



### ETHNO MEDICINAL STUDY OF THREATENED PLANTS OF SONITPUR DISTRICT IN ASSAM, NORTH EAST INDIA

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#### ABSTRACT

Assam is endowed with a rich wealth of medicinal plants. It has the richest reservoir of plant diversity of India and is one of the hot diversity spots of the world supporting about 50% of India's biodiversity. Traditional medical practice has been recognized by the World health Organization (WHO) as a building block of primary healthcare. Assam has a rich traditional knowledge of folk medicinal practices. But rapid fragmentation of natural habitats and unrestricted exploitation coupled with limited cultivation and insufficient attempts for its replacement has decreased this knowledge day by day. As a result, this wild stock of the medicinal plant species has been markedly depleted with increasing the risk of losing their genetic diversity and the medicinal quality of these plants remains unknown.

Many species are extinct or on the verge of extinction before they are known for their scientific uses. In order to categorize and update the list of threatened species, the International Union for Conservation of Nature and Natural Resources (IUCN) has recognized the categories on the basis of geographical range, populations and fragmentation of populations.

The present study was carried out in Sonitpur district of Assam for the documentation of ethnomedicinal importance of such threatened plants species.

**Key words:** Ethnomedicinal, Threatened, Conservation

#### INTRODUCTION

The North Eastern region of India comprising of seven states namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Sikkim, is one of the richest reservoirs of different underutilized plants species. Assam is a region of many culture and traditions, races, an ethnic tapestry of many hues and shades. The folk culture is still vital in this region<sup>1</sup>. Most tribal communities still largely depend on their traditional system of medicine. Because of their scattered and far flung settlements, and problems arising due to transportation and communication, traditional medicine has remained as the most affordable and easily accessible source of treatment. Earlier, medicinal plants were obtained from the forests. At that time, they were in abundance. But now, the situation has reversed due to deforestation, uprooting of plants for fulfilling the requirements and the craze for herbal globalization. So the medicinal plants have become threatened with the increased risk of losing genetic diversity<sup>2, 3</sup>. Therefore, extinction of each endangered species could result in eradicating knowledge regarding century's old traditional methods of

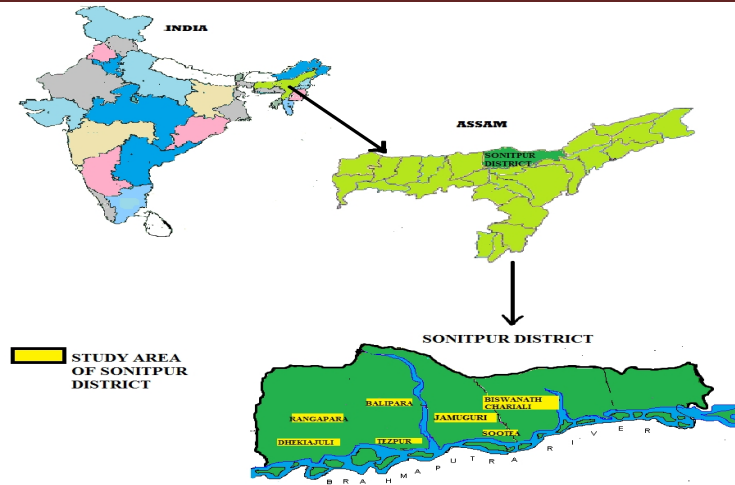
curing disease from that particular plant species. Today there is a realization to preserve the enormous wisdom, traditional knowledge and also the cultures associated with them. Not only the flora and fauna have been protected but also the knowledge data base is often treasured in the memories of traditional healers.

#### MATERIALS AND METHODS

##### STUDY AREA

Assam is a state in North Eastern region of the country, covering a total geographical area of 78,520 sq km with a population of 22.2 million. The state comprises of swamps, flood prone lowland, low medium agriculture land, flat and undulated uplands and highland consisting of hillocks and hills of gentle as well as step slopes. The state is dominated by two river plains - the Brahmaputra plains (56,480 sq. kms) drained by the river Brahmaputra and its 43 tributaries and the Barak plains (6962 sqkms) drained by the river Barak and its tributaries<sup>4</sup>. There are 23 districts, but the present study was carried out in Sontipur district of Assam.

DETAILS OF THE DISTRICTS WHERE STUDY WAS CARRIED OUT					
DISTICT	LOCATION	TOTAL AREA	TOTAL POPULATION	RAINFALL (average)	TEMPERATURE
SONITPUR	26°30' N to 27°01' N latitude and 92°16' E to 93°43' E longitude.	5324 Sq km.	16,77,874(as per 2001 census)	1600-1800mm	Maximum is 32.0° C Minimum is 10° C



## METHODOLOGY

This study pertains to assess wild medicinal and threatened plants of Assam used for ethnomedicinal purpose. The study areas were surveyed randomly from May 2011 to July 2012. Interviews and detailed personal discussions were conducted with the traditional healers (Bej) and local people who have unique knowledge about the medicinal uses of plants. The discussions contain the details of the plants, parts used, medicinal uses, mode of preparation. Discussions generally contain about those plants which were rare and endangered i.e. threatened according to the Bej and the people. The collected plants were identified taxonomically using the Indian medicinal plant literature to ascertain the nomenclature<sup>5, 6, 7, 8, 9, 10, 11, and 12</sup>. The status of the ethnomedicinal plants was compared with Red Data Book and other literatures<sup>13, 14, 15</sup>

## RESULT

The present study records 17 species of ethno-medicinal plants representing 14 families. According to the traditional healers and local people, 31 plants used for ethnomedicinal preparation were threatened. But when the data's were compared with Red Data Book and other literatures only 17 of them were found to be threatened. The following is the list of such threatened medicinal plants found in the Assam along with their Local name(s), family, habitat, parts used and ethno-medicinal uses and status.

### *Artocarpus lakoocha*

**Family:** Moraceae

**Local name:** Bohot

**Habit:** Tree

**Parts used:** Leaves, Barks, Fruits

**Ethnomedicinal uses:** It is used for treating piles, diarrhea and malaria, stomach problem, fever.

**Status:** Endangered

### *Homalomena aromatica* (Roxb.) Schott

**Family:** Araceae

**Local name:** Gondh-chana kachu

**Habit:** Creeper with aromatic rhizome

**Parts used:** Young leaves and rhizome

**Ethnomedicinal uses:** It is used for treating stomach problem, jaundice and diarrhea. Rhizome serves as good source of nutrition.

**Status:** Endangered

### *Oroxylum indicum*

**Family:** Bignoniaceae

**Local name:** Bhatghila

**Habit:** Tree

**Parts used:** Seeds and Leaves

**Ethnomedicinal uses:** It is used for treating cancer, intestinal worms, pain, and wounds.

**Status:** Endangered

### *Acorus calamus* L

**Family:** Araceae

**Local name:** Boch

**Habit:** Herb

**Parts used:** Rhizome

**Ethnomedicinal uses:** It is used for treating indigestion, diarrhea, tuberculosis, cough and cold.

**Status:** Vulnerable

### *Rauvolfia serpentina* (L.)

**Family:** Apocynaceae

**Local name:** Arachoritita

**Habit:** Herb

**Parts used:** Leaves, Flowers and Roots

**Ethnomedicinal uses:** It is used for treating high blood pressure, malaria and also as antidote against snake bite.

**Status:** Endangered

### *Hedychium spicatum*

**Family:** Zingiberaceae

**Local name:** Katuri

**Habit:** Herb

**Parts used:** Leaves

**Ethnomedicinal uses:** It is used for treating burns, cuts and wounds

**Status:** Rare

### *Gynocordia ordata*

**Family:** Flacourtiaceae

**Local name:** Chaulmugra

**Habit:** Tree

**Parts used:** Leaves

**Ethnomedicinal uses:** It is used for treating diarrhea and dysentery.

**Status:** Vulnerable

***Piper lognum***

**Family:** Piperaceae

**Local name:** Pipoli

**Habit:** Climber

**Parts used:** Fruits

**Ethnomedicinal uses:** It is used for treating pimples, asthma, cough and cold.

**Status:** Endangered

***Citrus assamensis***

**Family:** Rutaceae

**Local name:** Bor nemu

**Habit:** Small tree

**Parts used:** Leaves, Flowers and Fruits

**Ethnomedicinal uses:** It is used for treating dysentery, indigestion, pimples and intestinal worms.

**Status:** Endemic

***Mesua assami***

**Family:** calusiaceae

**Local name:** Nahar

**Habit:** Tree

**Parts used:** Flowers and Barks

**Ethnomedicinal uses:** It is used for treating wounds, rheumatism, and leprosy.

**Status:** Endemic

***Garcinia penduculata***

**Family:** Guttiferae

**Local name:** Bor-thekeera

**Habit:** Tree

**Parts used:** Fruits

**Mode of preparations:** Fruit is eaten raw for stomach infection and diarrhea and dried cut pieces of fruits are used for treating intestinal worms.

**Status:** Endangered.

***Calamus floribundus***

**Family:** Arecaaceae

**Local name:** Lejai bet

**Habit:** Palm tree

**Parts used:** Shoot and Root

**Ethnomedicinal uses:** It is used for treating pain, cut wounds and insect and dog bite.

**Status:** Endangered

***Acalypha australis***

**Family:** Euphorbiaceae

**Local name:** Kachugaon

**Habit:** herb

**Parts used:** Leaves

**Ethnomedicinal uses:** It is used for treating wounds, rheumatism, and leprosy .

**Status:** Rare

***Livistona jenkinsiana***

**Family:** Arecaaceae

**Local name:** Tokou

**Habit:** Tree

**Parts used:** Fruits and leaves

**Ethnomedicinal uses:** It is used for treating fever and malaria.

**Status:** Endangered

***Dioscorea deltoidea***

**Family:** Dioscoreaceae

**Local name:** Kathalu

**Habit:** Climber

**Parts used:** Leaves and underground portion

**Ethnomedicinal uses:** It is used for treating low blood pressure, rheumatism and also used as birth control.

**Status:** Vulnerable

***Tinspora cardifolia***

**Family:** Menispermaceae

**Local name:** Siddhilata

**Habit:** Climber

**Parts used:** Leaves, Stems and Roots

**Ethnomedicinal uses:** It is used for treating wounds, fever, cough, urinary troubles, anemia, jaundice and indigestion

**Status:** Rare

***Rhynchostylis retusa***

**Family:** Orchidaceae

**Local name:** Kopou phool

**Habit:** Epiphyte

**Parts used:** Leaves, Stems and Roots

**Ethnomedicinal uses:** It is used for treating wounds, rheumatism and dysentery.

**Status:** Vulnearable

***Hedyotis scandens Roxb***

**Family:**Rubiaceae

**Local name:** Bhedelilota

**Habit:** Climber

**Parts used:** Leaves and Roots

**Ethnomedicinal uses:** It is used for treating pain, malaria and fever.

**Status:** Vulnearable

**DISCUSSION**

The plant diversity of North East India is facing various threats for its very survival. Even before we fully describe the species richness, we are loosing many species, due to the alarming rate of extinction. It is hard to develop a measure of extinction rates of the entire flora and fauna due to the scant knowledge of the species pool before the impact.

Global concern about the loss of valuable genetic resources has stimulated many new programs for the conservation of plant genetic resources. Several State and Central government research organizations are engaged in research, inventory and conservation of threatened plants in the region. Though efforts have been made to assess and threat faced by many medicinal plant species, ecological surveys have to be intensified further and the list of species facing threat has to be compiled so as to devise a proper conservation strategy that encompasses all these species.

**CONCLUSION**

Extinction of some important plants not only leads to lost of biodiversity but also results in eradicating knowledge regarding century's old traditional methods of curing disease from those extinct species. Conservation of threatened medicinal plants needs urgent attention in order to conserve the traditional medicinal knowledge associated with it. Hence further studies are required to exploit the medicinal importance of these plants, which can serve as a potential source of discovery of newer and efficacious drugs<sup>16</sup>.

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