

Ethnomedicinal plants from Dibru-Saikhowa biosphere reserve, Assam

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An account on medicinal usage of 61 plant species traditionally used as folk medicine to treat different ailments by the inhabitants of Dibru-Saikhowa biosphere reserve in Northeast India has been reported. For each plant species, local names, parts used, purpose of use, processing and mode of administrations are indicated.

Keywords: Ethnomedicine, Dibru-Saikhowa biosphere reserve, Assam, Northeast India

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India is one of the 12 megadiversity countries and comprises of 2 hot spots¹. The country has so far 12 established and 12 proposed Biosphere Reserves². The Himalayan region of the country, which is known to be one of the hot spots of biodiversity alone is the home of 5 established Biosphere Reserves, viz. Dehang-debang, Dibru-Saikhowa, Manas, Nandadevi and Kangchaendzonga^{1,2}. Dibru Saikhowa biosphere reserve is one of such heritage sites in its eastern Himalaya. Dibru-Saikhowa biosphere reserve is located (27°35'-27°47'N, 95°10'-95°40'E) in the southern bank of Brahmaputra river in upper Assam at an altitude between 110-126 m above the mean sea level (Fig.1). It includes part of Dibrugarh and Tinsukia districts of Assam and covers an area of 765 km² with 340 km² as core area. Situated in the flood plains of Brahmaputra river, the area of the Biosphere Reserve represents evergreen, deciduous, littoral and swamp forests. The Biosphere Reserve is inhabited by about 40 villages comprising of people belonging to Mongoloid (*Thai-Ahom, Sonowal Kacharies, Maran, Motok, Mishing*) and Indo-Aerian (*Nepalese*) ethnic groups. Traditional agriculture is the primary mean of livelihood of the people for their day-to-day needs of food, fodder, fuels and medicaments. However, there are very few reports so far from Dibru-Saikhowa biosphere reserve of the country about its useful flora. Thus, the report is communicated on the basis of an ethnomedicobotanical study in the Biosphere Reserve.

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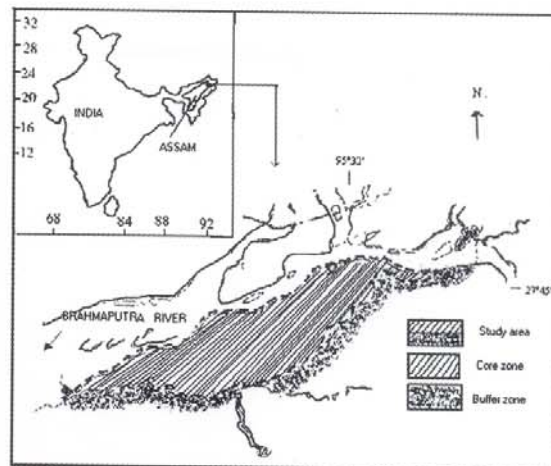


Fig.17—Location map of the study area

Methodology

The study was performed during 2002-2003 covering 20 villages of the Biosphere Reserve. Information was collected during field trips on the basis of interviews with the traditional practitioners, village heads, women folks and the people in the region respected elderly persons, whose empirical knowledge. Occasionally, the people were also taken into the jungles as guide for collection of plant specimens. The plant species were identified consulting the floras^{3,4} and the herbarium specimens at the Herbarium of Botanical Survey of India, Shillong; Regional Research Laboratory, Jorhat and

information on usage of plant species were compared with those of available literature³⁻⁸. All collected specimens were deposited in the herbarium of Regional Research Laboratory, Jorhat, Assam.

Results

The plant species are arranged disease wise in alphabetical order. For each species, plant name, family, vernacular name, parts used, methods of preparation, modes of administration and uses are enumerated below:

Asthmatic problems

Terminalia chebula Retz. (Combretaceae, *Silikha*) — Seed decoction is given once a day for 7 days in asthma. Infusion of *Aristolochia indica* Roxb. (Aristolochiaceae, *Nila-Kantha*) root is given once a day in breathing problems.

Cough

Alpinia galanga Willd. (Zingiberaceae, *Tora*) — Rhizome juice is given twice a day. Decoction of *Michelia champaca* L. (Magnoliaceae, *Titasopa*) bark is taken orally.

Cuts and wounds

Leea acuminata Wall. (Vitaceae, *Kukura-Thengia*) — Leaf paste is applied as antiseptic. Tuber paste of *Dioscorea alata* L. (Dioscoreaceae, *Kath-Alu*) is applied in cancerous wounds. Leaves of *Chromolaena odorata* L. (Asteraceae, *Champolak*) are applied locally. Leaf juice of *Pogostemon benghalensis* (Burm. f.) O.Kuntze (Lamiaceae, *Sukloti*) is applied to stop bleeding.

Diabetes

Bark decoction of *Annona squamosa* L. (Annonaceae, *Ata*) — is given once a day in empty stomach. *Cajanus cajan* (L.) Millsp. (Papilionaceae, *Arhar*) leaf decoction is taken in empty stomach.

Diarrhoea and dysentery

Decoction prepared from aerial portion of *Desmodium triflorum* DC. (Fabaceae, and *Jatropha curcas* L. (Euphorbiaceae, *Bongali-Ara*) — bark is given in diarrhoea. Bark decoction of *Bischofia javanica* Blume. (Euphorbiaceae, *Uriam*), *Mangifera indica* L. (Anacardiaceae, *Am*) and *Phyllanthus emblica* L. (Euphorbiaceae, *Amloki*) is taken twice a day. *Plantago erosa* Wall. (Plantaginaceae,) leaf decoction is taken in diarrhoea.

Earache

Datura metel L. (Solanaceae, *Dathura*) fruit juice is given as eardrop.

Epilepsy

Decoction of equal amount of *Ziziphus mauritiana* Lam. (Rhamnaceae, *Bogori*) — and *Piper longum* L. (Piperaceae, *Pipali*) fruits, *Vetiveria zizanoides* (L.) Nash (Poaceae) roots and *Mesua ferrea* L. (Guttiferae, *Nahar*) flowers is given once a day for 7 days.

Eye Problems

Juice of *Pouzolzia zeylanica* (Linn.) Benn. (Utricaceae) — aerial parts is applied twice a day in injury. Juice of *Rosa chinensis* L. (Rosaceae, *Ronga-Gulap*) flower is applied in the morning to reduce reddening of the eye due to infection.

Fever

Euphorbia ligularia Roxb. (Euphorbiaceae, *Siju*) — stem paste after removing the epidermis is applied externally on forehead. Bark infusion of *Alstonia scholaris* L. (Apocyanaceae, *Satiana*) is given once a day in malarial fever. *Aristolochia bracteolata* Lamk. (Aristolochiaceae, *Nil-Kantha*) leaf infusion is given to children. Bark decoction of *Barringtonia acutangula* (L.) Gaertn. (Barringtoniaceae) is taken twice a day.

Gynecological disorders

Two to three teaspoonfuls juice obtained from fresh leaves of *Spilanthes acmella* Murr. (Asteraceae, *Suhani-Bon*) and *Ecliptera prostrata* L. (Asteraceae, *Keheraj*) — mixed with little amount of *Piper nigrum* L. (Piperaceae, *Jaluk*) seed powder is given once a day in empty stomach in leucorrhoea. *Nyctanthes arbor-tristis* L. (Oleaceae, *Sewali-Phool*) root infusion is given orally once a day in menstrual irregularities. *Viscum album* L. (Loranthaceae, *Roghu-Mala*) leaf infusion is given in empty stomach in painful menstruation. Infusion prepared from *Tamarindus indica* L. (Caesalpinaceae, *Teteli*) tender leaves is given in painful menstruation. *Meyna laxiflora* Robyns. (Rubiaceae, *Kotkora*) pulp decoction is given for abortion. *Abutilon indicum* (L.) Sw. (Malvaceae) leaf infusion is given in abortion. Fruit infusion of *Averrhoa carambola* L. (Oxalidaceae, *Kordoi*) is prescribed once a day for 7 days in leucorrhoea. Flower infusion of *Bombax ceiba* L. (Bombacaceae, *Shimulu*) mixed with cow milk and sugar candy is given in sterility. Decoction of ripe seeds of *Carica papaya* L. (Caricaceae, *Amita*) is given to induce abortion.

Jaundice

Infusion of *Boerhaavia diffusa* L. (Nyctaginaceae, *Punornova*) — whole plant is taken orally in empty stomach in jaundice.

Kidney problems

Decoction of *Duranta plumeri* Jacq. (Verbenaceae, *Kol-Tara*) leaves and *Piper nigrum* (Piperaceae, *Jhaluk*) — fruits is taken orally to remove kidney stones. *Murraya koenigii* (L.) Spreng (Rutaceae, *Narashinga*) leaf infusion is taken orally in empty stomach in kidney pain.

Piles

Decoction of *Urena lobata* L. (Malvaceae, *Saun-Borial*) — aerial parts mixed with *Musa sapientum* L. (Musaceae, *Vim-Kal*) fruit and curd is given orally in empty stomach for 7 days. Infusion prepared from the bark of *Phyllanthus emblica* L. (Euphorbiaceae, *Amlakhi*) and *Avorrhoea carambola* L. (Oxalidaceae, *Kordoi*) in equal amount and mixed with ground rhizome of *Zingiber officinalae* Roscoe (Zingiberaceae, *Ada*) and curd is given orally in empty stomach. Decoction of *Paederia scandens* (Lour.) Merr. (Rubiaceae, *Bedhoi lota*) leaves is taken orally in empty stomach.

Rheumatism

Root paste of *Abrus precatorius* L. (Fabaceae, *Latumoni*) — is applied locally in rheumatism.

Skin disease

Paste of *Cyperus rotundus* L. (Cyperaceae, *Motha-Bon*) — aerial portion is applied in eczema. Leaf paste of *Cassia alata* L. (Caesalpinaceae, *Khar-Pat*) is applied in ringworm. Leaf paste of *Aristolochia indica* L. (Aristolochiaceae, *Nilkantha*) is applied locally in leucoderma. Leaf juice of *Leonurus sibiricus* L. (Lamiaceae, *Gorukhikae*) is taken orally and paste is applied locally in boils. *Phyllanthus dalbergioides* Wall. (Euphorbiaceae, *Chitika*) leaf paste is applied on skin during pox. Latex of stem and leaves of *Argyrea nervosa* (Burm.f.) Bojer (Convolvulaceae, *Thokuaguti*) is applied locally in boils. Leaf paste of *Leea acuminata* Wall. (Vitaceae, *Aatubhanga*) is applied locally to cure skin irritations and to prevent reddening. Paste of *Solanum nigrum* L. (Solanaceae, *Hativekuri*) young shoot is applied in skin disease like psoriasis.

Snakebite

Seeds juice of *Nerium oleander* L. (Apocynaceae, *Bogakorobi*) — is applied locally to prevent the infection caused due to snakebite.

Stomach disorder

Infusion of *Allium sativum* L. (Liliaceae, *Naharu*) — mixed with small amount of molasses is given orally once a day in flatulence. Infusion aerial portion of *Alternanthera sessilis* DC. (Amaranthaceae, *Mati-Khuri*) is given orally in stomachache. Juice of *Andrographis paniculata* Nees. (Acanthaceae, *Chirata*) whole plant is given orally in stomach troubles.

Toothache

Tender shoot of *Naravelia zeylanica* DC. (Ranunculaceae, *Gorap-Soi*) — is used as toothbrush in toothache. Bark paste of *Psidium guava* L. (Myrtaceae, *Madhuri*) is applied locally. Paste of *Cynodon dactylon* (L.) Pers. (Cyperaceae, *Dhuburibon*) tender shoots are applied in pyorrhoea. Root paste of *Citrus limon* (L.) Burm.f. (Rutaceae, *Jora-Tenga*) is applied in gum to cure pus cells.

Urinary disorder

Juice of aerial portion of *Tetracera scandens* (L.) Merr. (Dilleniaceae, *Ou-Lata*) — is given orally once a day in burning sensation during urination.

Discussion

A total of 61 plant species under 58 genera and 43 families covering 54 prescriptions and 19 diseases are reported in the paper. Many of the information reported particularly for *Averrhoa carambola*, *Bombax ceiba*, *Cyperus rotundus*, *Dioscorea alata*, *Phyllanthus dalbergioides*, *Solanum nigrum*, *Tamarindus indica*, *Tetracera scandens*, *Zizyphus mauritiana* are found to be less known in Indian medicinal plants literature^{5,8}. However, use of *Abrus precatorius*, *Allium sativum*, *Andrographis paniculata*, *Aristolochia bracteolata*, *Boerhaavia diffusa*, *Carica papaya*, *Cassia alata*, *Rosa chinensis* reported in the communication from the biosphere reserve are found to be similar to the uses by other ethnic people in Northeast India indicating the authenticity of their usefulness in the treated diseases⁹⁻¹². The tribal medicine men are generally found in each of the villages in this region. They generally collect plants from their surrounding plant communities and process the drug and preserve the

drug plants in their homestead gardens. *Alpinia galanga*, *Annona squamosa*, *Aristolochia indica*, *Cajanus Cajan*, *Carica papaya*, *Citrus Limon*, *Datura metel*, *Euphorbia ligularia*, *Paederia scandens*, *Phyllanthus emblica*, *Psidium guava*, *Spilanthes acmella* are some commonly found plant species of this category.

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