



Ethnomedicinal Plants used by the Sonowal Kacharis of *Bhekulajan* Village in Dibrugarh District, Assam, NE India

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Abstract

The present study briefly reports the traditional knowledge of ethnomedicinal plants utilized for primary healthcare needs by the Sonowal Kacharis of Bhekulajan village, Dibrugarh district, Assam. Data was collected through observation, interview and concrete case study method in the year 2011. 43 medicinal plant species belonging to 30 different botanical families that are used to cure 25 different diseases have been documented in the present study. Some medicinal plants associated with magico-religious methods of disease treatment are also discussed. The study reiterates the need of documentation and scientific study of the traditional ethnomedicinal knowledge of the tribal communities on priority basis.

Keywords: Traditional knowledge, ethnomedicinal plants, Sonowal Kachari, Dibrugarh.

Introduction

Human beings by nature depend on Mother Nature. From time immemorial, people have been gathering knowledge about the nature and the environment. The knowledge thus gathered from long observations and experiences becomes an inevitable part of human society and life. The congregate knowledge base is then passed on from one generation to the next, which at later periods or at present are known as traditional knowledge (TK). The TK about different species of flora, their use, their conservational strategies, their curative properties against various diseases and other benefits are priority research areas. The knowledge of medicinal plants and its conservation is found among all the tribal communities of India. Tribals have deep belief in their native folklore medicine for remedies and they rely exclusively on their own herbal cure¹. However, for a long time such TKs were unexplored, undocumented and without proper protection. Currently, the unauthorized use and the misappropriation of medicinal plants have stimulated the need for scientific exploration and documentation of traditional systems of medicine of the tribal people.

Currently, much attention is being paid to the significance of traditional herbal medicine in public health in both developed and developing countries. According to the World Health Organization (WHO), nearly 80% of the world populations rely on the use of traditional medicines to meet their primary health care needs². The demands for herbal medicines as well as other herbal personal and health care products are growing daily. As such, the herbal drug industry has become a big profitable business in today's global market. In India, for the last few years a number of Research Institutes and different schemes of the Central Government have been conducting significant research and development work on ethno-medicine. Northeast (NE) India is the homeland of a large number of tribes. They

depend on the surrounding plant resources which form an integral part of their traditional health care system. Over the past few years a good number of significant ethnomedicinal studies have been conducted among different tribes and in different regions of India³⁻¹¹. However, similar work among the study population is scanty. Ethnomedicine and its practices differ from tribe to tribe, community to community, even village to village. In this backdrop, the present paper is an attempt to document the ethnomedicinal use of plants by the Sonowal Kacharis, an indigenous tribe of Assam.

The Study Population: The Sonowal Kacharis are one of the plain tribes of Assam. The main concentration of their population is found in the Dibrugarh and Tinsukia districts of upper Assam. A small population of the tribe is also found in Sivasagar, Lakhimpur and Jorhat districts of Assam. They belong to the great Bodo tribe and the Tibeto-Burman language family; however, they speak Assamese language due to their close contact with the nearby Assamese caste population. The Sonowal Kacharis are divided into seven endogamous clans and subdivided into fourteen sub clans. Agriculture is the backbone of their economy and rice is their staple food. Their society is patrilineal and both nuclear and joint families are found among them. They are devout followers of Hinduism as well as they are also the followers of Neo-Vaisnavism.

Material and Methods

The present study was conducted in Bhekulajan village under Tengakhat Development Block, located east of Dibrugarh district. The village comprises five hamlets - Borghar suburi, Purani Bhekulajan, Kathalguri, Aamguri and Niz Bhekulajan with a total of 3000 families. Data was collected through observation, interview and concrete case study method in the year 2011. First hand information about the local names of

different ethno-medicinal plants; part/s used; methods of medicine preparation; uses and doses against the particular disease were recorded. Standard literatures on local flora¹²⁻¹³ were used to identify and verify the documented plant species. The data are presented alphabetically disease-wise and includes the scientific, family, Assamese and English names of the medicinal plants; method of herbal medicine preparation and mode of usage.

Results and Discussion

Acidity: Leaf paste of *Eryngium foetidum* L. (Umbeliferae; *Man Dhonia*; Fitweed) mixed in the water of soaked rice with little amount of sugar is prescribed.

Asthma: Tree bark of *Terminalia arjuna* Wight & Arn. (Combretaceae; *Arjun gach*; Arjun tree) is crushed and continuously boiled in approximately 2 liters of water; thereafter, the concentrated decoction (about 250 liters) is taken. However, pregnant women are not administered the medicine as it may lead to miscarriage. Juice of *Euphorbia neriifolia* L. (Euphorbiaceae; *Siju*; Thorny cactus) is mixed with honey and taken till cured. Root juice of *Hiptage benghalensis* (L) Kurz. (Malpighiaceae; *Madhoi maloti*) is also taken as remedy.

Body ache: Roots of *Coffea bengalensis* Roxb. (Rubiaceae; *Kothona* phool; Indian wild coffee), *Cymbopogon pardu* L. (Poaceae; *Gan Birina*) and *Ruta graveolens* L. (Rutaceae; *Sasanlota*; Common rue) along with 11 nos. of *Piper nigrum* L. (Piperaceae; *Jaluk*; Black pepper) seeds are boiled in about ½ liters of water in a bamboo tube. The resultant decoction and the root mixture are administered to the patient.

Chronic Cough: Leaves of *Vitex negundo* L. (Verbenaceae; Chaste tree; *Pochatia*) and roots of *C. bengalensis* are ground to make a paste which is taken in empty stomach in the morning.

Diabetes: Dried seeds of *Syzygium jambolanum* DC. (Myrtaceae; *Kola Jamu*; Black plum) are taken with water in empty stomach which keeps the blood sugar level under control.

Diarrhea: Leaves of *Punica granatum* Linn. (Punicaceae; *Dalim*; Pomgranate) are crushed to extract the juice that is mixed with sugar and taken.

Dysentery and Blood Dysentery: The juice of young leaf buds of *Psidium guajava* L. (Myrtaceae; *Modhuri*; Guava) is prescribed to take. Dry seeds of *S. jambolanum* are ground and soaked in water for some time, then the filtrated water is prescribed to drink. Leaves of *Polygonum chinense* L. (Polygonaceae; *Madhusuleng*; Red sank) are boiled or prepared as curry with small fish and taken.

Epistaxis: 4-5 drops of leaf juice extract of *Leucas aspera* Spreng. (Lamiaceae; *Duron bon*; White nettle) is poured inside the nose.

Eye Infection: Flower juice of *Rosa Centifolia* L. (Rosaceae; *Tezi golap*; Cabbage rose) is applied on the eye.

Fever with cold and body ache: Leaves of *Impatiens roylei* Walp. (Balsaminaceae; *Damdewka*; Indian Balsam) are fried and taken. Sometimes leaf juice of *Hydrocotyle rotundifolia* Roxb. (Umbeliferae; *Horu Manimuni*; Water Pennywort) is also administered. In case of high fever, leaf paste of *Clerodendrum colebrookianum* Walp. (Verbenaceae; *Nefafu*; Glory flower) is applied on the forehead of the patient. Black tea prepared with salt and black pepper is taken for cold. Also, mustard oil with *Allium sativum* L. (Liliaceae; *Nohoru*; Garlic) is heated and the patients' feet's and hands are massaged with it. To get relieve body ache juice of grounded twigs of *Tinospora cordifolia* (Willd) Miers. (Menispermaceae; *Sogunilota*; Tinospora) is applied on the body which relieved the body ache.

Flaming and pain of eyelids: Juice extract of *Commelina benghalensis* L. (Commelinaceae; *Kona Simolu*; Day flower) is applied on the affected area.

Gastric: Tree bark of *Terminalia chebula* Retz. (Combretaceae; *Hilikha*; Chebulic Myrobalans), *Alstonia Scholaris* (L) R.Br (Apocynaceae; *Choatiana*; Devil's tree) and *P. guajava* are ground to a fine paste, which is prescribed to take with water.

Gynecological problems: i. Tree bark of *Bombax Malabaricum* DC. (Bombacaceae; *Simolu*; Silk cotton tree) is ground and mixed with milk and given during vaginal discharge. ii. Pain during menstruation is treated by taking leaf juice of *C. bengalensis* with goat milk in empty stomach in the morning. iii. Leaves and young shoots of *H. rotundifolia* are eaten as vegetable during pregnancy and to have smooth delivery. iv. Flower juice extract of *Hibiscus rosa-sinensis* L. (Malvaceae; *Ronga Joba*; China rose) and leaf paste of *Curculigo orchoides* Gaertn. (Hyposidaceae; *Nagini*) are taken orally and applied on the head respectively to reduce labor pain. v. To stop bleeding after delivery, tender leaf buds of *Croton joufra* Roxb. (Euphorbiaceae; *Mahudi*) and *Ananus comosus* (L.) Merrill. (Bromeliaceae; *Mati kothal*; Pineapple), roots of *Perilla ocimoides* L. (Labiatae; *Sookloti*; Perilla) and a few black pepper seeds are boiled and administered. Sometimes, leaf buds *C. joufra*, *Stephanea harnandifolia* Walp. (Menispermaceae; *Tubuki lota*; Tape-vine), *Anisomeles indica* (L) Ktze. (Labiatae, *Bontil*) and bamboo shoot are grind to make a juice and administered with Milk.

Intestinal worm infection: Juice of raw *Curcuma domestica* Loir. (Zingiberaceae; *Kesa Halodhi*; Common turmeric) and root juice extract of *E. foetidum* are administered. An immature fruit of *Citrus acida* Roxb. (Rutaceae; *Kaji nemoo*; Lemon) is heated in hot charcoal and taken. Roots of *P. granatum* is ground and kept soaked in water. The filtrate liquid is taken in empty stomach early in the morning which cures tapeworm infection.

Jaundice: Plant juice extract of *Dracaena angustifolia* Roxb. (Liliaceae; *Jomlakhuti* Dragon's tree) mixed with water is administered. Leaves and root juice of *Phyllanthus niruri* L. (Euphorbiaceae; *Ban Amlokhi*; Ground embelic) is taken orally. Fruit juice of *Averrhoa carambola* L. (Oxalidaceae; *Kordoi*; Carambola) is taken with water till relief.

Pneumonia: Leaves of *V. Negundo*, *Zingiber purpureum* (Zingiberaceae; *Moran ada*; Cassumunar ginger) rhizome and a few seeds of black pepper are boiled in water and the decoction is administered.

Pyorrhea: Juice of *Jatropha curcas* L. (Euphorbiaceae; *Bangali era*; Purging nut tree) is applied on tooth gum as cure. Teeth are brushed with the stem of the plant to keep them healthy.

Scabies: Leaf juice extracts and paste of *Stereospermum chelonoides* DC (Bignoniaceae; *Paroli*) is applied on the affected area. The leaf paste is first wrapped in plantain leaf and fire heated; thereafter it is applied on the affected area.

Throat infection: A root paste of *Xanthium strumarium* L. (Compositae; *Agora*; Bur weed) is wrapped with a clean cotton cloth over the place of irritation and pain in the throat.

Tongue ailment: Sometime a white layer (*Bighini*) appears on the tongue of children. As remedy root juice extract of *Sauropus androgynus* L. Merr (Phyllanthaceae; *Barisundari* or *saragmukhi*; Sweet leaf) is prescribed. Leaf paste of *Oldenlandia corymbosa* L. (Rubiaceae; *Banjalu*) is applied on the tongue as a cure for tongue blisters.

Urine Infection: Leaf juice of *Bryophyllum pinnatum* Kuntz. (Crassulaceae; *Dooportenga*; Sprout leaf plant) is taken regularly till cured.

The present study documented a total of 43 medicinal plant species belonging to 30 botanical families that are used to cure 25 different diseases. In terms of number of plant species, Euphorbiaceae is represented by the highest number of species (04). This is followed by 10 families viz. Combretaceae, Labiatae, Liliaceae, Menispermaceae, Myrtaceae, Rubiaceae, Rutaceae, Umbeliferae, Verbenaceae and Zingiberaceae with 02 species each, while the rest of the 19 families are represented by 01 species each. The various types of ailments are found to be cured by making decoction, juice extract and paste from leaves, roots, tree/stem bark, seeds, flowers and fruits of specific plant. The data reveals that the medicinal plant parts are mostly crushed or ground to a paste, squeezed for juice and decocted during remedy preparation. Plant parts are also eaten raw and sometimes boiled. As the mode of usage, mostly the herbal medicines are taken raw or in the form of juice and filtrate extract when consumed internally, and as ointments, powder or raw paste when applied externally.

The ethnomedicinal practices of the Sonowal Kacharis of the study village can be divided into two types – i. Herbal medicine and ii. Magico – religious practices. In the study area there are 7 elderly traditional practitioners who are well versed with the various ethnomedicinal plant recourses of the surrounding environment as well as with the different magico-religious methods of disease treatment. Some ailments like flaming and pain of eyelids, jaundice, etc. are treated by magico-religious practices where the remedy is prepared from a particular medicinal plant(s) and is accompanied with enchanting of specific hymns (*mantras*). For example, leaf paste of *Zizyphus jujuba* Lamk (*Bogori*) is treated with some magical hymns and prescribed as a remedy for flaming and pain of eyelids which is to be applied in the morning and evening on the affected area. As a remedy for jaundice a small piece of the root of *Croton tiglium* L. (*Konibih*) treated with *mantras* is tied on the upper arm of the patient till cured. The people, for their primary health care needs, are found to consider the age old traditional herbal medicines as the 1st choice or 1st intervention of curative measure. However, as time passes and the ailment continues newer choices or options are considered, which ultimately in most cases terminate to modern medicine.

It was observed that every household in the study village have large homestead plantations called as *Bari* where a number of medicinal plant species are cultivated and some grow naturally. The traditional practitioners and the elderly persons are principal knowledge holders. They know the sustainable use of the various medicinal plant resources. However, to the dismay of any one the traditional ethnomedicinal knowledge of the Sonowal Kacharis under study is gradually disappearing. The primary reason is due to the lack of interest of the younger generation to learn their traditional system including the process of identification, collection and preservation of the medicinal plants. The impact of modern education and the process of modernization as well are equally responsible for the dismal scenario. Besides, it was observed that the villagers particularly the younger generation is taking up small scale tea cultivation as a profitable economic pursuit. This in turn is responsible for destroying the large homestead plantations which are a rich source of many valuable ethnomedicinal plants.

Conclusion

The findings of the present study prove that the Sonowal Kacharis of the present setting have a rich tradition of plant based ethnomedicinal knowledge. They have immense faith on the effectiveness of their herbal medicines. In the backdrop of the rapidly changing socio-cultural and economic changes it is high time to document their ethnomedicinal knowledge and make the people aware about the increasing importance as well as the global scenario of ethnomedicine. Further research and scientific experimentations of the traditional medicine will be useful in exploring many hidden phyto-chemical properties. The study would also help in protecting the Intellectual Property

Rights of the traditional practitioners and provide baseline information for setting up medicinal plants garden in large scale.

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