

ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS IN PHULBARI UPAZILA OF DINAJPUR DISTRICT, BANGLADESH

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Abstract

Ethnobotanical survey in Phulbari Upazila of Dinajpur district has revealed a total of 86 species used as medicinal plants by the Santal community. Santal names, part/s used as medicine and diseases to be treated with each plant have been presented. A number of threats to medicinal plants and their habitats have been identified and some measures have also been recommended for the conservation of medicinal plants and their habitats in the area.

Introduction

Phulbari Upazila belongs to Dinajpur district. It lies between 25°23' and 25°34' N latitude and 88°48' and 88°59' E longitude. The Upazila is bounded by Parbotipur and Shiribandar to the north, by Nawabganj to the east, by Birampur to the south and east and by India to the west. Total area of the Upazila is about 299.55 sq. km. The general topography of the Upazila may be described as flat, gently sloping southward and slightly elevated alluvial terrace known as Barind. Elevation ranges from 25 to 35 meters above mean sea level (Siddiqi 1972).

Once maximum area of the Upazila was occupied by an extensive Sal (*Shorea robusta* Gaertn.) forest interspersed with cultivated rice fields. Due to human settlement, agricultural encroachment and mining activities, the Sal forest of the area has been drastically reduced to small patches. In the small patches of the forest, *S. robusta* is the dominant species. Some other species associated with the Sal are *Careya arborea* (Kumbhi), *Anacardium occidentale* (Bela), *Cassia fistula* (Sonalu), *Albizia procera* (Koroi), *Syzygium fruticosum* (Butijam), *Syzygium operculatum* (Panijam), *Syzygium cumini* (Kalojam), *Flacourtia indica* (Paniala), *Randia dumetorum* (Monkanta), and *Litsae glutinosa* (Menda). Forest floor has been covered with seasonal vegetation including grasses, sedges, aroids, zingers, climbers, herbs etc.

Phulbaria Upazila is the abode for 1.3 million human population (Asiatic Society of Bangladesh 2003). Among this, 3.11% population belongs to Santal community They are living in the forest sites far from the Upazila headquarters. A major share of their food, medicine, house buildings materials and firewood come from the natural forest. These people have their own language and cultural tradition. They always like to keep away from the hub of modern civilization. Currently, their cultural tradition is threatened by

modern cultures all around them. They already started to convert to Christianity from Hinduism. They are losing their traditional knowledge day by day. Apart from this, mining activities and forest clearance around their home sites are other major threats to their traditional culture. Considering all these factors ethnobotanical survey of medicinal plants in Phulbari Upazila will require much time to complete. Otherwise we may lose important traditional Santal knowledge about plants before documentation.

Ethnobotanical work here in Bangladesh is in its initial stage. Some work, *e.g.* Hassan and Khan (1986), Mia and Huq (1988), Hassan and Khan (1996), Chowdhury *et al.* (1996), Alam *et al.* (1996), Uddin *et al.* (2001). Khan *et al.* (2002) and Uddin *et al.* (2004) are only a few to mention. The work on the ethnobotany of Santal community is lacking. That is why in the present survey an attempt has been made with the following objectives:

- 1) To identify the medicinal plants, their Santal names, parts used and diseases to be treated
- 2) To identify the threats to medicinal plants and their habitats
- 3) To make recommendation for conservation measures.

Materials and Methods

Phulbari Upazila of Dinajpur District was selected for the study and Santal community was considered as target community. All Santal villages in the Upazila were visited during the year of 2004 and 2005. Data of medicinal use of plants were collected through interview with local herbal practitioners (Kabiraj/ Boidya), headmen and elderly persons in the community using semi-structured questionnaire at different locations. Data collected from one person were verified with others by asking the same questions. Most of the medicinal plants were identified in the field and in case of unknown, plant specimens were collected. These specimens were brought to Dhaka University Herbarium and processed by traditional herbarium techniques. These were examined and identified by comparing herbarium specimens and also consulting literature. Threats to medicinal plants and their habitats were also noted from the field observations.

Results and discussion

A total of 86 medicinal plant species were recorded from the present survey work in Phulbari Upazila. These species are used by Santal community in different ailments. Botanical names, Santal names, parts used and diseases to be treated are presented in the Table 1.

Currently, coal mining, stone lifting and related developmental activities in Phulbari Upazila are great threats to medicinal plants and their habitats. Moreover, Santal community already started to convert themselves to Christianity. Missionary activities

gave them opportunity to go for modern medicine. It was found that many medicine men are reluctant to go back to Santal community and their traditional health care system. Forest clearance for exotic monoculture plantations in Phulbari Upazila is other threat to indigenous medicinal plants. Sal forest with associated species were replaced by *Acacia* spp. and *Eucalyptus* spp. plantations in different natural forest patches of the Upazila. Remaining Sal patches are in great risk because of fragmentation, edge effect, agricultural encroachment and developmental activities.

From the present observation in the Phulbari Upazila, we have come up with some recommendation measures for the conservation of medicinal plants and their habitat. Traditional Santal knowledge about the usage of medicinal plants should be properly recorded and documented. Apart from several threats some Sal patches of the Upazila still merit for *in situ* conservation. Otherwise *ex-situ* conservation sites including medicinal plant garden, protected area and eco-park should be established. Awareness about the importance of medicinal plants should be created among the local people, developers, energy companies and policy makers. Environmental impact assessment should be done before going to undertake any mining and developmental projects. Compensation measures should be ensured from companies for damaging the medicinal plants and their habitats.

Table 1. List of medicinal plants used by Santal community of Phulbari Upazila under Dinajpur district.

Scientific name	Santal name	Parts used	Diseases to be treated
<i>Achyranthes aspera</i> L.	Kakra lata	Root	Jaundice
<i>Aegle marmelose</i> Corr.	Singadare	Fruits	Laxative urinary diseases
<i>Agave Americana</i> L.	Kongak	Leaves	Ear lesion
<i>Albizia procera</i> Benth.	Koroi	Leaves	Allergy
<i>Alstonia scholaris</i> L.	Chatinidare	Bark	Aphrodisiac, Impotence
<i>Amaranthus spinosus</i> L.	Jenumara	Whole plant	Chest pain
<i>Amaranthus viridis</i> L.	Gandarehak	Whole plant	Vegetable
<i>Anacardium occidentale</i> L.	Shasho	Fruits	Mump, antiseptic
<i>Andrographis paniculata</i> (Burm.f.) Wall.	Chirata	Whole plant	Malarial fever
<i>Anisomeles indica</i> (L.)O. Kuntz	Kukurmuta	Fruits	Impotence
<i>Antidesma ghaesembila</i> Gaertn.	Chudumathasune	Leaves	Fever
<i>Azadirachta indica</i> A. Juss.	Neemdare	Leaves	Fever, malaria, lesion, abscess
<i>Biscofia javanica</i> Bl.	Mathasure	Leaves	Kidney diseases
<i>Bombax ceiba</i> L.	Edaldare	Root	Impotence
<i>Borreria articularis</i> (L.f.) Williams.	Mudmala	Leaves	Eye pain
<i>Caesalpinia crista</i> L.	Baghinjanum	Fruit,seed	Headache, color for fishing net
<i>Cardiospermum helicacavum</i> L.	Chatolature	Stem	Heart pain

Table 1. (Contd.)

<i>Caryea arborea</i> Roxb.	Kumbidare	Bark	Weakness
<i>Cassia fistula</i> L.	Neduic	Leaves, fruits	Ring worm, laxative
<i>Centella asiatica</i> Urban.	Dolbamon	Whole plant	Gastric
<i>Cissus adnata</i> Roxb.	Bodlar	Stem	Paralysis
<i>Clerodendrum viscosum</i> Vent.	Banni	Roots,leaves	Healing cut injury, fever
<i>Commelina bengalensis</i> L.	Jeotin	Root	Menstrual disorder
<i>Crinum asiaticum</i> L.	Birpiyaj	Root	Ringworm
<i>Curculigo orchioides</i> Gaertn.	Birparo	Root	Healing, cut injury
<i>Curcuma longa</i> L.	Shasang	Rhizome	Blood purifier
<i>Curcuma zedoaria</i> (Christm) Rosc.	Pado	Rhizom	Diarrhoea
<i>Cuscuta reflexa</i> Roxb.	Alakgudi	Wholeplant	Rheumatic fever, Lesion, Jaundice
<i>Cynodon dactylon</i> L.	Dubigass	Wholeplants	Healing cut injury
<i>Cyperus rotundus</i> Vahl.	Takudare	Root	Paralysis
<i>Dioscorea bulbifera</i> L.	Damru	Root	Fever, Krimi, vegetable
<i>Elephantopus escaber</i> L.	Ranurang	Roots	Abscess
<i>Erythrina veriegata</i> L.	Mararbaha	Flower	Waist Pain
<i>Eupatorium odoratum</i> L.	Randai	Leaves	Healing cut injury
<i>Euphorbia hirta</i> L.	Kushitoa	Whole plant	Head injury
<i>Euphorbia thymifolia</i> Burm. f.	Gutedare	Leaves	Waist pain
<i>Ficus racemosa</i> L.	Loa	Fruits	Krimi, Blood purifier
<i>Glochidion multiloculare</i> (Roxb. ex.Willd.) Muell.-Arg.	Kudurpala	Leaves,root	Diarrhea of cow
<i>Glycosmis pentaphylla</i> (Retz.) A. DC.	Atishadha	Stem	Jaundices, Tooth brush
<i>Holarrhena pubescens</i> (Buch.-Ham) Wall. ex. G. Don.	Hartdare	Bark	Diarrhoea, dysentery
<i>Hyptis suaveolens</i> (L.)Poit.	Kukurmuta (Sada)	Fruits	Impotence
<i>Indigofera tinctoria</i> L.	Nildare	Root	Ulcer
<i>Jatropha curcas</i> L.	Kuruzdare	Fruits	Lesion, ring worm
<i>Jatropha gossipyfolia</i> L.	Beddha	Leaves	Dysentery
<i>Lannea coromandelica</i> (Houtt.) Merr.	Dokadare	Bark	Diarrhea
<i>Leea macrophylla</i> Roxb.	Harmadare	Root	Healing cut injury
<i>Leportia crenulata</i> Gaud.	Sengelsingh	Root	Head ache
<i>Litsea glutinosa</i> (Lour.) C.B. Robinson	Maliata	Leaves,bark	Diarrhoea, dysentery, aphrodisiac
<i>Mallotus philippensis</i> (Lamk.) Muell.-Arg.	Ruda	Barks	Piles
<i>Mangifera indica</i> L.	Uldare	Bark,leaves	Diarrhoea
<i>Merrimia umbellata</i> (L.) Hallier.f.	Haruamar	Stem	Indigestion
<i>Mimosa pudica</i> L.	Japhi	Root	Impotence, aphrodisiac
<i>Mimosa rubricaulis</i> Lamk.	Kondrajenure	Root	Impotence, Menstrual disorder
<i>Moringa olifera</i> Lamk.	Munga	Bark	To refrain from snake

Table 1 (Contd.)

<i>Mucuna prurins</i> (L.) DC.	Bandoneri	Stem	Waist pain
<i>Murraya koenigii</i> Spreng	Jimtidare	Leaves	Menstrual disorder
<i>Ocimum sanctum</i> L.	Torshi	Leaves	Fever, bronchitis
<i>Oroxylum indicum</i> (L.) Kurz.	Banahata	Bark,fruit	Jaundice, cow diseases
<i>Persicaria hyropiper</i> (L.) Spach.	Jeoti	Root	Impotence
<i>Phyllanthus emblica</i> L.	Lodam	Fruits	Jaundice, diarrhoea
<i>Phyllanthus reticulatus</i> Poir	Simikdare	Stem	Tooth brush
<i>Pterospermum acerifolium</i> Willd.	Moskanda	Flower	Brain treatment
<i>Ricinus communis</i> L.	Araddom	Bark,fruit	Eye treatment
<i>Scoparia dulcis</i> L.	Sinipata	Leaves	Diarrhoea
<i>Senna accidentalis</i> (L.) Link.	Junjunea	Leaves	Diabetes
<i>Senna sophora</i> (L.) Link.	Bedatheri	Root	Lesion
<i>Senna tora</i> (L.) Roxb.	Sakamenda	Root	Indigestion
<i>Shorea robusta</i> Gaertn.	Sajamdare	Bark,root	Menstrual disorder
<i>Sida acuta</i> Burm. f.	Sipsedip	Leaf	Head ache
<i>Sida cordata</i> (Burm.f) Borss.	Japkhasakam	Leaf	Abscess
<i>Smilax zeylanica</i> L.	Katrupala	Root	Menstrual disorder
<i>Solanum nigrum</i> L.	Hedikudi	Leaves	Eye disease
<i>Solanum torvum</i> S.W.	Bengar	Fruits	Hopping Cough, ear rotten
<i>Stephania japonica</i> (Thunb.) Miers.	Tezomala	Stem	Jaundice, foot rot of cow
<i>Sterculia foetida</i> L.	Sekra	Bark, pellicles	Impotence, weakness, tonic
<i>Streblus asper</i> L.	Sharha	Bark	Pain, Diarrhoea
<i>Suregada multiflora</i> (A. Juss.) Baill.	Charchu	Fruit	Fish kill
<i>Terminalia arjuna</i> (Roxb. ex. DC.) Wt. and Arn.	Arjun	Barks	Heart diseases
<i>Terminalia bellerica</i> Roxb.	Lopung	Fruits	Menstrual disorder
<i>Terminalia chebula</i> Retz.	Rol	Fruits	Dysentery
<i>Trichosanthes bracteata</i> (Lamk.) Voigt.	Kahubutki	Root	Gastric paid
<i>Typhonium trilobatum</i> Schott.	Nirbish	Leaves	Constipation
<i>Urena lobata</i> L.	Bedijone	Root	Lesion
<i>Vernonia patula</i> Merrill.	Shandani	Root	Menstrual, disorder
<i>Zizyphus mauritiana</i> Lamk.	Jenumdare	Leaves	Headache
<i>Zizyphus xylopyrus</i> (Retz.)Willd.	Sekera	Bark	Constipation

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