

# Reproductive Health Issues and the Use of Ethnomedical Practices by the Various Communities and Tribes of Assam

<sup>1</sup>Mumina Islam Choudhury

Research Scholar,  
Department of Life Science and Bioinformatics  
Assam University, Silchar (Diphu Campus)  
muminaislam93@gmail.com

<sup>2</sup>Ramie. H. Begum

Assistant Professor,  
Department of Life Science and Bioinformatics  
Assam University, Silchar  
ani.ara@gmail.com

## Abstract

India is well known for its traditional system of medicine- Ayurveda, Siddha and Unani. These medicinal systems are found to be mentioned in the Vedas and ancient scriptures. Northeast India is home to about 225 tribal communities which comprises of about one third of the listed tribes of India and represents one of the biodiversity hotspots of the World. The tribes have the vast knowledge of medicinal plants and animals which are used by the local communities to treat various reproductive health issues. The present study focuses on the ethnomedical practices of various tribes and communities of Assam which are found to be very useful in treating the reproductive health issues of women. In the present investigation, a total of 43 species of plants were reported as having ethno-medicinal importance and used by local communities to cure different diseases. The documentation of the ethnomedicinal flora, and repatriation of the knowledge to the future generation is very important or else this orally transmitted knowledge might get lost in the near future.

**Keywords:** Traditional Knowledge, Ethnomedical Practices, Tribes .

## Introduction

Tribes form an important part of the total population in India. A tribe is a collection of families, that bears a common name, members to which occupy the same territory, speak the same language and observe certain taboos regarding marriage, profession or occupation and have developed a well assessed system of reciprocity as well as mutuality of obligation. The tribal people of India are eligible for certain constitutional benefits and perks[1]. The tribal people form a heterogeneous community with a huge diversity. Northeast India is home to people belonging to different races and cultures. Assam is considered as one of the most beautiful states of Northeast with all its greenery. Assam is a land of numerous and diverse ethnic groups, tribes and castes with their unique sociocultural life[2].

Assam is one of the prominent states of India and has been involved in political and social issues of the nation for long time. The population of Assam according to 2011 census stands at about 31 million making it the 14<sup>th</sup> most populated state in India with a growth rate of about 17%. There are around 14 recognised Plain Tribe communities, 15 Hills Tribe communities and 16 recognised Schedule Caste communities in the state[3].

The state Assam happens to be the melting pot of different ethnic, religious and linguistic communities. The result of which can be seen in the creation of a great Assamese culture. A look into the history of Assam reveals that the state has seen the intermixing of three racial elements, the Austro-Asiatics, the Mongoloids and the Caucasoid. However there is a perfect blending of culture and heritage of the various ethnic groups in spite of their having disparate socio-cultural heritages and speaking different languages. Therefore, Assam has been blessed with a truly composite culture. Geographically Assam can be divided into three areas, the Brahmaputra Valley, the Barak Valley and the hilly area formed by Karbi-Anglong and North Cachar hills. The Brahmaputra Valley again can be divided into three zones, namely, Upper, Middle and Lower[4]. Waves of migration brought the Austro-Asiatics, Mongoloids, Negritos, Dravidians, Alpines, Indo-Mongoloids, Tibeto-Burmese and Aryans into Assam. The unique fusion of all these groups gave rise to a new composite culture which is now known as Assamese. The Mongoloids who migrated to Assam is said to have originally come from eastern Eurasia from where they migrated to different parts of Asia. The Mongoloid population, at present classified as "Scheduled Tribes" by the Constitution of India include the Bodos, Kacharis, Deoris, Rabhas, Sonowal Kacharis, Tiwas, Misings, Karbis, Dimasas, Meches, Garos etc. A very significant wave of Mongoloid migration brought the Ahoms to Assam. The Ahoms came from Upper Burma by crossing the Patkai ranges in the early part of the 13th century. They were members of the Thai or Shan group. Later the Ahoms were followed by some other Shan groups like Khamti, Tai Phake, Aiton, Turung, Khamyang etc. The Bodo or Kachari tribe of Assam is scattered throughout the state. The Dimasas Kacharis are primarily concentrated in the North Cachar Hill district. They speak 'Dimasakachari', a language that uses Bengali script. The Sonowal Kacharis inhabit Dibrugarh, Dhemaji, Lakhimpur, Sibsagar and Jorhat districts. The Karbis are the largest ST (Hills) community of Assam. The Karbis originally belonged to Western China and entered Assam from Central Asia through migration. The non-Karbis call themselves Mikirs, but in their own dialect they call themselves Arleng (the Man). Linguistically, the Karbis belong to the Tibeto-Burman group and racially they belong to the Mongoloid group. They mainly inhabit the district of Karbi Anglong (formerly called the Mikir Hills district). Some of them also occupy the adjoining areas in the North Cachar Hills. The Misings were earlier known as Miris and their settlements are mainly concentrated in the districts of Dhemaji, Lakhimpur and Jorhat. In their language Mi is man, shing is white/good. So Mishing stands for good man[3,5].

It is said that the Ahoms have descended from a group of the 'Mau' tribe of Shans who are known as the Myanmarese in the Upper Irrawady. The Ahoms have their own language, religion, culture, customs and traditions which give them their own separate identity. The Ahom kings were tolerant of all religions-Hinduism, Islam, Buddhism and tribal cults. During the period of the Ahoms there was no religious persecution or any religious riots between the different communities of the time. Originally the Ahoms spoke Tibeto-Burman languages but gradually they abandoned their language and adopted Assamese as their own language[6].

### **Reproductive health issues:**

Women constitute an important segment of human society and perform multiple roles as mother, sister, daughter, and above all, they are economical and reproductive partners. The well-being of the women and the importance of women's health which are the prerequisites for human and social development remain unattended and neglected for a considerable period. Reproductive Health is a fundamental human right, and it is everyone's right and everyone's responsibility to ensure to the womenfolk, who constitute almost half of the world's population a healthy condition of their reproductive health. The term "Reproductive health" is defined as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity, in all matters relating to the reproductive system, its functions and processes. Reproductive health therefore, implies that people are able to have a satisfying and safe sex life and that they have the capacity to reproduce with

the freedom to decide it, when and how often to do so [7]. Reproductive health also implies that women can go safely through pregnancy and childbirth, that fertility regulation can be achieved without health hazards [8]. Reproductive health includes sexual health, the purpose of which is the enhancement of life and personal relations, and not merely counseling and care related to reproduction and sexually transmitted diseases [9]. Research has shown that numerous pregnancies and closely spaced births erode a mother's nutritional status which can negatively affect the pregnancy outcome such as premature births, low birth weight babies and also increase health risk for mothers [10,11]. The poor reproductive health condition of the millions of women worldwide particularly women in developing and underdeveloped countries is found to have resulted from the complications associated with various maternal issues such as complications in pregnancy, prenatal and neonatal mortality, unsafe abortion, etc. On the other hand, a woman faces various reproductive health issues that prevent her from getting pregnant.

### **Materials and Methods:**

#### **The study area:**

The study was carried from the following districts of Assam:

#### **Karbi Anglong, Jorhat, Sivasagar and Nagaon.**

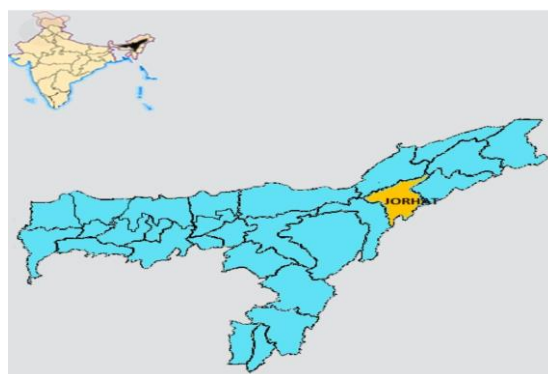
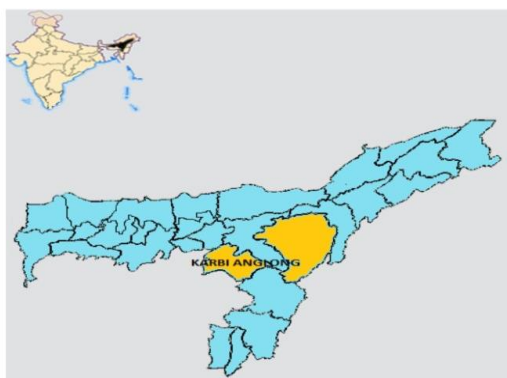
**Karbi Anglong-** It is one of the 34 administrative districts of Assam in India. The district is administrated by Karbi Anglong Autonomous Council according to the Sixth Schedule of the Constitution of India. The districts plateaus are an extension of the Indian Plate (The Peninsular Block) in the Northeast India [12]. The district is bounded by Golaghat district on the east, Meghalaya state and Morigaon district on the west, Nagaon and Golaghat districts on the north and Dima Hasao district and Nagaland state on the south. It is located between 25° 33' and 26° 35' North latitude and from 92° 10' to 93° 50' East longitude. About 41.12% of geographical area of Karbi Anglong is under forest cover [12]. According to MSME-Development Institute, Diphu, the significant forest types found in Karbi Anglong District are: Moist semi-evergreen forests, Moist Mixed Deciduous forests, Riverain Type and Miscellaneous type with scattered pure or mixed patches of bamboos [13]. These forest areas are natural museums of living giant trees, having a rich collection of rare, endemic and endangered species, the forests consists of various medicinal plants and economically important organisms, a treasure for nature lovers and a laboratory for environmentalists [12]. Karbis are the principal tribal community in Karbi Anglong district.

Selected areas from this district are: **Dokmoka and Howraghat,**

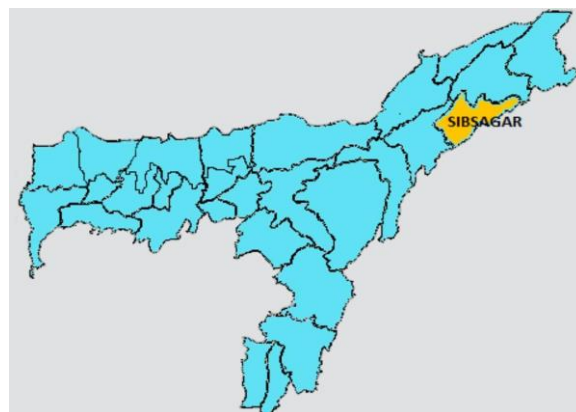
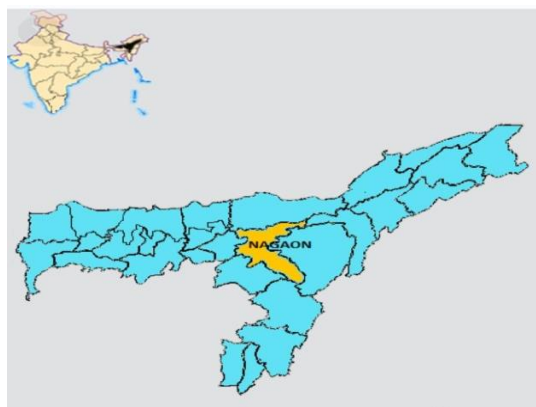
**Jorhat :** Jorhat is an administrative district of Assam located in the central part of Brahmaputra. The district is located between the Brahmaputra valley on the north and Nagaland state on the south, Charaideo on the east and Golaghat on the west. The total population of Jorhat district is 1,199,097 . Its total area is 2851 sq km. It is the 12<sup>th</sup> largest district in the state by population and area. The district is located at 26.75°N 94.22°E. It has an average elevation of 116 metres (381 feet) [14]. The survey was conducted in the following four villages: **Soria Pathar Mising Gaon, Balijan Shyam Gaon, Betbari Shyam Gaon and Na Shaym Gaon.**

**Sivasagar:** This district is located in the upper part of Assam. It comprises an area of 2668 sqkm. According to 2011 census, the district has a population of about 11,50,253 and population density of 431 inhabitant per sq.km. The district lies between 27.45° N and 27.15°N latitude and 94.25°E and 95.25°E longitude. The district is bounded by the river Brahmaputra on the north, Naga Hills and Arunachal Pradesh on the south, the Charaideo district on the east and Jhani river on the west . The district has acquired its distinct identity due to coexistence of different races, tribes and cultures [15].

**Nagaon** : The Nagaon district is situated in central Assam at south bank of river Brahmaputra and has a total geographical area of 3,975 sq.km that cover 4.88 percent of total geographical area of the state of Assam . The district is situated between North latitude ranges 25.45’to 26.45 ‘ and East longitude range 92.15 to 93.15’. The district is surrounded by Golaghat and karbi Anglong district on the East, by Karbi Anglong on the South by Morigaon district on the West and by the river Brahmaputra on the North. According to 2011 census, the district has a population of 1,894,788.[16]  
 Selected areas from this district are: **Puronigudam , Raidingia and Chapanla.**



a)Location of Karbi Anglong district(source:veethi.com) b)Location of Jorhat district(source:veethi.com)



c)Location of Nagaon district (source-Veethi.com) d)Location of Sivasagar district (source-veethi.com)

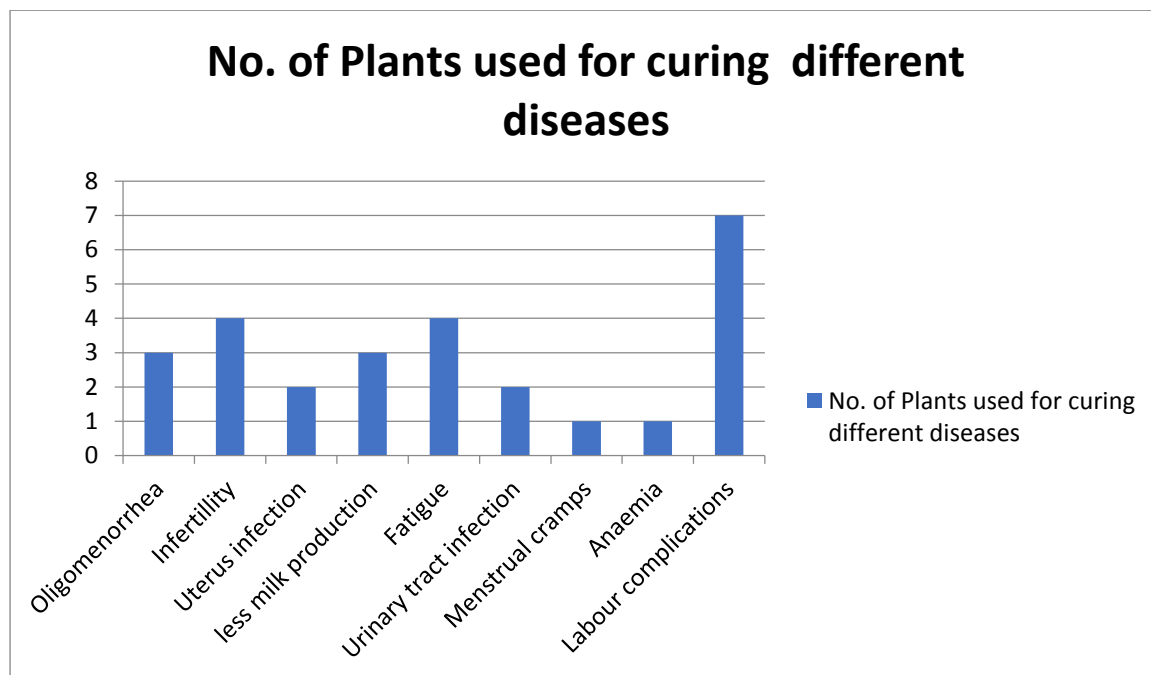
**Survey Methodology :-**

Field explorations were carried out in the selected study areas .The information was collected from the tribal medicine men and people of the tribal community, who knew well about the surrounding plants, their local names, parts of the plant used, preparation of herbal medicine, mode of administration, doses and uses in different ailments and diseases. Interviews were conducted after obtaining oral prior informed consent from each participant. The informants were randomly selected and included both older men and women, who regularly used and visited the forests since their childhood and used plants to cure a variety of ailments. The interviews were conducted in the local dialect to avoid any translation problem. During the interviews structured questionnaires were

developed and accordingly the possible information were collected (Annexure-1) on medicinal plants, including the local name of the plant, name of the disease for which a particular plant was used, part of the plant used and mode of administration. The informants were requested to show the plants in their natural habitat. Specimens of all plants were collected and identified. The identification of plants was done by collected vouchers of specimen which were deposited at the Department of Life Science and Bioinformatics, Assam University. The ISE (International Society of Ethnobiology) Code of Ethics was followed. The scientific names of all plants follow TROPICOS ([www.TROPICOS.org](http://www.TROPICOS.org)), and the nomenclature follows APG-3.

**Results and Discussion:**

The participants from the study sites made a wide use of a large variety of plants as food and medicine. In the present investigation, a total of 41 species of plants and 2 species of fish were reported as having ethno-medicinal importance and used by local communities to cure different diseases. The recorded plants belonged to 28 families. The dominant family was Fabaceae and Asteraceae with 4 species each, followed by Asteraceae ,Poaceae, Apocynaceae, Rosaceae, Cariaceae, Brassicaceae, Asparagaceae, Musaceae, Ranunculaceae, Crasullaceae ,Dilleniaceae, Aracaceae, Malvaceae, Melicaceae, Chloranthaceae, Euphorbiaceae, Olaceae, Verbanaceae, Dioscoreaceae, Saururaceae, Rutaceae, Musaceae, Piperaceae, Lamiaceae, Solanaceae and Plumbaginaceae[29,30].The recorded fishes belong to the family Channidae and Anguillidae [29,30].The number of plants parts used for the purposes of curing different diseases is shown in the Table1. Leaves were most frequently used followed by roots, shoots,tubers and fruits.



Traditional medicine is the sum total of the knowledge, skills and practices based on the theories, beliefs and experiences of the indigenous people. These skills and practices are used in the maintenance of the health, prevention, diagnosis, improvement of physical and mental illness of the people. Some ethnomedicinal plants are used by the pregnant women for prevention of pregnancy related issues. Most of the diseases and complications are cured by the use of plant parts or other nature’s products. Even some portion of the population uses animal body part by preservation or by other means.

Humans and plants share an age-old relationship. Reliance on plants is still seen and it is estimated that about 25% of prescription drugs contain active components derived from higher plants[17]. Our findings are very much in the range of other studies in Northern India. Kandi et al.[18] provided information of ethnomedicinal plants used by the tribes of Nuapada district of Odisha, where they reported a total of 49 angiosperms, belonging to 29 families and 45 genera, with Fabaceae reported dominant with 5 species. Biswas et al.[19] studied the use of plants in the Tripura community of Chittagong Hill tract and also reported that Fabaceae contained the highest number of medicinal plants, that most medicinal species were used for curing dysentery, including two common plants *Holarrhena antydysentria* and *Psidium guajava* which is also similar to *Regassa* [20]. Hooker[21], reported that in the north-eastern states of India, Asteraceae was the most dominant family of medicinal plants. Another study carried out by Reddy et al.[22] reported 60 plant species belonging to 33 families as of ethnobotanical use from tribal participants in Kadapa district of Andhra Pradesh. Pilania et al.[23] reported a total of 85 families, among which the main dominating families recorded were Fabaceae and Poaceae. Choudhury et al.[24] reported 53 plants species belonging to 33 families of angiosperms from Chorei tribe of southern Assam with Verbenaceae as the dominant family (5 species), 18 species were used for treatment of skin related infections, 7 for constipation and jaundice, 4 to cure cough, cold, and diabetes. Majumdar and Datta [25] studied the use of 50 ethnomedicinal plants belonging to 46 genera of 31 families by Tripuri tribes inhabiting hamlets on different hilly terrain and interior dense forest of South and West district of Tripura. Borah et al.[26] studied ethnomedicinal plants used by Mongoloid (Chutia, Sonowalkachari, Tai-Ahom) and Ao-Naga ethnic groups of Disoi Valley forest area of the Jorhat district of Assam of north-east, and reported 50 plant species from 33 families. Debbarma et al.[27] studied the use of 51 plant species belonging to 32 families to cure a variety of diseases of which Fabaceae was the dominant family with the highest number of species followed by Asteraceae and Lamiaceae along with some other families. Forty-two plant species found in their study were used individually and 8 plants in combination with other species. 7 species was used for dysentery, followed by body pain, cough, and toothache. Five species each were used for skin diseases and gastric problems, four for curing wounds, diabetes, cold and pile. 3 species each were used for curing chicken pox, fever and urinary disorders, two species each used to treat asthma and hemorrhages, and one species each was recorded to treat cuts, smallpox, jaundice, headache, epilepsy, and burns. Bhardwaj and Gakhar [28] reported that 17 ethnomedicinal plants belonging to 14 families were used by the tribes of Mizoram for cuts and wounds.

**Table 1. Examples of Some Plants/Animals during used during any reproductive health related issues:**

Sl no.	Family	Local name	Common name	Scientific name	Parts used	Mode of action
1	Fabaceae	Bionisapata	Butter chira	<i>Desmodium laxiflorum</i>	Leaves are taken and boiled with water	Disappearance of irregularity of menstrual cycle(Oligomenor rhea)
2	Apocynaceae	Chotiana	Devil's tree, chatwan ,chatri	<i>Alstonia scholaris</i>	Milk juice extract is taken with Perilla ocinoides in empty stomach	Enhances fertility in both male and female

3	Poaceae	Duboribon	Bermuda grass, ram ghas	<i>Cynodon dactylon</i>	Fresh grass is crushed and the juice is taken	Menstrual bleeding stops, quick healing of wounds
4	Rosaceae	Jetulipoka	Katsol, wild raspberry	<i>Rubus moluccanus</i>	Fruits, young shoot (leaves and stem) are taken	Helps in enhancing fertility in female
5	Asteraceae	Keheraj	Keysuria, babri	<i>Eclipta alba Hassk</i>	Leaf and stem	For treatment of irregularity in menstrual cycle
6	Fabaceae	Mithi gooti	Fenugreek , methi	<i>Trigonella foenumgrae cum Linn</i>	Seeds are grinded and taken with milk	Helps fight uterus infection, provides stamina
7	Cariaceae	Omita	Papaya	<i>Carica papaya</i>	Papaya is boiled and then taken	Increases milk production
8	Fabaceae	Modar	Pangra, Dadap	<i>Erythrina indica Lim</i>	Roots are to be grinded and taken along with milk	Helps in conceiving , provides stamina
9	Brassicaceae	Sojina	Drumstick tree, sajna	<i>Moringa oleifera Lamk</i>	Green fruits, seeds and tender leaves are used	Provides energy
10	Asparagaceae	Sotomool	Asparagus	<i>Asparagus racemoses wild</i>	Root juice is taken along with milk and sugar in empty stomach in the morning	Provides stamina and Enhances fertility in both male and female
11	Musaceae	Koldil	Banana flower	<i>Musa</i>	Fruit	Helps during pregnancy by maintaining a healthy uterus and also increases breast milk secretion for the lactating mothers
12	Ranunculacea e	Kaljeera	Black cumin	<i>Nigella sativa</i>	seeds	Helps in milk production
13	Crasullaceae	Duportenga	Air plant	<i>Bryophyllu m pinnatum</i>	Leaf	Reduces Urinary Tract Infection

14	Arecaceae	Taal misri	Palm candy	<i>Phoenix dactylifera</i>	Sugar obtained by palm fruit	Quick relief in burning sensation after urination
15	Arecaceae	Narikol pani	coconut water	<i>Cocos nucifera</i>	Fruit	Reduces dehydration
16	Dilleniaceae	Outenga	Elephant fruit	<i>Dillenia indica</i>	Fruit	Helps in Menstruation
17	Malvaceae	Sardol	Elephant rope tree	<i>Sterculia villosa Roxb.</i>	Root	Quickly reduces menstrual cramps
18	Channidae	Goroi	Snakehead	<i>Channa punctatus</i>	Whole fish	Increases milk production
19	Anguillidae	Kusiya	Eel	<i>Anguilla rostrata</i>	Whole fish	Increases haemoglobin
20	Poaceae	Nunthe parlin	Chaff flower	<i>Achyranthes aspera</i>	Tender twigs	Tender twigs are grounded, mixed with water and the juice is taken orally to reduce the complicity of labour.
21	Araceae	Lang abap	Sweet flag	<i>Acorus calamus</i>	Tubers	Tubers of Acorus calamus are grounded and mixed with water and the mixture is taken orally during labour pain.
22	Meliaceae	Neem keho	Neem tree	<i>Azadirachta indica</i>	Root	Grounded root juice is taken orally to treat infertility.
23	Chloranthaceae	Hanthening		<i>Chloranthus officinalis</i>	leaves	Leaves are boiled with water and regularly taken reduce complications during delivery
24.	Euphorbiaceae	Marthu		<i>Croton joufra Roxb.</i>	Leaves	Leaves are warm gently and massaged over the abdomen to reduce pain after delivery.
25	Asteraceae	Chulumpui	Sheep's ear	<i>Inula cappa</i>	leaves	Leaves are crushed and the



						juice is applied on the vaginal wound caused due to delivery
26	Asteraceae	Bap bongnai phulok	Christmas bush	<i>Eupatorium odoratum</i>	Tender twigs	Tender twigs are used to cure vaginal wound after delivery. Twigs are warmed and massaged gently on vaginal wound
27.	Olacaceae	Lojangthu	Red Stake climber	<i>Erythralum vagum</i>	leaves	Leaves are used in prolapsed genitals after delivery). Mustard oil is applied on leaf and the protruding genital is pushed gently with the oiled leaf
28	Verbenaceae	Mahar alosam	Glorybowe r	<i>Clerodendrum hastatum</i>	leaves	The leaves are baked and then cooled, vagina is massaged with the baked leaves for treatment of vaginal itches.
29	Verbenaceae	Phlek-ik	Glory tree	<i>Clerodendrum viscosum Vent.</i>	twigs	A few tender twigs are boiled in water and decoction is taken orally to reduce complicacy of menstruation. Half a glass is taken 2-3 times a day till recovery from the complicacy
30	Dioscoreaceae	Ruichin	Purple yam	<i>Dioscorea alata</i>	tuber	Boiled tubers are given to mother to reduce weakness after delivery. It also boosts immunity
31	Saururaceae);	Han kumphi	Chameleon plant	<i>Houttuynia cordata</i>	leaves	Leaves are boiled and mixed with boiled tubers of

						<i>Solanum tuberosum</i> and taken orally to reduce general weakness after delivery.
32	Fabaceae	Thepak	Hyacinth bean	<i>Lablab purpureus</i>	roots	Mature roots are grounded and mixed root of Mimosa pudica and grains of Oryza sativa are grounded and the juice is taken orally as a measure for permanent sterility.
33	Rutaceae	Thenghans o	Entire-Leaf Lime Berry	<i>Micromelum integerrimum</i>	Shoot	tender shoots are cooked and given at least one day before expected date of delivery for initiation of delivery
34	Musaceae	Lothe	Cooking bananas	<i>Musa paradisiaca</i>		The filtrate of fresh ashes of sheath is taken many times a day as abortifacient.
35	Poaceae	Arphek	Tiger grass	<i>Thysanotana maxima</i>	twigs	Twigs are grounded and the Juices(approx 5-10 ml) are taken orally once a day for about a week to affect permanent sterility.
36	Poaceae	Tarsing	Sugar cane	<i>Saccharum sp.</i>	twigs	A few twigs (5-10) are grounded into paste, mixed with water and the juice is taken orally for sterility
37	Poaceae	Sok	Rice	<i>Oryza sativa</i>	grains	Water extract of grains are taken during labour to relieve pain. It is reported to be

						more effective when mixed with other medicinal plants like Achyranthes aspera and Acorus calamus.
38	Piperaceae	Ahom abirik	Black pepper	<i>Piper nigrum</i>	seeds	Seeds are grounded and boiled with chicken and the soup is given to mother for quick recovery from weakness after delivery.
39	Lamiaceae	Han bipo		<i>Pogostemon parviflorus</i>	leaves	Baked leaves or paste of it is applied on vaginal wounds after delivery. Juice of leaves is taken regularly to cure acute abdominal pain after delivery.
40	Solanaceae	Phurui athe	Potato	<i>Solanum tuberosum</i>	tubers	Boiled tubers are mixed with leaves of <i>Hottuynia cordata</i> and taken by mother to recover from general weakness soon after delivery
41	Asteraceae	Bapbongnai arikang	Climbing hempweed	<i>Mikania scandens.</i>	shoots	Tender shoots of the twinning herbs are baked and applied thrice daily on the vaginal wound after delivery. It is repeated till the wounds are healed.
42	Plumbaginaceae	Samlok	Ceylon Leadwort,	<i>Plumbago zeylanica</i>	stem	Stem is tied around the thigh region with a long thread and then inserted in the

						vagina to initiate abortion. It is kept for a day or two, till blood oozes out.
43	Poaceae	Kepho	Common bamboo	<i>Bambusa sp.</i>		The ashes of young culms (Arjang) are popular abortifacients used among the Karbi women. The ashes are collected and filtered. The highly concentrated filtrate (approx. 5ml) is consumed by many unwed mother to abort the womb.
44	Amaranthaceae	Dido	Spiny amaranth	<i>Amaranthus spinosus</i>	root	Roots are boiled and the juice is taken to treat sexual disorder

**Rituals and traditional beliefs :**

The people residing in the study area are mostly rural dwellers having unique beliefs and rituals, which they follow for the good health of the mother and the child. These beliefs vary from community to community and area to area. In traditional societies myths and rituals are two central components of religious practice. The Karbi tribes in the study area practices various rituals. The community embraces different religions such as Christian, “Arona Kimi”,”Honghari “respectively. Among the Karbi tribe, those who belong to the Honghari still follows and practice their traditional belief system, which is animistic, whose central figure of devotion is “Hemphu –Mukrang-Rasengja”.

Maternal care is affected by cultural values which are associated with certain taboos and restrictions and are strictly bound to be followed by the expectant mother. It is believed that violation of these beliefs and tradition during pregnancy would harm the mother and the baby. It is also believed that the blessing of animistic would help in promoting safe delivery of the baby.

The rituals and traditional beliefs perform are as follows:

**Hi-e-Phuri**– Usually done after 1,2 days of delivery to control excess bleeding of the mother.

**Hanthor kechak** – Perform on the day of birth, following a traditional saying- “ne so, ne so” meaning “ my child, my child “, for the safety of the child so that the soul of the child is free from evil spirits.

**Hempu avur-** Perform after a week of delivery after the removal of umbilical cord of the baby , which is believed to develop a good mentality and health of the baby.

In order to prevent sleeplessness , cocoon is burnt slightly and the ashes is rubbed all over the baby's body and foot. Yellow ginger is being used as an agent for the child's protection as it works as a repellent against bad environment , and other paranormal things which according to their beliefs exist.

**Umbilical cord-** People have a different belief based on U- cord , they believe that the Umbilical cord is medicinal and hence, they preserve it in a bottle or wrapped it with paper and later on they used it as a medicine when suffering from stomach pain. The preserved Umbilical cord is mixed with water and given to the child.

**Participants from Sivasagar** – The health of a Deori woman is taken special care of and even after the delivery. During pregnancy, the expected mother is prohibited from taking alkali (khar) as they believe it to cause miscarriage and also do not eat jackfruit for the same reason. For early detachment of umbilical cord of the baby, the juice of chewed beetle nut and leaves are put on to the naval. For the increase production of milk after delivery ,black pepper mixed in prepared food ; e.g. Curry ,soup etc .

**Participants from Jorhat** – There are certain believes which restricts pregnant woman and her husband from doing certain types of activities like butchering animals, fishing and crossing the rivers. The mother of the baby collects the umbilical cord which falls in 3-7 days and keeps inside a cocoon . Later, it is tied around the neck of the baby, with threads of red and black color with the belief that it will protect the baby from any kind of infections or disease.

For quick falling of the naval cord, the water from the wet hair of the mother is being in the naval cord of the baby.

### **Conclusion**

The rural people living in different areas have different way of treatment and different source of treatment .Studies suggest that the knowledge owned by the rural people could be preserved and it is the harness necessity of the hour as it may become extinct for the future generation. Although a variety of studies had been conducted in the study area, we found that the plant knowledge of the local population is still under-documented. Even common species were often used for different purposes in other study areas. The fact that leaves were the most commonly used plant part is imperative from a conservation perspective, because local use modalities are already in place to avoid over-exploitation, e.g. by root or bark collection. The documentation of the ethnomedicinal flora, and repatriation of the knowledge to the local population, is the more important because otherwise this orally transmitted knowledge might get lost in the near future. The ancient wisdom in these traditional system of medicine is still not explored properly, the accumulation of rich knowledge from these medicinal systems may lead to new avenues in discovery of herbal medicine. This would help the researchers and practitioners to gain deeper perspicuity of traditional medicinal system, facilitate and strengthen the commonalities and overcome the challenges towards their acceptance and harmonization of such medicinal system.

**Conflicts of interest:** None declared

**Acknowledgement:** I express my deep sense of gratitude to the people of the study area for their love and cooperation.

**Annexure 1: Questionnaire used to collect information on ethnomedicinal plants**

**Informant detail:**

Name:

Sex:

Age:

Village:

Block:

District:

Main Occupation:

Education:

**Ethnomedicinal uses of plants**

- Local/Vernacular name of plant:
- Scientific name of plant
- Plant part used:
- Name of ailment for which plant used:
- Mode of preparation:
- Use (externally/internally):
- Plant habitat:
- Any cause of declining ethnomedicinal plants
- Conservation practices on ethnomedicinal plant

**References:**

- [1] Salehin M.,” Reproductive health of tribal population in India: A sustainability approach”,2012.
- [2]Sarma U., Dutta B.,” Health Care Seeking behaviour Among the Tangsa Women of Tinsukia District of Assam : A Micro Study ,”The Oriental Anthropologist ,vol.19 (1),pp. 64-82,2019.
- [3]. Hussain A, “Background of Assamese Society , Culture and Literature,” SSRN electronic Journal,2021.
- [4]Das B.M., “The People of Assam : Origin and Composition”, Gyan Publishing House, New Delhi, pp. 26, 1987.
- [5] Sharma, Mallika: "Culture". In Chittattukalam Kuriala (ed.), Culture and Religions of Assam, Omsons Publications, New Delhi, 1987, p. 26.
- [6] Gogoi, Padmeswar: Tai-Ahom Religion and Customs. Publication Board, Assam, Gauhati,p.35, 1976.
- [7]”Reproductive health,World Health Organisation,” online available from <https://www.who.int/westernpacific/health-topics/reproductive-health>.
- [8]Santoro N., Filicori M., Crowley W.F., Jr., “Hypogonadotropic Disorders in Men and Women: Diagnosis and Therapy with Pulsatile Gonadotropin-Releasing Hormone,” *Endocrine Reviews*, Vol.7, Issue 1, pp.11–23,1986.
- [9] Perkins R.B., Hall J.E., Martin K.A., “Neuroendocrine abnormalities in hypothalamic amenorrhea: spectrum, stability, and response to neurotransmitter modulation,” *The Journal of Clinical Endocrinology*,Jun;84(6):1905-11,1999.
- [10]Baruah T., Das H. ,”Reproductive Health Status of Women in India with Special Reference to Assam ,International Journal of Advanced Science and Technology,” Vol. 29 No. 3s (2020): Vol 29 No 3s 2020.
- [11] Jejeebhoy S.J., “Addressing women's reproductive health needs: Priorities for the family welfare programme,”*Economic and Political Weekly*, pp.475-484,1997.
- [12]Choudhury M.I, “Diversity, Habitat Preferences, Distribution and Conservation of Geckos at Eastern Karbi Anglong, Assam, India: An Extensive Survey,” *Impacts & Consequences of Environmental Degradation on Animal Health and Human Wellbeing*”,pp.63-72,2021.

- [13] "Brief Industrial Profile of Karbi Anglong District", <https://karbianglong.gov.in/information-services/district-profile> ,accessed on Aug18,2022).
- [14] "Jorhat," available online from <https://en.wikipedia.org/wiki/Jorhat>,(accessed Aug18,2022).
- [15]"Sivasagar," available from <https://en.wikipedia.org/wiki/Sivasagar>,(accessed Aug18,2022).
- [16]"Nagaon," Available online from <https://en.wikipedia.org/wiki/Nagaon> ,(accessed Aug18,2022).
- [17] Tiwari, N.N. and Joshi, M.P., "Medicinal plants of Nepal," Volumes I, II and III. J Nepal Med Assoc. vol.28,pp.181- 190, 221-232, 266-279,1990.
- [18] Kandi B., Dhal, N.K. and Mohanty, R.C. , "A case study on indigenous phytotherapy for skin diseases in Nuapada District, Odisha, India", International Journal of Herbal Medicine,vol. 1(2),pp.117-123,2013.
- [19] Biswas, A., Bari, M.A., Roy, M and Bhadra, S.K., " Inherited folk pharmaceutical knowledge of tribal people in the Chittagong hill tracts, Bangladesh," Indian Journal of Traditional knowledge,vol.9 (1),pp.77-89,2010.
- [20] Regassa, R. (2012)," Assessment of indigenous knowledge of medicinal plant practice and mode of service delivery in Hawassa city, southern Ethiopia," Journal of Medicinal Plant Research,vol. 7(9)pp.517-535,2012.
- [21] Hooker, J.D., " Flora of British India", Vol-VII, L Reeve and Co Ltd, The Oast House, Brook, Nr. Ashford, Kent, London,1897.
- [22] Reddy, S., Reddy, R., Madhusudhana, A., Philomina, N.S. and Yasodamma, N., " Ethanobotanical survey of Sheshachala hill range of Kadapa District, Andhra Pradesh, India," Indian Journal of Fundamental and Applied Life Sciences,vol.1(4),pp.324-329,2011.
- [23] Pilania, P.K., Gujar, R.V., Joshi, P.M., Shrivastav, S.C. and Panchal, N.S., " Study of floral species diversity of Panchmahal district (Gujarat) of Western India," Science Park.,vol.1(6)pp.1-15,2013, DOI: [10.9780/23218045/122013/18](https://doi.org/10.9780/23218045/122013/18)
- [24] Choudhury, S., Sharma, P., Dutta, M., Choudhury, G. and Sharma, D., "Ethnomedicinal plants used by Chorei tribes of Southern Assam, North Eastern India,"Asia Pacific Journal of Tropical Disease,pp.141-147,2012, [https://doi.org/10.1016/S2222-1808\(12\)60140-6](https://doi.org/10.1016/S2222-1808(12)60140-6).
- [25] Majumdar, K. and Datta, B.K., "A study on ethnomedicinal usage of plants among the folklore herbalists and Tripuri medicinal practitioners," Part 1. Natural Product Radiance,Vol. 6(1),pp.6-73,2007.
- [26] Borah, S.M., Borah, L. and Nath., S. C., "Ethnomedicinal Plants from Disoi Valley Reserve Forest Of Jorhat District, Assam",Plant Sciences Feed.,vol. 2(4),pp.59-63,2012.
- [27] Maria Debbarma<sup>1</sup> , Nazir A. Pala<sup>2</sup> , Munesh Kumar<sup>3\*</sup>, Rainer W. Bussmann," Traditional Knowledge of Medicinal Plants in Tribes of Tripura in Northeast India," Africal Journal of Traditional ,Complement and Alternative Medicine, vol.14 (4),pp.156-168,2017.
- [28] Bhardwaj, S. and Gakhar, S.K., "Ethno medicinal plants used by the tribes of Mizoram to cure cut and wounds," Indian Journal of Traditional Knowledge,vol.4(1),pp-75-80,2005.
- [29] Reena Terangpi, S. , Basumatary, TK. and Teron R "Ethnomedicinal plants of the Karbi ethnic group in Assam state (India) for management of gynaecological disorders", International Journal of Pharmacy and Life Sciences, 2014.
- [30] Barua KN and Baruah B,"Traditional ecological knowledge of karbi tribe of Assam with emphasis on health care system", International Journal of Herbal medicine,2021.