

# Depleting Population of Herbs and Creepers Used as Traditional Medicine by the Assamese Community of Lakhimpur District, Assam

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## ABSTRACT

A survey of some wild herbs and creepers, used as traditional medicine by the greater Assamese community of Lakhimpur district, was conducted during 2008- 2009. A total of six plant species were identified and reported by the native people to be diminishing in their population. Continuous deforestation occurring as a result of destruction of the forest areas, erosion and floods are the prime factors for the diminishing population. A need for conservation and systematic exploration in a planned manner is an immediate necessity.

## INTRODUCTION

Plants and plant parts as traditional medicine and food have been attaining supreme popularity since ancient times and from the very beginning of human civilization. Primitive man was a gatherer, hunter and nomadic. He used to spend the entire day in search of plant materials as source of food, shelter and remedies of certain diseases and injuries. Gradually man felt the need of permanent preservation of some plant resources by cultivation and artificial growing. In fact, plants have influenced human civilization to a great extent since their importance was realized by the native people.

The world vegetation cover under natural forests has been depleting fast and a significant portion of such areas is being converted to man-made timber yielding plantation forests (Pandey & Shukla 1999, Pitchairamu & Muthuchellan 2007) to meet the growing need of the ever-increasing human population. We now largely depend on managed forests for wild plant resources, as we do not have much natural forests left. The current pressure on the forest communities for large scale collection of fuel wood, timber as well as practices of grazing has alarmingly altered the habitats of many important plant species. A thorough understanding of the dynamics of the forests and planned approach to management only can help maintenance of species composition, and conservation of plant diversity of a region (Singh 2002).

The north-eastern regions of India, namely Assam, Arunachal Pradesh, Meghalaya, Mijoram, Manipur, Nagaland and Tripura are predominantly inhabited by a variety of ethnic tribes. Assam is not an exception in this regard. Different ethnic groups of Assam have a tremendous scope for ethnobotanic study as they differ widely in their socio-cultural status. The people of the different tribes of Assam have exploited a number of medicinal plants for effective curing of various ailments (Borthakur 1976, Jain 1979, Sarmah & Boissya 2000). The district of Lakhimpur, Assam is a region of rich biodiversity. Because of its location at the foothills of Arunachal Pradesh, an environment conducive

for a significant floristic diversity prevails in this region. However, the different habitats and ecosystem are being threatened due to increasing indiscriminate exploitation of the resources available in the region. Flood and erosion, besides ruthless destruction of forest areas, are the prime factors of depleting natural resources. However, in spite of these factors which result in depleting plant diversity, quite a number of wild flora still prevail in natural habitat in the urban as well as rural areas of the district. The present study aims at enumeration of some very important wild herbs and creepers frequently used by the Assamese community for food and medicine of Lakhimpur, Assam.

## MATERIALS AND METHODS

A survey of some wild herbs and creepers, used as traditional medicine by the greater Assamese community of Lakhimpur district, was conducted during 2008- 2009. Frequent field trips were made to the different villages situated in the urban as well as rural areas, besides the forests to locate and identify the plants in natural habitat.

The folklore oral health care information were collected as suggested by Schultes (1963) and Jain (1989) on the basis of structured questionnaire with the growers, the head of the village referred to as 'Gaonbura', other senior persons of the locality having wide knowledge of the plant species and their traditional usage, through personal observations and village medicine men commonly known as 'Bez'. The collected plant species were enumerated in alphabetical sequence, then with family, local name, parts of the plant used and their ethno-botanic potentiality. The works of Kanjilal et al. (1934-40), Chopra et al. (1969), Kaushik & Dhiman (2000), Sarma (2002) and Dutta (2005) were referred during taxonomic identification and medicinal importance. Voucher specimens were collected, identified and preserved as herbarium specimens in the Department of Botany, North Lakhimpur College for further investigation in future. Fig. 1 shows photographs of these plants. The abbreviations used are F = Family, Eng = English name, Assm = Assamese name.

## HERBS AND CREEPERS OF MEDICINAL IMPORTANCE

\*1. *Abrus precatorius* Linn. (F-Fabaceae); Eng-Crab's eye; Assm-Latumoni

**Medicinal use:** Root extract of the plant is given in the treatment of diarrhoea, dysentery, flatulence of children and vomiting, twice or thrice daily for 3 days. 3 seeds of the plant, grinded with a fruit of *Dillenia indica*, 2cm petiole of *Livistonia jenkinsiana* (tokow), 3 tender shoots each of *Psidium guyava*, (modhuri aam), *Croton coudatus*, (lotamahudi), *Rubrus rogosus* (jetulipoka). Grinded mixture is boiled with 100mL of water and then filtered. 20 mL of the filtrate is given in the treatment of tonsillitis, once daily for three days.

2. *Acorus calamus* (F-Aracaceae); Eng-Sweet flag; Assm-Bosh

**Medicinal use:** Extract of 50 g rhizome of the plant mixed with 50 g stem bark extract of *Acacia farnesiana* and a few grinded cloves of *Allium sativum* bulb is given in the treatment of disuria.

Equal amount of rhizome of extract of the plant, root extract of *Houtuynia cordata* and extract of *Allium sativum* bulb is given as remedy for dysmenorrhoea.

3. *Adhatoda vesica* Nees. (F-Acanthaceae); Eng-Grey basak; Assm-Bahok

**Medicinal Use:** A small evergreen shrub. Juice of the leaf is a good medicine during the treatment of cold, cough, bronchitis, asthma. Leaves boiled with sawdust is a source of yellow dye. Charcoal is a source of gun powder.

\*4. *Andrographis paniculata* Nees. (F-Acanthaceae); Eng-The Creat; Assm-Mahatita

**Medicinal use:** About 10mL of leaf decoction is given in diarrhoea once daily until cure. 20mL of root decoction is given in malaria, twice or thrice daily for a week. About 10mL of leaf decoction is given in fever and cough twice daily for three days.

\*5. *Ardisia humilis* Vahl. (F-Myrsinaceae); Eng-Ardisia; Assm-Tolothapoka

**Medicinal use:** 10mL of bark extract is used orally in diarrhoea once daily for three days. Paste is applied locally to cure ulcer.

6. *Asparagus racemosus* Willd. (F-Liliaceae); Eng-Asparagus; Assm-Satmul

**Medicinal use:** Decoction of root is used as nervous tonic regularly for a week in empty stomach. Decoction of root is used as a medicine for the treatment of rheumatic pain regularly until it is cured.

7. *Bacopa monnieri* Pennel. (F-Scrophulariaceae); Eng- Water hyssop, Brahmi; Assm-Brahmi

**Medicinal use:** The whole plant extract is used by traditional medicineman with *Centella asiatica* and *Evolvulus alsinoides* considered as nerve tonic, memory stimulant and also relieve from mental anguish, stress and strain, an ayurvedic tonic 'Brahmighrita' is prepared from this plant.

8. *Cissus quadrangularis* Linn. (F-Vitaceae); Eng-Medica gum; Assm-Harjora

**Medicinal use:** Perennial fleshy medicinal creeper. Stem paste is applied in fracture or any other bone-injury as immediate first-aid by native Assamese people.

9. *Cassia alata* Linn. (F-Caesalpiniaceae); Eng-Ringworm senna; Assm-Khorpat

**Medicinal use:** A small bushy shrub with bright yellow flowers. Leaf paste is popularly applied in ringworms, scabies for immediate relief. Extract of boiled tender leaves is used as laxative. Flowers are eaten raw to relieve from stomach disorder.

\*10. *Caesalpinia bonducelle* (L.) Flem (F-Caesalpiniaceae); Eng-Nichernut; Assm-Letaguti

**Medicinal use:** One fruit of the plant with three young shoots of *Croton joufra* (mahudi) and a small piece of the stem bark, 5 leaves of *Citrus acida*, three outgrowth of the root of *Kyllingia brevifolia*, and 3-7 seeds of *Piper nigrum* is made into a paste. A pinch of salt and 25-50 mL of water is added, warmed and given to the pneumonia patient in empty stomach for three days.

Three tender shoots grinded with about 15g rhizome of *Circuma cordaria* (ekangi) and leaves of *Ocimum sanctum*. A plant of *Hydroctyle javanica*, three black pepper is grinded and mixed with 20mL water. The two mixtures are mixed and filtered. The filtrate is given to gastric patient thrice daily for about three days.

\*11. *Cissumpelos pareira* Linn. (F-Menispermaceae); Eng-Velvet leaf plant; Assm- Tubukilota, Gorila

**Medicinal use:** Annual creeping herb of great medicinal value. Root extract is important during the treatment of jaundice and urinary trouble. Also known as housewife's creeper because of wide use in gynecological disorders.

12. *Clerodendron glandulosa* Linn. (F-Verbenaceae); Eng-Kassod; Assm-Nefafu

**Medicinal use:** A small semiwoody shrub available in all districts of Assam. The young leaves are eaten raw or boiled and widely applied during control of high blood pressure.

13. *Colocasia macrorrhiza* Schott. (F-Araceae); Eng-Arum, Giant Taro; Assm-Bor Kachu

**Medicinal use:** Stem juice relieves scorpion and nettle sting. Rhizome is mild laxative. The traditional healers are using the dried corms for the chronic body pains and arthritis.

**14. *Houttuynia cordata* Thunb** (F-Piperaceae); Eng-Chameleon plant; Assm-Musandari

**Medicinal use:** A small perennial herb with creeping root stock. The fish smelled boiled leaf juice is widely used in the treatment of indigestion, diarrhoea and dysentery.

**15. *Ipomoea aquatica* Forsk.** (F-Convolvulaceae); Eng-Swamp cabbage; Assm-Kolmou

**Medicinal use:** An extensively growing soft creeper generally grows on swamp places. Juice is given as remedy for opium poisoning, also during the treatment of jaundice and urinary troubles.

**\*16. *Lasia spinosa* (L.) Thw.** (F-Araceae); Eng- Spiny arum; Assm-Chengmora

**Medicinal use:** A perennial herbaceous plant occurring in shady damp places with radical leaves arising from the corm. Peeled leaf stalk and young leaves are boiled and eaten to relieve from body ache and constipacy.

**17. *Leonarus sibiricus* Linn.** (F-Lamiaceae); Eng-Siberian mother wort; Assm-Ronga durun

**Medicinal use:** An erect annual small herbaceous plant with violet flowers. Seeds contain essential oil leonarin. Leaf extract is used in nasal bleeding.

**18. *Paedaria foetida* Linn.** (F-Rubiaceae); Eng-Pedera; Assm-Bhebelilota

**Medicinal use:** A small soft creeping annual climber with foetid smell. The whole plant is treated as important medicinal plant in Assam for stomach troubles.

**19. *Phlocanthus thyriflorus* (Roxb.)** (F-Acanthaceae); Eng-Red basak; Assm-Titabahok

**Medicinal use:** A small evergreen shrub. Leaves and red flowers are bitter, used as vegetable and bitter tonic for worm trouble.

**20. *Peperomia pelucida* Kunth** (F-Piperaceae); Eng-The parpata; Assm-Purnanowa (Salkumari)

**Medicinal use:** A small soft herbaceous plant with heart shaped leaves and flowers in spike inflorescence. The whole plant is used as medicine from primitive times. A common remedy for diabetic patients.

**21. *Polygonum perfoliatum* L.** (F-Polygonaceae); Eng-Tearthumb; Assm-Noltenga

**Medicinal use:** A perennial creeper available in the forest areas. The leaves are used as sour curry in Assamese diet. Leaf extract is used during treatment of diarrhoea and indigestion.

**22. *Smilax macrophylla* Roxb.** (F-Liliaceae); Eng-Sarsaparilla; Assm-Tikonibaruah, Kumarica

**Medicinal use:** A perennial climber available in thick forests. The root extract is widely used as paste in rheumatic pain and backache.

**23. *Stellaria media* Linn.** (F-Caryophyllaceae); Eng-Chickweed; Ass-Morolia sak

**Medicinal use:** A very soft annual herb growing in damp places. The whole plant is used during treatment of worms and dysentery.

**\*24. *Vitex negundo* Linn.** (F-Verbenaceae); Eng-Indian privet; Assm-Posotia

**Medicinal use:** Smoke of dried leaf is given to relief from headache. Leaf juice is used to wash foetid ulcer. Tender leaf is boiled and eaten to improve eye-sight and enhancing memory.

\* Reported to be depleting in population in the locality.



*Cissampelos pareira* Linn



*Polygonum perfoliatum* L.



*Andrographis paniculata* Nees



*Abrus precatorius* Linn



*Vitex negundo* Linn.



*Adhatoda vesica* Nees



*Paedaria foetida* Linn



*Phlogocanthus thyrsoifloras*(Roxb)



*Smilax macrophylla* Roxb



*Lasia spinosa* (L) Thw



*Peperomia pelucida* Kunth



*Cassia alata* Linn.

Fig. 1: Identification of some local herbs and climbers.

## RESULTS AND DISCUSSION

The ethnomedicobotanical survey of the area revealed that the people of Lakhimpur district, Assam still utilize to a great extent the locally available plants that are traditionally used as medicine during the treatment of common ailments. However, as the society is in progressive exposure to modernization, their knowledge of traditional uses of plants may be lost in due course of time. So, it is important to study and record the uses of plants by the tribes for future generation. Such study may also provide some information to phytochemists and pharmacologists in screening of plant species and in rapid assessing of phyto-constituents for the treatment of diseases.

A significant finding in the present survey is that the population of seven species, namely, *Abrus precatorius*, *Andrographis paniculata*, *Ardisia humilis*, *Caesalpinia bonducelle*, *Cissampelos pareira*, *Lasia spinosa* and *Polygonum perfoliatum* of the 24 herbs and creepers studied, is gradually depleting in their population. This has been reported by the local people who are in constant touch of these plants for using them as medicines and have assumed that the diminishing population may be due to extensive destruction of forest and grazing areas for human need. The frequent flood situation in the district leading to erosion of some heavily floristic areas are also regarded as prominent factors threatening the survival of these most important medicinal plants. There is need for immediate measures for conservation and safety of these important plant species ethno-medically related to the society.

Ever increasing human population, grazing and cultivation exert enormous stress on the vegetation and result in habitat destruction of a region (Bhatt et al. 2001). A large fraction of population of Lakhimpur district depends on agriculture and agro forestry. Due to ignorance and weak communication, most people, especially younger generation, forgot indigenous knowledge of plants. There is a need for careful conservation of the plant resources of the region. Otherwise many wild species may become extinct. The indigenous knowledge system, traditional technologies and resource management practices of different ethnic communities of north-eastern India provide ample opportunities for agricultural diversification as well as intensification (Borthakur & Goswami 1995). The present study will throw light on wild plants used as components of medicinal and phytochemical sectors and contribute to their management, conservation and development. The sustainable harvesting of plants, having both medicinal and economic values, has a great potential. In fact, there is no local awareness about proper collection of various species. Thus, there is a need to create awareness of the importance of these plants among local people and to provide them guidance and training in collection and processing to enhance their income. The recipes along with medicinal values presented in the paper are a part of the empiric knowledge confined to the Assamese people of the study area. However, the authors feel further intensive studies in this sphere may provide some useful information to phyto-chemists, pharmacologists, etc. for screening of individual species and rapid assessing of some useful drugs. Again, the medicinal plant species used traditionally by the villagers should be properly tested to confirm their safety and efficacy (Borthakur 1976). Big attention should be paid to proper exploitation and utilization of the herbal plant species along with their scientific conservation, preservation, propagation and, to a certain extent, their domestication.

From the present study, it appears that though Lakhimpur district of Assam is very rich in flora of enormous diversity, a large number of species still remain unexplored scientifically. Therefore, proper attention to the use of the plants as reported in the paper, as well as their conservation, may lead to the exploration and invention of new drugs and vegetables in the near future.

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