



Research Article

ETHNOMEDICINAL PLANTS USED BY THE PEOPLE OF SORBHOG (BARNAGAR) AREA OF BARPETA DISTRICT, ASSAM, INDIA FOR VARIOUS AILMENTS

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ABSTRACT

The present study deals with the medicinal plants used by the people of 3 villages of Sorbhog area of Barpeta district, Assam to document the information related to various ethnomedicinal plants used by the villagers to cure various diseases. Intensive field work was carried out to obtain the detailed information on the plants and plant materials used by the villagers. In the present study a total of 33 medicinal plants belonging to 31 families were reported. These plants were used to cure various diseases like diabetes, jaundice, menstrual problems, stomach problems, infertility etc. The herbal medicines were prepared either from various parts of a single plant or multiple plants.

Keywords: Medicinal plants, ethnomedicine, diseases.

INTRODUCTION

North east India is very rich in biodiversity. There is a huge treasure of medicinal plants in this area and many of them are still unexplored. There are many widespread diseases which may prove to be fatal in future like diabetes, heart diseases etc. The treatment available for these diseases in the market may cause serious side effects so herbal remedy is a better option. It has been estimated that about 80-85% of population both in developed and developing countries rely on traditional medicine for their primary health care needs and it is assumed that a major part of traditional therapy involves the use of plant extract or their active principles^{1,2,3}. Due to lack of organized health care systems in developing countries like India people with chronic diseases are worst sufferers. Hence majority of the populations still have limited access or no access especially in remote areas to modern medicines^{4,5}. From ancient time people have accumulated a huge knowledge on various medicinal properties of plants. This knowledge is passed from generation to generation either orally or textually. Ethnobotanical researches are providing fundamental information in the search of new drugs. However, one of the greatest difficulties faced by the researchers is the inadequate authentic information on the identification of the plants that were recorded in the ancient literature. To overcome this situation, the present investigation attempts to a scientific study by recording the data, collection, and preservation of the plants used by the herbal practitioners in the Sorbhog area of Barpeta district. Recently the practice of herbal medicine has been declining in the very places where it has been once developed and nurtured by oral tradition. This may in future lead to the loss of valuable information about the plants used⁶. The demand for herbal medicines is increasing rapidly due to their lack of side effects. Further as health care costs continue to escalate, the attraction for low-cost remedies has stimulated consumers to re-evaluate the potential of alternatives⁷.

In the present study, various plants were collected which were reported by the people to cure various types of ailments including diabetes, heart disease, worms infestation in children, cuts and injuries etc. Various plant parts like leaves, roots, barks, rhizome, seeds etc have been reported to be used by the locals of the Sorbhog area to cure various diseases. Mostly leaves are used either in the form of paste or decoction. Mostly single plants or plant part is used but sometimes multiple plants are mixed to cure a particular disease. Ethnomedicinal plants in Sorbhog area is still unreported as per the available resources.

MATERIALS AND METHODS

Study area

Barpeta district consists of two civil sub divisions i.e Barpeta and Bajali. This district covers an area of 2645 km² and is bounded by Baksa district in the North, Nalbari district in the east, Kamrup and Goalpara district in the south and Bongaigaon district in the west. The latitude and longitude of Barpeta is 26.14⁰N and 91.00⁰E respectively. The general topography of the Barpeta district varies from low lying plains to highland having small hillocks in the south west corner of the district, namely Baghbar, Fulora and Chatala overlooking the mighty Brahmaputra. Total population is 1,693,622 as per 2011 census out of which 867,004 is total male population and 826,618 is total female population. Male literacy rate is 57.55% and female literacy rate is 48.15%. Total revenue circle in the district is eight. There are 11 community development blocks, 129 gaon panchayats and 851 villages.

Climate of Barpeta district remains mild round the year. Tropical monsoon climate of the district provides two distinct season-summer and winter. The summer season of March to May is followed by the monsoon from June to September, it is followed by winter season from October to February.

Sorbhog (Barnagar) area

Sorbhog is a town committee area in Barpeta district. It is located in the bank of river Beki. Sorbhog is located at 26.50°N 90.87°E. Sorbhog area is located in Barnagar tehsil of Barpeta district, Assam. It is situated 29 km away from district headquarter Barnagar. Barnagar is the sub-district headquarter of Sorbhog. As per 2011 census report Sorbhog has a population of 8,112 out of which 4080 are males while 4032 are females. Literacy rate is 88.05% higher than state average of 72.19%. Male literacy rate is 91.59% and female literacy rate is 84.49%.

Ethnobotanical survey

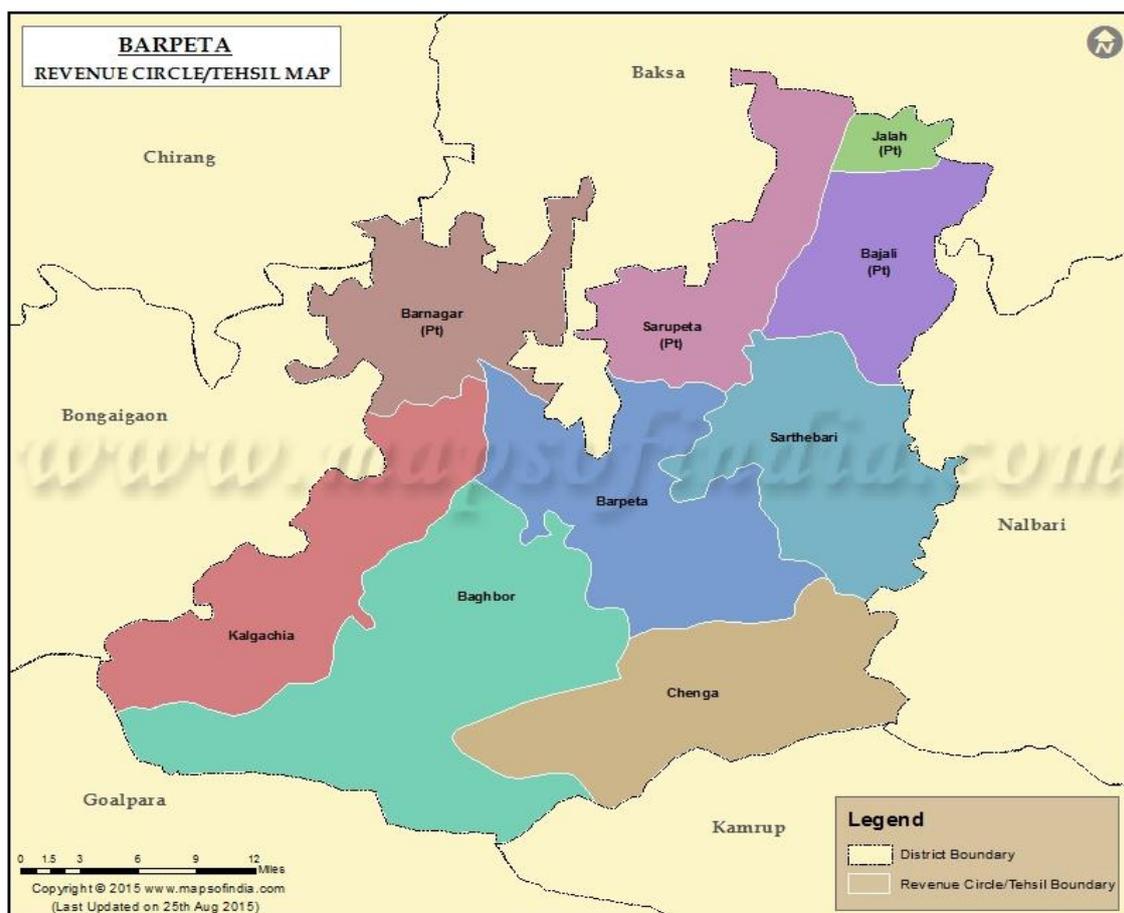
Field investigations were conducted in 3 villages namely Nizdamaka, Chokchoka, Kalitapara. During the study, daily activities of the local inhabitants were closely observed and interpersonal contacts were established by participating in their functions. There were 30 informants within the age group of 30 to 68. Among them three were tribal practitioner. Ethnobotanical data were collected according to the methodology suggested by Jain *et al.*, 1995⁸ using a standard questionnaire. The ethnobotanical data were collected using questionnaire, interviews and discussions. The survey was conducted from August 2018 to August 2019.

Plant collection

The medicinal plants used by the villagers were collected following standard protocols and preserved using herbarium techniques. Specimens collected from the field were preserved as herbarium and then the specimen were identified by the experts in Ayurvedic College, Guwahati and Department of Botany, Gauhati University.

RESULT

We collected information regarding various medicinal plants used by the villagers to treat various types of diseases including diabetes, menstrual problems, heart problems etc as mentioned in table I. Medicinal plant species collected in the survey are given in the table below. We got 33 plant species belonging to 31 families in the present study. The usage of plant parts Leaves: 11, Fruit: 6, Bark: 4, Root: 4, Flower: 3, Rhizome: 2, Whole plant: 2, Seed: 1, , Bulb: 1, Corms and runners: 1; Carpel: 1 which is mentioned in figure I. Crushing and boiling of plant materials remains the most commonly used method for herbal preparation. Majority of herbal preparation was made using water as the medium. These are taken orally for short or long duration depending on the severity of the ailment.



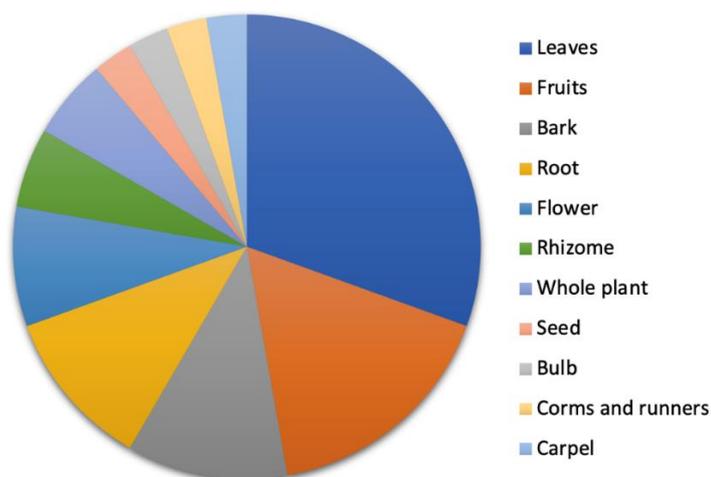


Fig 1: Use of various plant parts for curing different diseases in the study area

TABLE I: MEDICINAL PLANTS REPORTED BY THE VILLAGERS TO CURE VARIOUS DISEASES

Scientific Name	Local Name	Family	Parts used	Ethnomedicinal Use
<i>Aegle marmelos</i>	Bel	Rutaceae	Fruit	Fruit juice is beneficial in diabetes. Ripe fruit mixed with water and jaggery is used in regular intervals to cure the symptoms of Diarrhoea.
<i>Allium sativum</i>	Nohoru	Amaryllidaceae	Bulbs	Garlic is used to control high pressure; garlic paste with mustard oil is heated and applied externally to get relief from cold and cough in children.
<i>Aloe barbadensis</i>	Aloe Vera	Asphodelaceae	Leaf	The gel is useful in treatment of burns, useful in diabetes. Aloe gel wrapped with a cloth overnight to get relief from painful nail infection.
<i>Alocasia macrorrhiza</i>	Bar kachu	Araceae	Leaf	Leaf paste is used externally to treat knee joint pain and headache
<i>Alstonia scholaris</i>	Chatiyana	Apocynaceae	Bark	Bark is beneficial in malaria, leaf juice used in diabetes
<i>Amaranthus viridis</i>	Khutora	Amaranthaceae	Root	Root juice is useful in infertility. Stem juice used as antidote for snakebite
<i>Ananas comosus</i>	Pineapple	Bromeliaceae	Fruits	Ripe fruits are abortive, used as a lung tonic for smokers and alcohol users.
<i>Asparagus viridis</i>	Satmul	Liliaceae	Root	Decoction of root powder is mixed with honey and used in infertility.
<i>Averrhoa carambola</i>	Kordoi	Oxalidaceae	Fruit	Fruit is beneficial in dysentery and diarrhoea
<i>Azadirachta indica</i>	Neem	Meliaceae	Leaf	Decoction of fresh leaves is used to take bath every day to treat various skin diseases.
<i>Bacopa monnieri</i>	Brahmi	Scrophulariaceae	Leaf	Leaf is good for memory, reduce anxiety
<i>Carica papaya</i>	Amita	Caricaceae	Fruits	Unripe fruit is abortive and ripe fruits when taken every day is beneficial for the treatment of worms in children.
<i>Colocasia esculenta</i>	Kola Kochu	Araceae	Corms and runners	Corms and runners are consumed to treat piles and tonsillitis
<i>Costus speciosus</i>	Jamlakhuti	Zingiberaceae	Rhizome	Rhizome paste is useful in diabetes, used in skin diseases.
<i>Cynodon dactylon</i>	Dubori bon	Poaceae	Whole plant	Plant juice is taken orally to treat dysentery, grass paste is used in wounds to stop bleeding.
<i>Emblica officinalis</i>	Amlakhi	Euphorbiaceae	Leaves and fruits	Leaves and fruits are useful in diabetes, fruit paste stimulates hair growth, seed is used in menstrual problems.
<i>Hibiscus rosa sinensis</i>	Joba	Malvaceae	Flower, leaf	Flower paste is used in cuts and injuries. Flower and leaf paste is useful in hair growth.
<i>Leucas aspera</i>	Duron	Lamiaceae	Leaves	Leaves are beneficial in stomach problems and diabetes, beneficial in headache
<i>Lawsonia inermis</i>	Jetuka	Lythraceae.	Leaf	Leaf paste promotes hair growth, beneficial in skin diseases
<i>Mimosa pudica</i>	Pudina	Mimosaceae	Leaf	Leaf used in digestive problems, leaf juice used externally in piles and boils.
<i>Mirabilis jalapa</i>	Godhuli gopal	Nyctaginaceae	leaf	Fresh leaves are applied on itches in skin and also in joint swellings.
<i>Momordica charantia</i>	Kerela	Cucurbitaceae	Fruit, leaf	Fruits and leaves boiled, and juice is taken in diabetes and high blood pressure.

<i>Moringa oleifera</i>	Shajina	Moringaceae	Bark	Bark is useful in Diabetes; bark paste is used in rheumatic pain.
<i>Mucuna pruriens</i>	Bandor keku	Fabaceae	Root	Root is used in female reproductive problems, enhance male fertility.
<i>Nelumbo nucifera</i>	Podum	Nymphaeaceae	Carpel	Prevents miscarriage
<i>Nymphoides indica</i>	Tal japor	Menyanthaceae	Whole plant	Plant juice is used in jaundice, anaemia, asthma
<i>Phlogacanthus thrysiflorus</i>	Tita phul	Acanthaceae	Flower	Flower is useful in diabetes and useful in cough.
<i>Rosa centifolia</i>	Gulap	Rosaceae	Flower	Powder prepared from dried petals is useful in wound healing, rose extract is useful in eye problem.
<i>Spondias pinnata</i>	Amora	Anacardiaceae	Bark	Bark is used in dysentery, diarrhoea, menstrual disorders, arthritis. The fruit is used as an astringent, blood purifier.
<i>Swertia chirayita</i>	Chirata	Gentianaceae	Root	Prevents abortion
<i>Terminalia arjuna</i>	Arjun	Combretaceae	Bark	Bark juice is beneficial in heart diseases and diabetes.
<i>Trigonella foenum-gracium</i>	Mithi guti	Leguminaceae	Seed	Seed powder is beneficial in diabetes and helps in reducing uterine infections.
<i>Zingiber officinale</i>	Ada	Zingiberaceae	Rhizome	Rhizome is taken with salt to get relieve from cold, cough and sore throat

DISCUSSION

This primary information is important in the view that this forms the basis for the pharmacological research which may lead to drug discovery. It is observed that popularity of herbal medicines is gradually increasing among the people of Sorbhog area of Barpeta district. Some more studies on ethnomedicine used by the locals in various areas of Barpeta district will bring new information on ethnomedicine used to cure various ailments.

In the present study it was found that in the herbal remedy leaf is the most used part for the preparation followed by Fruit, Bark, Root, Flower, Rhizome, Whole plant, Seed, Bulb, Corms and runners and Carpel. Documenting the indigenous knowledge through ethnobotanical studies is important for both conservation and utilization of biological resources. Today there is an urgent need of such ethnobotanical studies in order to preserve the traditional knowledge of our fore fathers otherwise this treasure of knowledge will be lost forever. The ethnobotanical study in Sorbhog area was not reported earlier and the present study may prove beneficial for further ethnobotanical researches. It is high time to document, traditional knowledge about medicinal plants. Documentation of medicinal plants is necessary for the development of Indian system of medicine and homeopathy drugs.

CONCLUSION

Medicinal plants are always a better option than the chemical based medicines. So it is high time for us to study the unexplored biodiversity especially in north eastern India. Proper identification and preservation of this huge biodiversity is very important.

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