



# International Journal of Life Sciences Biotechnology and Pharma Research





Research Paper

# ETHNOMEDICINAL PRACTICES OF THE BODO-KACHARI TRIBE OF KARBI ANGLONG DISTRICT OF ASSAM

Neeta Basumatary<sup>1\*</sup> Robindra Teron<sup>1</sup> and Mousmi Saikia<sup>2</sup>

\*Corresponding Author: **Neeta Basumatary** ✉ [neetabasumatary@gmail.com](mailto:neetabasumatary@gmail.com)

The present study aims at documenting the indigenous knowledge pertaining to the utilization of different medicinal plant species used by the Bodo-Kachari tribes of Karbi Anglong district of Assam. The investigation was carried out through conversation with local ojhas (i.e., local medicine practitioners) and also by observation and collection of the plant species in consultation with local experts. The present study deals with enumeration of medicinal usage of 44 plant species belonging to 34 families, used by the foresaid tribes for treatment of various ailments like cough, fever, dysentery, indigestion, headache, stomach-ache, diarrhoea, skin diseases, bone fracture, etc. Such explorations are essential from the view point of documentation and conservation of indigenous and traditional knowledge, which consequently helps in formulation of potential raw materials in modern pharmaceutical industry for further availability and utilization of mankind.

**Keywords:** Ethnomedicine, Bodo-Kachari tribes, Karbi Anglong district, Pharmaceutical industry

## INTRODUCTION

Ethnomedicine plays an important role in the medical health aspect of the ethnic tribes residing in India. The knowledge of plants has come orally through generations and wild plants have been consumed as food and also have been used as medicine from pre historic times. The plants have been part and parcel of ethnic tribes in their day to day life. Around 16000 species of higher plants are found in India and out of these 7500 species

have been reported to be used by different ethnic communities for medicinal and health care purposes (Arora, 1987). According to another report (Pushpagandan, 1995) over 2000 species of ethnomedicine and folk medicine are newly identified as drug yielding plants and also about 7500 plants are used in traditional health practices in mostly rural and tribal dominating villages of India. More or less over 5000 plant species are either little known or unknown to the mainstream population.

<sup>1</sup> Department of Life Sciences and Bioinformatics, Assam University Diphu Campus, Karbi Anglong, Diphu 782460 Assam.

<sup>2</sup> Department of Herbal Science and Technology, ADP College, Nagaon, 782002, Assam.

Karbi Anglong is one of the hill districts of Assam with a geographical area of 10,424 sq. km which is 13.29% of total geographical area of the state (78,438 sq. km). The geographical location of the district is between 92°90' E to 93°54' E longitude and 25°30' N to 26°36' N latitude. The district comprises of two parts—the western part also known as Hamren subdivision and eastern parts comprising of Diphu and Bokajan subdivision. The district is without any International boundary. The district is mostly inhabited by various ethnic tribals such as—Karbi, Bodo, Dimasa, Mech, Garo, Kuki, Rengma Naga, Jaintia, Tiwa, Hajong, Rabha, Hmar, etc., and a few plain tribes (Phangcho, 2001). Majority of the population are extensively dependent on agriculture. Different types of agricultural crops are cultivated, of which paddy is the main crop. Except for low lying areas, the people follow the jhum system of cultivation.

The present study has been carried out in the Diphu and Bokajan subdivision of the Karbi Anglong district. The main aim of the study is to investigate and document the medicinally important species used as traditional medicine by the local community.

## METHODOLOGY

The work was undertaken through field survey carried out during the period of November 2010 to May 2013 in Bodo kachari dominated area of the district. Information was collected from village elders, Ojhas (medicine practitioner) and Gaon bura (village headman) were consulted and were apprised of the purpose of the study and Prior Information Council (PIC) was obtained from them. Informants were requested to narrate plants used by the tribe pertaining to medicines

and their cultural significance. The method adopted in the present study was (i) interview, (ii) observation of plant use as most informants were illiterate. Plants narrated by informants were collected and dried, poisoned and made into voucher specimen as per standard methods (Jain and Rao, 1977). The specimens were identified and deposited in the herbarium of Department of Life Science, Assam University, Diphu Campus for further reference.

## RESULTS AND DISCUSSION

Altogether, 44 plants belonging to 34 families of medicinal values has been collected and recorded. Nine of the above medicinal plants are usually consumed as food by the tribal community, such as – *Centella asiatica*, *Synedrella nodiflora*, *Nyctanthes arbor-tristis*, *Zanthoxylum oxyphyllum*, *Sida cordifolia*, *Mentha spicata*, *Oroxylum indicum*, *Alocasia macrorrhiza*, *Houttuynia cordata*. Among all the families, Zingiberaceae is the most dominant family (4 species), followed by Euphorbiaceae, Liliaceae, Acanthaceae, Malvaceae, Rutaceae and Cactaceae (2 species), whereas the other families represents a single species. The foresaid tribes uses these medicinal plants for treatment of various ailments like cough, fever, dysentery, indigestion, headache, stomach-ache, diarrhoea, skin diseases, and bone fracture. Plants studied with local names and family in parenthesis are enumerated in Table 1. The results depicts that the leaves were used to a maximum extent (36%), followed by roots (12%), barks (10%), stem (14%), fruits (10%), seeds (4%), whole plants (4%), rhizome (4%) and flowers (6%) for the treatment of various diseases (Figure 1).

Ethnomedicinal knowledge is normally

**Table 1: Medicinal Plants of Bodo-Kachari Tribe of Karbi Anglong District, Assam with Family (in Parenthesis) and Local Names are Enumerated Below**

S.No.	Plants	Botanical Family	Local Name	Parts Used	Mode of Administration
1.	<i>Alocasia macrorrhiza</i> L. syn- <i>A. indica</i>	Araceae	Thaso	Roots	The paste of roots are used in leg and joint pain
2.	<i>Aloe barbadensis</i> Mill. syn- <i>Aloe vera</i>	Liliaceae	Kreeto kanchan	Stem	The gel of the plant is used in burning and for treating white discharge.
3.	<i>Alpinia allughas</i> Rosc	Zingiberaceae	Tharai	Stem	Useful in headache, sore throat, pain in chest, diabetes, etc.
4.	<i>Amomum aromaticum</i> Roxb.	Zingiberaceae	Elaichi gidir	Fruits small	Paste of fruit is used in treatment of cough and pox.
5.	<i>Andrographis paniculata</i> Burm. F. syn- <i>A. subspathulata</i>	Acanthaceae	Sirata	Leaves	Uses- Dried leaves and stem soaked overnight in cold water, taken in empty stomach in the morning helps in relieving from malaria.
6.	<i>Aquilaria malaccensis</i> Lam syn- <i>A. agallocha</i>	Aquilariaceae	Agar	Bark of stem	Bark is used in stomach pain, snake bite, vomiting, etc.
7.	<i>Argemone Mexicana</i> L.	Papaveraceae	Siyalpaduri	Leaves	Leaves are used in headache, malarial fever, leprosy, jaundice, etc.
8.	<i>Aristolochia saccata</i> Wall	Aristolochiaceae	Nilikot	Roots	Roots are used in stomach pain, body pain and jaundice
9.	<i>Arundo donax</i> L.	Poaceae	Noljora	Leaves and shoots	Leaves and shoots are used in leprosy, fever, leg pain, etc.
10.	<i>Asparagus racemosus</i> Willd syn- <i>A. officinalis</i>	Liliaceae	Satamul	Roots	Powdered roots are used for treating Jaundice
11.	<i>Averrhoa carambola</i> L.	Averrhoaceae	Khamrenga	Fruits	Fruits is used to relieve jaundice
12.	<i>Azadirachta indica</i> A. Juss. syn- <i>Melia azadirachta</i>	Meliaceae	Neem bilai	Leaves and bark of stem	Leaves boiled with water and prepared as paste is used for treatment of skin problems. Bath taken with the water helps in relieving boil, itching, allergy, etc. Barks are sun dried and ground to powder, taken orally to relieve from worms.
13.	<i>Bryophyllum pinnatum</i> Oken	Crassulaceae	Phatgaja	Leaves	Paste of leaves is applied locally near the navel for relieving stomach pain, kidney problems and leucorrhoea. It is also used in treatment of burns and boils
14.	<i>Cajanus cajan</i> L. syn- <i>C. Indicus</i>	Papilionaceae	Khokling	Seeds	The pods with seed are used in expelling worm from the body
15.	<i>Calatropis gigantean</i> L.	Asclepiadaceae	Agandobongphang	Leaves	Leaves helps in curing swelling of lever
16.	<i>Centella asiatica</i> L. syn- <i>Hydrocotyle asiatica</i>	Apiaceae	Manimuni fisha	Whole plants	All parts of the plant are used. The paste is applied locally on the wound and taken to cure gastric. It is also taken as tonic.

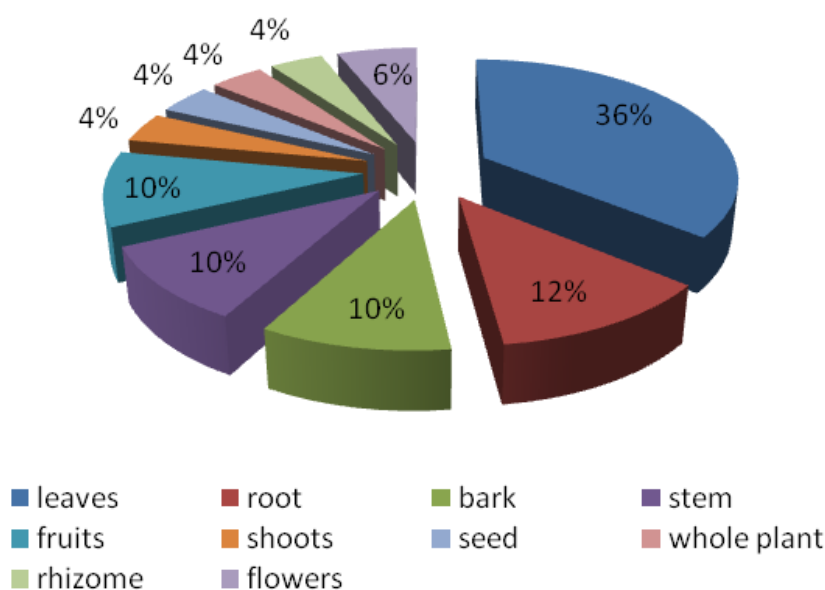
Table 1 (Cont.)

S.No.	Plants	Botanical Family	Local Name	Parts Used	Mode of Administration
17.	<i>Clerodendrum viscosum</i> Vent.	Verbenaceae	Makhna bilai	Leaves	Juice of the leaves is taken orally as tonic to relieve from dysentery.
18.	<i>Costus speciosus</i> Smith syn- <i>Banksia speciosa</i>	Costaceae	Burithakan	Roots	Roots are used in urinary problem, burning sensation, etc.
19.	<i>Curcuma longa</i> L. syn- <i>Curcuma domestica</i>	Zingiberaceae	Haldai	Rhizome	Juice of the rhizome is effective in stomach disorder and gastric problem and also used to cure bone fracture.
20.	<i>Emblica officinalis</i> Ga. syn- <i>Phyllanthus emblica</i>	Euphorbiaceae	Amlai	Fruit	Powder of dried fruits is given for purifying blood. It is also used in the treatment of cold and fever.
21.	<i>Erythrina variegata</i> L. syn- <i>E. India</i>	Fabaceae	Mandar	Leaves	Leaves used in treatment of eye problem, skin diseases. Flower used to stop bleeding from nose.
22.	<i>Hibiscus rosa – sinensis</i> L.	Malvaceae	Joba bibar	Bark and flower bud	Crushed bark is used for the treatment of Cholera. Flower buds consumed for relieving stomach pain.
23.	<i>Houttuynia cordata</i> Thunb	Saururaceae	Maisunduri	Leaves	Fresh juice of the leaves is used to cure diarrhoea.
24.	<i>Justicia gendarussa</i> L.	Acanthaceae	Jatrashi	Roots	Roots is used in chronic indigestion, dysentery, fever, etc.
25.	<i>Lawsonia inermis</i> L.	Lythraceae	Jenthokha	Leaves	Paste of leaves is applied locally helps in treating scabies.
26.	<i>Litsea glutinosa</i> Lour	Lauraceae	Baghnala	Bark of stem	Bark is used in the treatment of bone fracture
27.	<i>Mentha spicata</i> L.	Lamiaceae	Pudina	Tender shoots and leaves	Fresh juice of leaves and tender shoot helps in relieving from liver enlargement and loss of vigour.
28.	<i>Murraya koenigii</i> L. syn- <i>Bergera koengii</i>	Rutaceae	Nwrshing	Leaves	Paste of leaves and juice is given to relieve high fever.
29.	<i>Musa paradisiaca</i> L.	Musaceae	Athia thalit	Underground stem	Paste of underground Stem is applied on the forehead to reduce temperature and relieves from intense fever.
30.	<i>Nelumbo nucifera</i> Ga.	Nelumbonaceae	Podom bibar	Flower	Flowers are used to relieve from Jaundice.
31.	<i>Nyctanthes arbertristis</i> L.	Nyctanthaceae	Sephali	Leaves and flowers	Leaves are used in treatment of fever, flowers are used in stomach pain and seeds in treating baldness.
32.	<i>Ocimum basilicum</i> L.	Lamiaceae	Hagrani thulusi	Leaves	Paste of the leaves is applied locally in a minor cut, accidental bleeding. It is taken to relieve cough.
33.	<i>Opuntia dillenii</i> L.	Cactaceae	Nagphena	Stems and fruits	Syrup of the plant is used as a remedy for asthma, cough and snake bite.
34.	<i>Opuntia vulgaris</i> Mill	Cactaceae	Sagar fena	Whole plant	Syrup of the plant is used in treating ulcer and urine disease.

Table 1 (Cont.)

S.No.	Plants	Botanical Family	Local Name	Parts Used	Mode of Administration
35.	<i>Oroxylum indicum</i> L.	Bignoniaceae	Kharang khandai	Bark of stem and seeds	Bark and seeds are used in snake bite.
36.	<i>Paederia foetida</i> L.	Rubiaceae	Khiphibandang	Young stems and leaves	The paste of the leaves and young stem helps relieving from dysentery and stomach ache.
37.	<i>Psidium gujava</i> L.	Myrtaceae	Sophari	Tender leaves	Tender leaves paste in empty stomach relieves from dysentery.
38.	<i>Ricinus communis</i> L.	Euphorbiaceae	Enda	Leaves	Leaves paste is applied locally to cure itches and other skin problems.
39.	<i>Sida cordifolia</i> L.	Malvaceae	Lafasaikho	Leaves	Paste of the leaves relieves swelling of any parts of the body.
40.	<i>Synedrella nodiflora</i> Ga	Asteraceae	Usumai	Stem and leaves	Curry prepared from the leaves and stem is used to get relieve from body ache.
41.	<i>Terminalia chebula</i> Retz.	Combretaceae	Selekha	Fruits	Powder of the dried fruit is taken orally to relieve stomach pain and also for gastric problem.
42.	<i>Vitis quadrangularis</i> L.	Vitaceae	Hatjora	Leaves	The leaves of the plant are used as bandage around the fractured bone.
43.	<i>Zingiber officinale</i> Rosc	Zingiberaceae	Haizeng	Rhizomes	Paste of rhizome is effective in stomach disorder, cough, cold, fever and in healing arthritis.
44.	<i>Zanthoxylum oxyphyllum</i> Edgew	Rutaceae	Mejenga	Leaves	Used as remedy for toothcare.

Figure 1: Percentage of Plant Parts used as Herbal Medicine



transmitted from generation to generation and there are limited records on documentation of medicinal plants used in traditional system (Dhar *et al.*, 1968; Sofowora, 1982). World Health Organization (WHO) has shown great interest in documenting medicinal plants used by tribal communities Worldwide (Kaido *et al.*, 1997). Recently many developing countries have made significant efforts in documenting the ethnomedical data on medicinal plants and researches to find out scientific evidence for claim by tribal healers on Indian herbs have been intensified. Once these local ethnomedical preparations are scientifically evaluated and disseminated properly, people will be better informed regarding efficacious drug treatment and improved health status (Manandhar, 1987; Singh *et al.*, 2012). Thus, the present study emphasizes to investigate and document the use of the different plant parts as medicine by the Bodo Kachari tribe for healing different ailments that has been inherited among the local community from their fore-fathers.

## CONCLUSION

Exploration of these medicinal plants are essential from the view point of documentation of indigenous and traditional knowledge, which consequently helps in formulation of potential raw materials in modern pharmaceutical industry for further availability and utilization of mankind. In Assam, the poor people of the tribal community collect plants from the wild in order to complement their meagre incomes. Due to continued collection and increasing market demand, numerous plant species are threatened with extinction. For rational and regulated collection, tribal community control measures are necessary. It is also

essential to promote the cultivation of these medicinal plants that would provide strong impetus to agricultural diversification, leading to increased incomes for farmers and conservation of the wild population of the indigenous medicinal plants.

## ACKNOWLEDGMENT

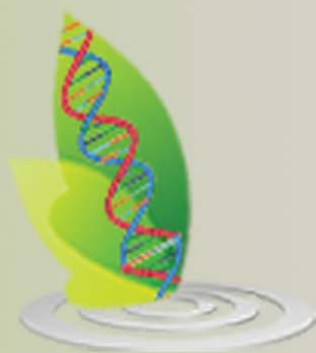
The authors are thankful to the Head of the Department of Life Sciences and Bioinformatics, Assam University, Diphu Campus.

## REFERENCES

1. Arora R K (1987), "Ethnobotany and its role in the conservation and use of the genetic resources in India", *Ethnobotany*, Vol. 9, pp. 6-15.
2. Baruah P and Sarma G C (1984), "Studies on the medicinal uses of plants of the Bodo tribals of Assam", *J. Econ. Tax. Bot.* Vol. 5(3), pp. 599-604.
3. Basumatary S K, Ahmed M and Deka P S (2004), "Some medicinal plant leaves used by Boro (tribal) people of Goalpara district, Assam", *Natural Product Radiance*, Vol. 3(2), pp. 88-90.
4. Bora P J (1999), "A study of Ethnomedicinal uses of plants among the Bodo tribe of Sonitpur district, Assam, India", *J. Econ. Tax. Bot.* Vol. 23(2), pp. 604-608.
5. Bordoloi B N., Thakur G C S and Saikia M C (1987), *Tribes of Assam Part-I*, Saraighat Printers, Guwahati.
6. Borthakur S K (1976), "Less known medicinal uses of plants among the tribes of Karbi-Anglong (Mikir hills), Assam", *Bull.*

- Bot. Surv. India*, Vol. 18(1-4), pp. 166-171.
7. Dhar M L, Dhar M M, Dhawan B N, Mehrotra, B N and Ray C (1968), "Screening of Indian plants for biological activity: Part I", *Indian Journal of Experimental Biology*, Vol. 7, pp. 232-247.
  8. Gogoi R and Borthakur S K (2001), "Notes on herbal recipes of Bodo tribe in Kamrup district, Assam", *Ethnobotany*, Vol. 13, pp. 15-23.
  9. Jain S K and Rao R R (1997), *A Hand Book of Field and Herbarium Methods, Today and Tomorrows*, publication, New Delhi: pp. 5-55.
  10. Kaido T L, Veale D J H, Havlik I and Rama D B K (1997), "Preliminary screening of plants used in South Africa as traditional herbal remedies during pregnancy and labour", *Journal of Ethnopharmacology*, Vol. 55, pp. 185-191.
  11. Kalita D and Phukan B (2010), "Some ethnomedicines used by *Tai Ahom* of Dibrugarh district, Assam, India", *Indian Journal of Natural Products and Resources*, Vol. 1(4), pp. 507-511.
  12. Kar A and Borthakur S K (2008), "Wild vegetables of Karbi-Anglong district, Assam", *Natural Product Radiance*, Vol. 7(5), pp. 448-460.
  13. Manandhar N P (1987), "Traditional medicinal plants used by tribals of Lamjung District, Nepal", *Int J Crude Drug Research*, Vol. 25 (4), pp. 236-240.
  14. Phangcho P C (2001), "Karbi Anglong and North Cachar Hills- A study of geography and culture", Printwell, Diphu, Karbi Anglong.
  15. Pushpagandan P (1995), "Ethnopharmacology of *Trichopus zeylanicus*- The ginseng of Kerala- A review", In: P. Pushpagandan, Uff Nyman and V George (Eds.), *Proceeding of the first National Conference on Ethnopharmacology*. Visual Security Printing Enterprises Pvt. Ltd. , New Delhi (India).
  16. Sarma S K, Bhattacharya D K and Devi B (2001), "Medicinal Plants used by Bodo tribe of Nalbari district in Assam", *Ethnobotany*, Vol. 13, pp. 135-139.
  17. Singh B, Mishra B P and Tripathi S K (2012), "Status of ethnomedicinally important plants sampled from different forest patches of Mizoram University campus", *NeBio*, Vol. 3(3), pp. 16 -20.
  18. Sofowora A (1982), *Medicinal Plants and Traditional Medicine in Africa*. Wiley and Sons, Chichester 1982, 75-76.
  19. Teron R (2006), "Bottle gourd: Part and Parcel of Karbi culture", *Indian Journal of Traditional Knowledge*, Vol. 7(1), pp. 103-107.





**International Journal of Life Sciences Biotechnology and Pharma Research**

**Hyderabad, INDIA. Ph: +91-09441351700, 09059645577**

**E-mail: editorijlbpr@gmail.com or editor@ijlbpr.com**

**Website: www.ijlbpr.com**

