

Indigenous Medicinal Plant Knowledge of Cough or Bronchial Problems in Goalpara District (N.E. India)

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ABSTRACT

In the health systems of different ethnic groups living in remote areas of North-East India traditional medicines have always played a key role. An ethno medicinal survey was documented on one of the floristically rich district of Assam that is in the district of Goalpara was done during January 2012 to August 2014. In the present investigation it was seen that several kinds of plant species growing wild in rural, semi forest and forest areas which are commonly used by people of Goalpara district for curing cough, asthma and whooping cough, diarrhoea, wound, piles, seminal debility, jaundice and other common diseases. This paper provides the information about the traditional uses of 16 plants of Goalpara district for the treatment of cough, asthma and whooping cough.

Key words: *Traditional medicine, Goalpara district, Cough and bronchial problems.*

INTRODUCTION

The vegetation of the district of Goalpara is mainly semi evergreen, mixed deciduous type along with other subtypes. It is a very rich district of the state of Assam as far as its floristic diversity is concerned. It is often seen that the various ethnic groups of the tribal dominated district of Goalpara of Western Assam depend on plant resources for various ailments. Most of the plants used by them are herbaceous in nature. They use root, stem, leaves, bark and also seeds most commonly in curing various ailments. However, extracts derived from various parts of shrubs and trees are also used. Although they collect these species from nearby jungle, sometimes they cultivate these species in their home garden. They also use different kinds of weeds in various alignments which are commonly found in agricultural fields as well as in and around their neighbourhood. The World Health Organization (WHO) has estimated that about 80% population in the developing countries depends directly on plants for medicines¹⁰. The World Health Organization has listed 20,000 medicinal plants globally⁴ and India is having about 15-20% . Throughout India the uses of medicinal plants in meeting family's primary healthcare and nutritional needs are traditional and embedded in all cultures^{1,3}. These ethno medicinal plants have the potential to provide green health alternatives and number of other eco-friendly products of domestic and industrial uses².

Goalpara is a densely populated district of Assam of which 90% of the population depends on agriculture for their livelihood. The district is inhabited by different ethnic groups. Although Muslim, Rabha, Koch and Garo are prominent inhabitant of this district, other tribes and communities like Bodo, Kalita and Hindu Bengalis are also living friendly and co-operatively. The traditional herbal practices are still a primary source of healthcare in this region. People of this part of Assam still depend upon locally available plant resources and traditional healers to cure different alignments, despite of modern medical facilities. The traditional herbal healers are commonly known as *Bej*, *Oja* or *Kobiraj* who generally prescribe and supply medicines to the patients.

Though various ailments like, skin disease, eye disease, pox, fever, stomach disorder including some minor bodily disorders are prone to the inhabitants of Goalpara district, but problem like cough, bronchial

asthma are quite common specially among children and aged groups. So in this research work importance was given to asthma, cough or other bronchial disorder. While survey was documented about ethno medicinal plants of Goalpara district, several information were gathered on various plants which are commonly used in cough or bronchial asthma. In this paper an attempt has been made to document or to analyze different type of practices to cure or to prevent these very frequent, serious diseases.

MATERIAL AND METHODS

Field survey was carried out during January 2012 to August 2014 in the entire Goalpara district of Western Assam to collect ethnobotanical information. A specially designed questionnaire was used to do a survey on the local health practices of the study area which will include most relevant questions that can give data to fulfil the objectives of the work. Questionnaire is thematic in nature and is meant to fulfil and seek very specific information. The questionnaire is a simple one and is having elicited simple answer. The information about ethno medicinal uses, local names of plants, plant parts used, formulation and preparation of recipes, dose regimen, duration and mode of administration were sought from local healers. All these information on traditional remedies were gathered by way through interviews and discussion with local healers, aged people, fisherman, cowboy and other rural folks also consulted. The collected specimens were dried and made into herbarium specimens by following the standard herbarium method⁵. The voucher specimens collected were identified with the help regional flora and related literature^{6,7,8,9} and finally authenticated in the herbarium of Botanical Survey of India (BSI) Shillong, Eastern circle and Central National Herbarium (Kolkata). The specimens were submitted to the Herbarium of department of Botany, Goalpara College (Assam).

Study area

Western Assam part is located at the extreme western part of Assam it extends from 89°49'20" E to 91°48'16" longitude and 25°27' N to 26° 54' latitude covering lower Brahmaputra valley [4]. This area covers six districts- Dhubri, Kokrajhar, Bongaigaon, Goalpara, Barpeta and Nalbari. Out of which Goalpara district was visited for extensive data collection. The district Goalpara is situated on the south bank of river Brahmaputra. According to 2011 census the total population of Goalpara district is 1,008,959. Goalpara with a longitudinal extension of 90° 07' E to 91° 05' E and latitudinal extension of 25° 53' N to 25° 13' N latitude and an area of 1831 sq. km. During winter the climate of this region is moderate and in summer it is hot.

RESULT AND DISCUSSION

Due to unavailability of medical facilities in the district the local people of different villages mainly the inhabitants of remote rural areas are still compelled to depend on traditional system of medicine. Ethno medicinal properties of the plants being used in the treatment of cough or other bronchial disorder was recorded including scientific name, families, local names, plant part used, amount of useful plant products, preparation etc. A total of 17 medicinal plant species belong to 16 genera and 12 families are being used for treating cough related problems by the tribes of Goalpara district. Of these 17 species, four species belong to Acanthaceae, followed by both Apiaceae and Piperaceae having two species each; remaining eight families like Oliaceae, Verbenaceae, Zingiberaceae, Asteraceae, Lamiaceae, Rutaceae, Myrtaceae, Solanaceae and Euphorbiaceae each having only one species.

Herbal recipe I

S. No.	Botanical name	Family	Vernicular name	Part(s) used	Proportion
1	<i>Nyctanthus arbortristis</i> L.	Oliaceae	Sawali (Ass), Safali (Koch, Bodo)	Leaf	100 gm
2	<i>Phlogacanthus thyrsoformis</i> (Hardow.) Mabb.	Acanthaceae	Bahoka tita, Titaful (Ass), Basoka (Koch), Basenkha bebar goja (Bodo), Baska khakai (Rabha)	Leaf	100 gm
3	<i>Ecbolium viride</i> (Forsk.) Alston.	Acanthaceae	Nilkantha tita (Ass)	Root	50 gm
4	<i>Clerodendrum viscosum</i> Vent.	Verbinaceae	Vatai teta, Vate tita (Ass), Lokhna bedat (Bodo)	Leaf	100 gm
5	<i>Andrographis paniculata</i> (Burm. f.) Wall. Ex. Nees	Acanthaceae	Kalmegh, Kalpatita (Ass), Kalmegh (Bodo)	Leaf	100 gm

Mode of preparation

In this preparation of herbal recipe 100 gm fresh leaves of *Nyctanthus arbortristis*, *Phlogacanthus thyrsoformis*, *Clerodendrum viscosum*, *Andrographis paniculata* crushed gently along with 50 gm root of *Ecbolium viride*. The crushed material is then making into tablets which are dried in sun. These tablets can be stored for about two weeks. The tablets are given at the rate of one tablet three times daily continuously for seven days. In case of children ½ tablet is prescribed two times daily for 5 to 7 days. The patients are strictly prohibited to take fish, curd, cold water, lady's finger, arum and advised to take hot water and sufficient rest as much as possible.

Herbal recipe II

S. No.	Botanical name	Family	Vernicular name	Part(s) used	Proportion
1	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Moran ada (Ass), Haijeng (Bodo), Sinkku (Rabha)	Underground stem	25 gm
2	<i>Piper longum</i> L.	Piperaceae	Pepoli (Ass), Semphre (Bodo)	Fruit	5 gm
3	<i>Piper nigrum</i> L.	Piperaceae	Jati jaluk (Ass), jathwise allou (Bodo)	Fruit	2-3 no.
4	<i>Justicia adhatoda</i> L.	Acanthaceae	Boga bahoka (Ass), Basikho jola (Bodo) Bokai baska (Rabha)	Leaf	2-3 no.

Mode of preparation

In this preparation 25 gm rhizome of zinger and 2-3 leaves of *Justicia adhatoda* crushed along with 2-3 no of fruit of both *Piper nigrum* and *Piper longum*. Few amount of honey is also added along with freshly prepared mixture. The extract is prescribed to the patient suffering from asthma at the rate of 2 teaspoon thrice daily after food. In this way the patients are allowed to take the medicine for 2-3 days. In case of children the dose is only 1 teaspoonful twice daily. The patients are strictly prohibited to take fish, meat, egg, mucilaginous vegetables, alcoholic liquors etc. and they are advised to take rest as much as possible and to drink hot water.

Herbal recipe III

S. No.	Botanical name	Family	Vernicular name	Part(s) used	Proportion
1	<i>Spilanthes paniculata</i> Wall. ex DC.	Asteraceae	Suhoni, Jari, Parboti sak (Ass), Usumwi (Bodo)	Young stem	100 gm

Mode of preparation

Here the healer uses a commonly found herb in Assam that is *Spilanthes paniculata*. The tender stem is collected from nearby jungle or Agricultural field where it grows as a weed. 100 gm of freshly collected stem of the herb is crushed and squeezed to get a clean juice. This juice is prescribed along with honey to the patient suffering from Cough. This is given at the rate of 2 teaspoonful thrice daily after of before food. In case of children the dose is only 1 teaspoonful twice daily. The patients are told not to take alcoholic beverages, sweets, banana etc. They are advised to take mango, leaf of drum stick etc. as far as possible.

Herbal recipe IV

S. No.	Botanical name	Family	Vernicular name	Part(s) used	Proportion
1	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Kola tulosi (Ass), Tursing Tulsikrishna (Bodo)	Leaf	100 gm
2	<i>Hydrocotyle sibthorpioides</i> Lamk.	Apiaceae	Soru manimuni (Ass)	Leaf and stem	100 gm
3	<i>Centella asiatica</i> (L.) Urban	Apiaceae	Bor manemuni (Ass)	Leaf and stem	100 gm

Mode of preparation

Here all the above mentioned plant ingredients are crushed and the extract is collected. The liquid extract is mixed with honey and allowed to take internally at the rate of 1 cup twice daily after food continuously for three to five days. The patients are allowed to drink hot water just after taking the medicine. In case of children it is advice to take half cup of dos two times daily. The patients are advised to avoid cold wind or any cold condition.

Herbal recipe V

S. No.	Botanical name	Family	Vernicular name	Part(s) used	Proportion
1	<i>Zanthoxylum nitidum</i> (Roxb.) DC.	Rutaceae	Jabrung (Ass, Bodo)	Seed	7 no.
2	<i>Piper nigrum</i> L.	Piperaceae	Jati jaluk (Ass), Jathwise allou (Bodo)	Fruit	10 no.
3	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Moran ada (Ass), Haijeng (Bodo) Sinku (Rabha)	Rhizome	100 gm
4	<i>Syzygium aromaticum</i> (L.) Merr	Myrtaceae	Lang (Ass)	Flower bud	15 no.

Mode of preparation

In this preparation all the plant ingredients are crushed finely and made into tablets which are dried in sun. These readymade tablets are given to the patients suffering from bronchial asthma. These tablets are advised to consume by chewing at the rate of two tablets once daily for three days regularly. In case of children ½ tablet is prescribed one time daily. The patients are strictly prohibited to take fish, spicy food and patients should be in sufficient rest.

Herbal recipe VI

S. No.	Botanical name	Family	Vernicular name	Part(s) used	Proportion
1	<i>Datura metel</i> L.	Solanaceae	Datura (Ass, Bodo)	Dry stem	5 cm

Mode of application

This practice is commonly used by the Rabha tribes of Goalpara district. Here *Datura* stem is used as masticatories for about 15 days. This ethnic system is most effective as mentioned by the healers as well as from the reports of some patients. But the practice is strictly prohibited for children and adolescence group.

Herbal recipe VII

S. No.	Scientific name	Family	Varnicular name	Part (s) used	Proportion
1	<i>Cereus peruvianus</i> Mill.	Euphorbiaceae	Seju (Ass) Sejo (Bodo)	Leaf	2-3 no.

Mode of application

To prepare this recipe the fleshy leaf of *Cereus peruvianus*, roasted over flame. The withered leaves are then squeezed and a greenish juice is obtained. This juice is prescribed to take with honey at the rate of one teaspoonful twice daily for 3-4 days. This is often seen to be practiced among children which is a very effective preparation against cough.

Fig. 1: *Ecbolium viride* (Forsk.) Alston



Fig. 2: *Clerodendrum viscosum* Vent.



Fig 3: *Nyctanthus arbortristis* L.



Fig 4: *Justicia adhatoda* L.



Fig 5: *Ocimum tenuiflorum* L.



Fig 6: *Cereus peruvianus* Mill.



Fig 7: *Spilanthes paniculata* Wall. ex DC.

CONCLUSION

It has been observed that the people of the district of Goalpara still depend upon traditional health care systems to cure or control various cough or bronchial diseases. It is found that in almost all cases the preparations are mixed with honey. These medicines are often found to be more effective and having less or no side effect. But the scope for analysis, research, modifications and refinements in such secrecy maintained family based occupation are very limited. It has also been seen that the young generations often ignore the ancient traditional practices. So there is every possibility that these practices will very soon become extent with the expiry of older knowledgeable people. According to the healers sometimes it becomes problematic to prepare certain recipe due to unavailability of some specific plant species. This is mainly due to habitat loss. So there is a need to create awareness among youngest generation, so that rapid erosion of the valuable ethnic knowledge about plant resources can be checked to a certain extent. Every step should be taken to conserve the rare and endangered medicinal plant species by involving research institutions and various state departments through establishment of botanical garden and herbal garden.

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