www.ThePharmaJournal.com

The Pharma Innovation

ISSN: 2277- 7695
TPI 2015; 4(2): 108-110

www.thepharmajournal.com
Received: 01-03-2015
Accepted: 15-03-2015

S.I. Bhuyan
Department of Botany, University of Science & Technology Meghalaya, 9th Mile, RiBhoi, Meghalaya-793101, India

B.N. Baruah.
Department of Botany, University of Science & Technology Meghalaya, 9th Mile, RiBhoi, Meghalaya-793101, India

Correspondence:
S.I. Bhuyan
Department of Botany, University of Science & Technology Meghalaya, 9th Mile, RiBhoi, Meghalaya-793101, India

Medicinal plants used for the treatment of respiratory disorders: A study in Bongaigaon, North Eastern Himalayan Sub-region of India

S.I. Bhuyan, B.N. Baruah

Abstract
Present study was conducted in some selected areas of Bongaigaon district, Assam located between the latitudes 89º to 90º96' E, and the longitudes of 26º28' North to 26º54' N. Extensive fieldwork is carried out in the selected areas during 2013-14. Five villages from the Boitamary block of the district were selected for the field survey. Participation rural appraisal (PRA) methods and tools were used for interacting with the local people. Elder people both male and female, traditional local doctors, farmers, plants collectors were interacted with a proper questionnaire. The study comprises 14 species of ethno medicinal plants belonging to 11 families. The most dominant family recorded as a whole is Verbenaceae (3 species); followed by Euphorbiacea (2 species). Medicinal plants are being harvested unsustainably for which they are becoming rare and some are at the margin of extinction. Therefore, management of these medicinally important plants should be viewed seriously.

Keywords: Anthropogenic activities, Indigenous communities, Natural resources, Northeast India.

1. Introduction
Medicinal plants have been used since prehistoric period for the cure of various diseases. Human knowledge of the medicinal value of plants date back perhaps for more than five thousand years [1]. Different plants species and their uses as medicine are greatly well-known to indigenous communities of different parts of the world. Local people are expert for mounting inventive practices and products from their surroundings. The need for natural medicine is now increasing day by day; about 64% of the total global population depends on traditional medicine in the management of various diseases and trauma [2].
Indigenous people lives in harmony with the natural resources and maintain a sustainable way to protect their environment. Its practices are based on hundreds of years of their own observations, experience and belief. Numerous wild and cultivated plants play a very important and vital role among the cultures and their interrelationships have evolved over generations. A great mass of popular remedies for many diseases which are in common use throughout the world even today are gifted by plants. Over the past decade, herbal medicines have become a topic of global importance in all the corners of the world.
Northeast India is harbours a very rich and diverse flora and fauna with great topographic features and climatic diversity. However, due to certain anthropogenic activities (*i.e.*, loss of habitat, deforestation, forest fragmentation, construction of roads etc.) also affect this medicinal plant diversity. Modernization in these regions also has made most of the primitive societies to break away from their cultural and traditional belief and practices. This slow divorcement from culture and tradition has brought about a disintegration of knowledge and practices of plants in their daily life. An attempt has been made to document and conserve this vanishing knowledge of medicinal properties of the plants to cure respiratory problems.

2. Material and methods
2.1 Study site
Present study was conducted in some selected areas of Bongaigaon district, Assam. The district lies on the north western part of the state of Assam bounded by the Barpeta district on the east, the Goalpara on the south, the Kokrajhar district of Assam on the north and Dhubri on the west. It is situated approximately between the latitudes 89º to 90º96' E, and the longitudes of 26º28' North to 26º54' N. The population is inhabited by the **Assamese Koch Rajbongshis, Assamese caste Hindus** and **Scheduled castes, Muslims**, Garo, Rabha, Bodos etc. and *district* has a *population* of 1,09,810. The district is influenced by the South-West monsoon

And rainfall is assured during summer, but differs greatly in intensity from area to area within the district. The average rainfall ranges from 250 cm to 350 cm per annum.

2.2 Data collection and sampling techniques

The extensive fieldwork is carried out in the selected areas during 2013-14. 10 villages from the study area were under taken for the field survey. Participation rural appraisal (PRA) methods and tools were used for interacting with them. By direct contacts with the villagers information was collected from all the study sites. Information was extracted through key informant interviews and focus group discussions. To find out the resources used by the local people of the area, sufficient numbers of people from different communities were interviewed. Elder people both male and female, traditional local doctors, plants collectors were interacted. A semi-structured questionnaire was used for the interviews. Most of the selected informants belong to those families who have a strong connection with traditional knowledge of medicinal plants. Information on plant parts used, purpose of use, formulations, processing, dosages and side-effects, if any and storage were collected through proper questionnaires. The collected information was evaluated for different genera and species of the medicinal plants in order to understand the pattern in medicinal plant uses and occurrences. With the help of information, field visits and collection of ethno-medicinal plants were done in all seasons. Plants were collected for herbarium records. The collected plants were identified and confirmed by consulting the FFM vol. 1-2: (1985 & 1987); FM vol. 1: (2000); already identified herbarium specimens from BSI herbarium, Eastern Circle, Shillong and Department of Botany, USTM. The identified voucher specimens were deposited at the Department of Botany, University of Science and Technology, Meghalaya.

3. Results and discussion

The result of the survey is presented in Table 1, which represent the list of medicinal plants used to cure the respiratory diseases. Plant species are arranged in alphabetical order, followed by its local name, family, habit, parts used and mode of use. The study comprises 14 species of ethno medicinal plants belonging to 11 families.

The most dominant family recorded as a whole is Verbenaceae (3 species); followed by Euphorbiacea (2 species). The rest of the families have only one plant species recorded from the study sites. (Fig 2).

Shrubs were found to be the most used plants, which used in preparing traditional medicines i.e. 6 plant species, followed by herbs i.e. 5 plant species, tree (2 species) (Fig 3). Different parts of medicinal plants were used as medicine by the local traditional healers. These different plant parts are used in the form of fresh juice, latex, powder, paste, decoction, direct use for the cure of illness. Among the different plant parts, the leaves were most frequently used for the treatment of diseases followed by Root, Stem, Whole plant, fruit, and tuber (Fig 4).

During the study it was found that, the elder persons (above 50 years of age) of the family possess more knowledge regarding medicinal plants use and identification of than that of younger generations. Data also showed that, females knew more about the usage of

Table 1: list of the medicinal plants used for the treatment of respiratory problems

Sl. no	Name of the plants	Common name	Parts used	Family	Habit
2	*Aloe vera (L.) Burm f.*	Ghrta kumari	Leaf	Asphodelaceae	S
12	*Centella asiatica (L.) Urban*	Bor manemuni	Leaf, stem	Apiaceae	H
4	*Clerodendrum serratum (L.) Moon*	Nangal bhanga	Root	Verbenaceae	S
9	*Clerodendrum viscosum Vent.*	Vate tita	Leaf	Verbinaceae	S
13	*Datura metel L.*	Datura	Dry stem	Solanaceae	S
8	*Ecbolium viride (Forsk.) Alston.*	Nilkantha tita (Ass)	Root	Acanthaceae	S
5	*Euphorbia hirta L.*	Dudhi, Gakhiroti-bon	Entire Plant	Euphorbiaceae	H
6	*Gmelina arborea Roxb*	Shivan	Leaf	. Verbenaceae	T
1	*Mangifera indica L*	Mango	Leaf	Anacardiaceae	T
11	*Piper nigrum L.*	Jati jaluk	Fruit	Piperaceae	C
3	*Raphanus sativus L.*	Mula	Tuber	Brassicaceae	H
7	*Riccinus communis L.*		Root	Euphorbiaceae	S/T
14	*Spilanthes paniculata Wall. Ex DC.*	Parboti sak	Young stem	Asteraceae	H
10	*Zingiber officinale Rosc.*	Moran ada	Underground stem	Zingiberaceae	H

Fig 1: Map of the study area, Bongaigaon district.

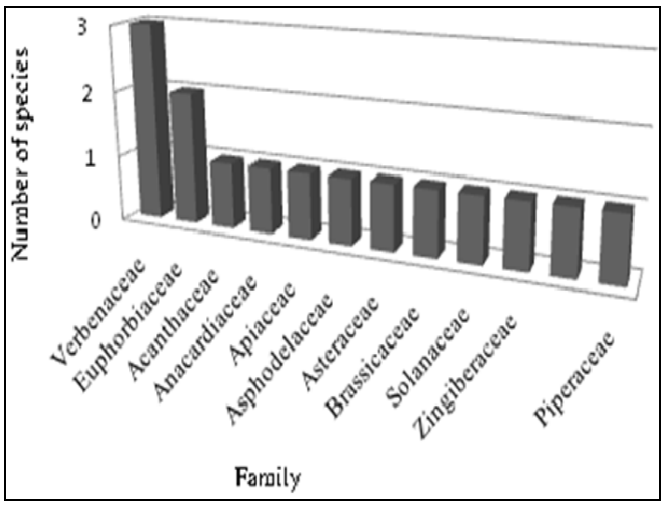

Fig 2: Number of plant species per family

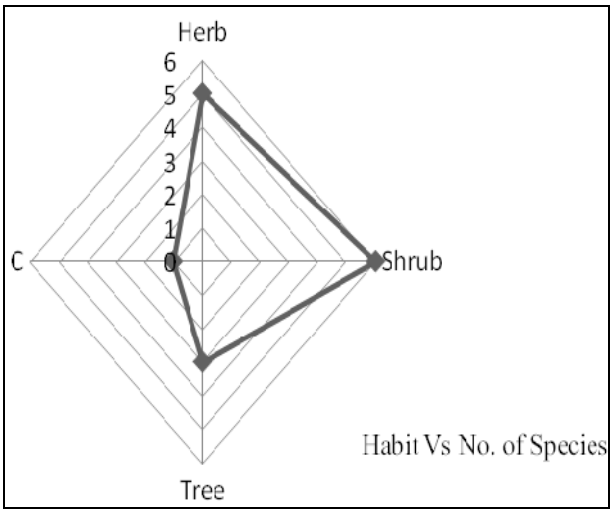

Fig 3: Habit of the plants species used as anti-respiratory disease

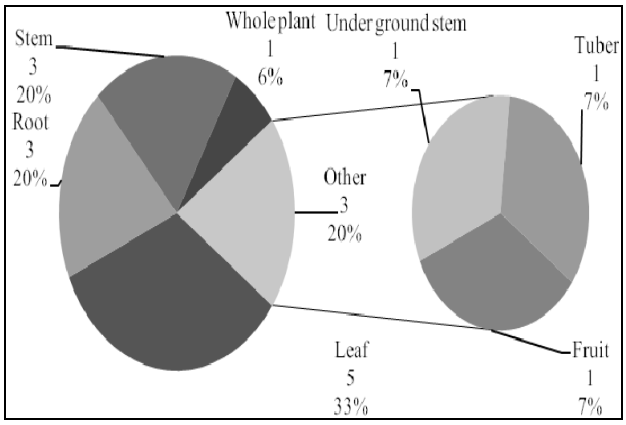

Fig 4: Plant parts used for the treatment of bronchitis disease by the local people

Medicinal plants than that of male. Most of the plant parts used for curing ailments is gathered from forest, but some rural people are keen to raise certain species with medicinal properties, particularly *Mangifera indica*, *Gmelina arborea Roxb. Aloe vera* (L.) Burm f., *Piper nigrum* L. etc. However, these medicinal plants are being harvested unsustainably for which they are becoming rare and some are at the margin of extinction. Therefore, management of these medicinally important plants should be viewed seriously. There is a need for in situ and ex situ conservation of medicinal and aromatic plants resources.

Maintenance of the plant resources on the ground level is required for the benefit of human beings and sustainable development of environment. Awareness at the grass root level and enhancement of community based conservation system is very essential for the protection of plant resources. Cultivation of these plants species in home garden, agroforestry will help to conserve the population of the threatened species. Large scale cultivation of economic and medicinal plant species by local communities should be encouraged to minimize the pressure on natural habitats. Their traditional knowledge with scientific and technical research for sustainable utilization can also help in conservation of plant diversity. Traditional knowledge of the local people on the plant resources needs to be documented and conserve properly for better utilization of the resources.

References

1. Sofowora, Abayomi. Medicinal plants and traditional medicine in Africa. John Wiley and sons LTD, 1982.
2. Cotton CM. Ethnobotany: Principle and Application. John Wiley and Sons Ltd., Chichester, England, 1996.