



A CASE STUDY

Certain ethno-medicinal plants of Sivasagar district, Assam and their uses

MANJIT GOGOI AND P. JIJI

ABSTRACT

Ethno-medicinal plants play an important role in day to day life of rural people. Now-a-days Ayurveda gets more importance than allopathic medicines. Local inhabitants of Sivasagar district also give more attention in application of such medicinal plant resources which are available in different reserve forests, the district is one of the biodiversity rich hot spot of Assam. 11 per cent area of Sivasagar district is covered by reserve forests. During the study total 35 number of medicinal plant species were recorded with local name and uses. Moreover, it was informed that tribal and non-tribal peoples of the area maximum used plants belongs to family Zingiberaceae. Due to anthropogenic activities the forest is degrading slowly and a decline medicinal plant diversity. Therefore, conservation of this type of forests are essential for feature uses.

Key words : Medicinal plants, Anthropogenic activities, Conservation

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INTRODUCTION

Medicinal plants are of great importance to the health of individuals and communities. Many of these indigenous medicinal plants are used as spices and food plants. They are also sometimes added to foods meant for pregnant and nursing mothers for medicinal purposes (Okwu, 1999 and 2001). In India, almost 95 per cent of the prescriptions were plant based in the traditional systems of Unani,

MEMBERS OF THE RESEARCH FORUM

Address for correspondence :

MANJIT GOGOI, Department of Botany, Gargaon College, SIMALUGURI (ASSAM) INDIA

Coopted authors :

P. JIJI, Department of Botany, Gargaon College, SIMALUGURI (ASSAM) INDIA

Ayurveda, Homeopathy and Siddha According to world Health Organization (WHO), medicinal plants would be the best source to obtain variety of drugs. About 80 per cent of individuals from developed countries use traditional medicines and compounds derived from medicinal plants.

Sivasagar district of Assam comprises seven Reserve forests. Out of the seven reserve forest Abhaypur is rich in phytodiversity and covers a total area of 6,738 hectares. This reserve forest is situated in 26°7' /-27°2' North latitude and 94°8' -95°4' east longitude in the southern bank of river Brahmaputra in Upper Assam and an altitude of 105 m. Tropical monsoon climate with average rainfall of 2000-4000 mm and temperature 9°C-41°C. Abhaypur reserve forest situated in the transition zone between Assam, Nagaland and Assam, Arunachal

Pradesh. The soil deposited on east are usually rich in loams, free from lime, is acidic in reaction pH varied from 5.2-6.8, deposited from the Naga Hills. Number of ethnic people inhabits in this area viz., Tai Ahom, Tai Khamyang, Tai fake, Moran, Motok, Sonowal, Kachari, Mising, Naga, Tea garden tribes and Indian Nepalties. Agricultural practice and Tea gardens are common around areas. The people live near areas depends on these forest for their food and also medicines. Varieties of ethnomedicinal plants are available in these areas.

Ethno botany work had been conducted in North eastern India by several workers viz., Jain and Hajra (1976), Flora of Sivasagar district by Sharma (1978), recent works on North eastern India by Barua and Sarma (1984); Nath and Begum (1998), Dutta and Nath (1998), Agarwal and Borah (2001); Baishya and Bora (2002); Bora *et al.* (2003) Ethno medicinal importance of plant diversity by Gogoi and Islam (2006).

MATERIALS AND METHODS

An ethnobotanical survey was carried out during June-2011 to September- 2013 for collect the traditional information from the inhabitants of the Sivasagar district. Primary data were collected through field visit in different season of the year in different reserve forests and with direct interaction with the traditional healers and practitioners those people traditionally related with preparation of ethno medicine. 60 per cent of total population covered by Tai-Ahom people, 30 per cent Tea tribes and 10 per cent tribal and non-tribal people. Moreover, interact with age old people to collect the information regarding medicinal plants and their uses. During field visit important specimens were collected as per methods of (Jain and Rao, 1967) and prepare herbarium which are deposited in the departmental herbaria of Botany department of Gargaon College, Simaluguri, Sivasagar, Assam.

RESULTS AND DISCUSSION

A total of 35 aromatic medicinal plants identified during the survey, out of which 15 plants are belongs to Monocots in 7 families and 25 from dicots in 17 families. Maximum members of species are from Zingiberaceae family. During the survey, visit and interaction with traditional practitioners a total of 35 plants were identified

and collected. The 35 plants come under 24 families. A total of 20 plants identified are from dicotyledones in 17 families and 15 Monocotyledones in 7 families. Maximum member of plants are from Zingiberaceae family (7). From the list it was identified that *Acorus calamus* L., *Litsea cubeba* (Lour) Pers., *Vitex negundo* L., *Gloriosa superba* L., *Anisomales indica* L. Kuntz..s and *Michelia champaka* L. are coming under IUCN red list. The identified plants, their family, local name, uses and flowering season were enumerated below:

List of medicinal plants :

Botanical name : *Achasma loroglossum* (Gagnep) Larsen
 Family : Zingiberaceae
 Local name : Karphul
 Uses of the plant : Rhizome which are very aromatic, eaten fresh or with for Tooth and gum pain
 Habit and habitat : Herb, semi aquatic
 Flowering and fruiting period :

Botanical name : *Acorus calamus* L.
 Family : Araceae
 Local name : Boch
 Uses of the plant : The rhizome in cough, bronchitis gout, depression and other mental disorders, tumors and skin disease.
 Habit and habitat : Herb, semi aquatic
 Flowering and fruiting period : April, June.

Botanical name : *Aegle marmelos* (L.) correa
 Family : Rutaceae
 Local name : Bel
 Uses of the plant : Fresh root is crushed and the paste about 3g is taken once in empty stomach to cure menorrhoea.
 Habit and habitat : Tree, terrestrial.
 Flowering and fruiting period : April, July.

Botanical name : *Ageratum conyzoides*

- L.
 Family : Asteraceae
 Local name : Gondhuabon
 Uses of the plant : The juice is used in cut or injuries, it has healing properties.
 Habit and habitat : Herb, terrestrial.
 Flowering and fruiting period : Throughout the year.
- Botanical name : *Alpinia allughas* (Retz.) Rose.
 Family : Zingiberaceae.
 Local name : Tora
 Uses of the plant : Rhizome is used as medicine in rheumatism and fruit to cure nail infection.
 Habit and habitat : Herb, semi aquatic
 Flowering and fruiting period : May, October
- Botanical name : *Alpinia galanga* Willd
 Family : Zingiberaceae
 Local name : Tora Baghini
 Uses of the plant : Rhizome along with leaf of commiphora mukul is a cure upon inflammation of rheumatism, heumatoids, arthritis and pain is vertebral column, rhizome decoction with 10 ml of Ricinus oil apply on backache.
 Habit and habitat : Herb, semi aquatic
 Flowering and fruiting period : May, October
- Botanical name : *Alstonia scholaris* (L.) R. Br.
 Family : Apocynaceae
 Local name : Chatiana
 Uses of the plant : Fresh latex is used on abscesses and septic ulcer for quick healing. Latex and bark paste is applied on tumours and cancerous wounds.
- Habit and habitat : Tree, Terrestrial
 Flowering and fruiting period : October, March.
- Botanical name : *Amaranthus spinosus* L.
 Family : Amaranthaceae.
 Local name : Kata khutora.
 Uses of the plant : Young tender shoot are used as green vegetables, as medicine to remove kidney stones.
 Habit and habitat : Herb, terrestrial
 Flowering and fruiting period : April, October.
- Botanical name : *A. viridis* L.
 Family : Amaranthaceae.
 Local name : Jati khutora.
 Uses of the plant : Young tender shoots are used as green vegetables and as medicine in eye problem.
 Habit and habitat : Herb, terrestrial
 Flowering and fruiting period : April, September.
- Botanical name : *Aspergus racemosus* Willd
 Family : Liliaceae
 Local name : Satmul.
 Uses of the plant : Infusion obtained from either leaves or whole plant is prescribed orally in hypertension. Fried leaves are given orally in night blindness. Root paste is used t massaged in the body parts in paralysis.
 Habit and habitat : Climber, terrestrial.
 Flowering and fruiting period : During rain and cold season.
- Botanical name : *Boerhavia diffusa* L.
 Family : Nyctaginaceae
 Local name : Purnonowa
 Uses of the plant : Leaf paste is applied on

abscess.
 Habit and habitat : Herb, Terrestrial.
 Flowering and fruiting period : June, November.

Botanical name : *Calamus erectus* L.
 Family : Arecaceae.
 Local name : Jeng bet.
 Uses of the plant : Young stem is used as vegetable. Medicinally it is used to treat nail infection and to remove worm. Matured stem is used for making furniture, sticks, chairs etc. Split stem is used for making baskets and fishing materials etc.

Habit and habitat : Semi aquatic
 Flowering and fruiting period : September, May.

Botanical name : *Centella asiatica* (L) urban
 Family : Apiaceae
 Local name : Bor-manimuni
 Uses of the plant : Leaf paste is applied on abscess and carbuncles for quick healing.

Habit and habitat : Herb, terrestrial.
 Flowering and fruiting period : April, September.

Botanical name : *Chenopodium album* L.
 Family : Chenopodiaceae
 Local name : Jilmil hak.
 Uses of the plant : Young tender shoots are used as vegetables to recover from dizziness.

Habit and habitat : Herb, terrestrial
 Flowering and fruiting period : October, March

Botanical name : *Colocasia esculenta* (L.) Schot
 Family : Araceae
 Local name : Kala Kachu
 Uses of the plant : Folk claim Roasted

petiole is applied in the form of plaster for a week in a joint pains, About 200 ml, infusion of petiole mixed with 250 ml. cow milk are prescribed once a day for three days to woman after child birth to promote secretion of breast milk.

Habit and habitat : Herb, semi aquatic
 Flowering and fruiting period : April, June

Botanical name : *Commelina benghalensis* L.
 Family : Commelinaceae
 Local name : Kana Simolu
 Uses of the plant : Juice is applied in eyelid sore. These are useful in fever, bilious affection and snakebite, leprosy.

Habit and habitat : Herb, semi aquatic
 Flowering and fruiting period : July, December.

Botanical name : *Costus speciosus* (Koen) Smith.
 Family : Zingiberaceae
 Local name : Jamlakhuti
 Uses of the plant : Rhizome is used in urinary problems and to dissolve kidney stones. Stem juice is used as maggoticide.

Habit and habitat : Herb, terrestrial
 Flowering and fruiting period : August, November

Botanical name : *Curcuma longa* L.
 Family : Zingiberaceae
 Local name : Haldhi
 Uses of the plant : Half cup of extracted juice of the rhizome is mixed with equal amount of goat milk and given to drink early in the morning for a week

- to relief oliguria.
 Habit and habitat : Herb, terrestrial
 Flowering and fruiting period :
- Botanical name : *Cuscuta reflexa* Roxb
 Family : Convolvaceae
 Local name : Raghumala
 Uses of the plant : The plant is useful in
 Jaundice, cough,
 bronchitis, fever and
 paralysis.
 Habit and habitat : Herbaceous climber,
 Parasitic.
 Flowering and fruiting period : November, March.
- Botanical name : *Cynodon dactylon*
 (L.) Pers
 Family : Cyperaceae
 Local name : Dubori-bon
 Uses of the plant : Leaf juice is applied on
 allergy and prickly heat
 to get quick relief.
 Habit and habitat : Herb, terrestrial
 Flowering and fruiting period : January, December.
- Botanical name : *Dioscorea alata* L.
 Family : Dioscoreaceae
 Local name : Kathalu
 Uses of the plant : Tubers are used as
 vegetable, it is used as
 medicine to cure
 leprosy, diabetes and
 piles.
 Habit and habitat : Climber, terrestrial
 Flowering and fruiting period : April, August.
- Botanical name : *Elephantopus scaber*
 L.
 Family : Asteraceae
 Local name : Bon dhopat.
 Uses of the plant : Plant extracts remedy
 for elephantiasis. It is a
 cardiac tonic, root
 extract given in dysuria,
 diarrhea, stomach pain,
 dysentery, root is used
 in vomiting.
- Habit and habitat : Climber, terrestrial
 Flowering and fruiting period : September, October.
- Botanical name : *Euphorbia hirta* L.
 Family : Euphorbiaceae
 Local name : Dudh bon
 Uses of the plant : The entire plant is
 considered as sedative,
 haemostatic, sop
 orphic, used
 medicinally in asthma,
 chronic bronchitis. The
 milky juice is useful in
 destroying warts.
- Habit and habitat : Harb, Terrestrial
 Flowering and fruiting period : July, August.
- Botanical name : *Flemingia strobilifera*
 (L.) R. Br.
 Family : Papilionaceae
 Local name : Makhiyoti
 Uses of the plant : Pounded roots are
 applied in ring worm.
 Insect repaler
- Habit and habitat : Shrub, terrestrial
 Flowering and fruiting period : April, June.
- Botanical name : *Gloriosa superba*
 Family : Liliaceae
 Local name : Agnisikha
 Uses of the plant : Used against diabetes
 also used for skin
 diseases.
- Habit and habitat : Herb, terrestrial
 Flowering and fruiting period : Rainy season.
- Botanical name : *Hedyotis scandens*
 Roxb
 Family : Rubiaceae
 Local name : Bhadali lata
 Uses of the plant : The stem gives remedy
 for gastric ulcer,
 heartburn, the fresh
 leaves acts as a
 promoting tissue
 regeneration in
 wounds.
- Habit and habitat : Climber, terrestrial

Flowering and fruiting period : December, July.

Botanical name : *Houttuynia cordata*
Thunb
Family : Piperaceae
Local name : Mosunday.
Uses of the plant : The whole plant has a beneficial effect in the treatment of haemorrhoids, it is used in irregular menstruation. The juice of the fresh plant is used orally.

Habit and habitat : Climber, terrestrial
Flowering and fruiting period : Throughout the year.

Botanical name : *Justicia adhota*
Medik.
Family : Acanthaceae
Local name : Titaphool.
Uses of the plant : The leaf extract has been used for treatment of bronchitis and asthma large doses of fresh juice of leaves have been used in tuberculosis. It is used to stop bleeding gum.

Habit and habitat : Shrub, terrestrial
Flowering and fruiting period : December, May.

Botanical name : *Kaempferia rotunda*
Family : Zingiberaceae
Local name : Bhuichampa
Uses of the plant : The tubers are used in wound, ulcer, blood clots, tumorous and cancerous swellings.

Habit and habitat : Herb, semi aquatic
Flowering and fruiting period : April, August.

Botanical name : *Lantana camara* L.
Family : Verbenaceae
Local name : Goo-Phool.
Uses of the plant : Juice (5 ml) is given orally on empty

stomach for 15 days in Tuberculosis. Paste is applied locally in boils.

Habit and habitat : Shrub, terrestrial
Flowering and fruiting period : June, February.

Botanical name : *Lasia spinosa* (L.)
Thw.
Family : Araceae
Local name : Sengmora
Uses of the plant : Young leaves are used as vegetables, underground corm is used as remedy for sore throat and piles.

Habit and habitat : Herb, semi aquatic.
Flowering and fruiting period : November, February.

Botanical name : *Litsaea cubeba*. Pers
Family : Lauraceae
Local name : Majankari
Uses of the plant : Stem bark in the form of paste is applied locally in scabies. Fruits in the forehead in headache,

Habit and habitat : Shrub, terrestrial
Flowering and fruiting period : July, September.

Botanical name : *Michelia champaka*
L.
Family : Magnoliaceae
Local name : Tita chopa
Uses of the plant : Leaves are used against scorpion sting, flowers against dyspepsia, nausea and fever. Also used in diuretic in renal disease, gonorrhoea, gastric and fever.

Habit and habitat : Tree, terrestrial
Flowering and fruiting period : April, July.

Botanical name : *Vitex negundo*. L.
Family : Verbenaceae
Local name : Pashatia

Uses of the plant : Leaves in the from of paste are applied locally in scabies, Decoction (20 ml) of root is given orally once a day for 7 days in piles

Habit and habitat : Herb, terrestrial

Flowering and fruiting period : April, August.

Botanical name : *Zingiber officinale*.
Rose

Family : Zingiberaceae

Local name : Morow. Ada.

Uses of the plant : Paste of rhizome is applied locally in rheumatism. Infusion (5 ml) mixed with 0.3g opium is given orally in depression.

Habit and habitat : Herb, terrestrial

Flowering and fruiting period : Rainy season

Galekey and Abhaypur reserve forest are found at the transition zone. Anthropogenic threat like hunting, jhum cultivation and capturing forest areas for especially tea garden were common in this region, also the people lived around are depend on this forest for timber, vegetables, medicine etc. Medicinal and aromatic plants are rich in this area. Specially it is a transition area of Assam and Nagaland and Assam Arunachal. Due to anthropogenic activities these important medicinal plans of the forest become decreases slowly. So, involvement of citizens at grassroots level is important in ehnomedicinal plants management. By facilitating a deeper relationship with the environment, the world's diversity can be conserved for the future. It is in consumers and voter's everyday choices and understanding that the future of biodiversity will finally be determined. Local authorities and Governments are in the best position to reach out to citizens. Involvement of citizens is the main mechanism for raising awareness and spreading responsibility. It is the responsibility of local authorities to expand this connection to a deeper understanding of ecosystems.

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