh M and Pillai U. 2008. Ethnobotanical survey of Rajasthan-An update. American-Eurasian Journal of Botany 1(2):38-45.

Daimari M, Roy MK, Swargiary A, Baruah S and Basumatary S. 2019. An ethnobotanical survey of antidiabetic medicinal plants used by the Bodo tribe of Kokrajhar district, Assam. Indian Journal of Traditional Knowledge 18(3): 421-429.

Das AK and Tag H. 2006. Ethnomedicinal studies of the Khamti tribe of Arunachal Pradesh. Indian Journal of Traditional Knowledge 5 (3): 317-322.

Das AP and Lungphi P. 2019. Floristic Studies vis-à-vis Medicinal Plants in the Eastern Himalaya-past and the present status. Medicinal Plants of India: Conservation and sustainable use. Today & Tomorrow's Printers and Publishers, New Delhi, 39-56.

Debbarma M, Pala NA, Kumar M and Bussmann RW. 2017. Traditional knowledge of medicinal plants in tribes of Tripura in northeast, India. African Journal of Traditional, Complementary and Alternative Medicines 14(4): 156-168.

Deka S, Das J, Bora A, Tripathi OP, Angmo R and Das N. 2024. Ethnobotany of wild edible plants used by Rabha community of Goalpara district in Assam, India. Journal of Bioresources 11(1): 24-28.

Dutta BK and Dutta PK. 2005. Potential of ethnobotanical studies in North East India: An overview. Indian Journal of Traditional Knowledge 4 (1): 7-14.

Gogoi P and Nath N. 2021. Diversity and inventorization of angiospermic flora in Dibrugarh District, Assam, Northeast India. Plant Science Today 8(3): 621-628.

## Journal of Bioresources 12 (2): 72-77

Gogoi P and Nath N. 2021. Indigenous knowledge of ethnomedicinal plants by the Assamese community in Dibrugarh District, Assam, India. Journal of Threatened Taxa 13(5): 18297-18312.

Kalita D and Bora RL. 2008. Some folk medicines from Lakhimpur district, Assam. Indian Journal of Traditional Knowledge 7 (3): 414-416.

Panda T, Mishra N, Tripathy BK, Das PK and Mohanty RB. 2013. Ethnomedico-biology of Bhadrak district, Odisha, India. Journal of Forestry Research 24(1): 187-192.

Saikia B, Borthakur SK and Saikia N. 2010. Medico-ethnobotany of Bodo tribals in Gohpur of Sonitpur district, Assam. Indian Journal of Traditional Knowledge 9(1):52-54.

Sajem AL and Gosai K. 2006. Traditional use of medicinal plants by the Jaintia tribes in North Cachar Hills district of Assam, northeast India. Journal of Ethnobiology and Ethnomedicine 2:1-7.

Tanti B, Gurung L, Sarma HK and Buragohain AK. 2010. Ethnobotany of starter cultures used in alcohol fermentation by a few ethnic tribes of Northeast India. Indian Journal of Traditional Knowledge 9 (3): 463-466.

Thakur KS, Kumar M, Bawa R and Bussmann RW. 2014. Ethnobotanical study of herbaceous flora along an altitudinal gradient in Bharmour Forest Division, District Chamba of Himachal Pradesh, India. Evidence-Based Complementary and Alternative Medicine 2014 (1): 946870.

