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SOME LESS KNOWN ETHNOMEDICINAL USES OF PLANTS IN SUNDERBANS, INDIA

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ABSTRACT

More than 100 medicinal plants belonging to 63 genera and 42 families are found in the mangrove vegetation of Sunderbans, West Bengal, India. Several of these plant-species, e.g. *Avicennia marina, Bruguiera gymnorrhiza, B. parviflora, Ceriops decandra, Nipa fruticans*, etc., are restricted to the marshy deltaic estuary only. After prolonged field work, and comparison with the available published literature it is seen that medicinal uses of 43 species, and one variety such as *Aegialitis rotundifolia, Blumea wightiana, Ceropis decandra, Heliotropium curassavicum*, are practically unknown or less known.

The specimens of these species have been exhibited in crude drug museum of Pharmacognosy Section, Botanical Survey of India, Howrah.

INTRODUCTION

A great variety of plants from pteridophytes to angiosperms form the mangrove vegetation of Sunderbans a tropical humid evergreen type of forest, situated in the district of South 24-Parganas (20°- 30°N and 83°- 90°E), West Bengal. Out of 11,520 sq. km, about 4090 sq. km (i.e. *ca* 32%) forest area is under Indian administration and the rest 68% i.e., about 7424 sq. km is within Satkhira district (formerly Khulna) of Bangladesh. The approximate estuarine water coverage of Sunderbans is 2340 sq. km.

Much of the Sunderbans area is uninhabited. It is spread over the Gangetic delta where the process of land building is a regular feature. Tidal estuaries and creeks have fragmented the whole area into a large number of islands of various shapes and size.

Soil : The area is a low flat alluvial plane with clayey-loam and greyish black soil.

Climate : The climate of the region is moist and warm. Average temperature varies from 19°C 29°C from winter to summer months.

Classification of the vegetation : According to Mukherjee & Mukherjee (1978), vegetation of the Sunderbans is classified into (a) Sea-face beach forest (b) Formative-island flora (c) Flora of the reclaimed low lying cultivated tracts and (d) Swamp forests (tidal/mangroves). Besides these, there are some isolated small patches of planted vegetation of certain mangrove species. Gitting (1981) divided the forests of Sunderbans into three zones : (1) The fresh-water zone (2) Moderately salt-water zone, and (3) Salt-water zone without providing the range of salinity of the water.

The mangrove species exhibit unique adaptation to inundation of frequent tides and salinity, by developing succulent leaves, stilt roots, pneumatophores and vivipary.

Not only the plants but also the people like Bhumij, Munda, Oraon living on the periphery of the Sunderbans adapted themselves both physically and socially to the mangrove ecosystem. The aspect has drawn the attention of both anthropologists and ethnobotanists.

According to 1981 census the population including the tribals of Sunderbans area is more than 2 million. The region has recorded a very fast rate of population growth between 1971-1991. The projected population by 1990-1991 is about 3.6 million. The tribal and local people use the plants of Sunderbans in their daily life in a variety of ways, including house building, thatching, furniture, boat-making, and other material and cultural needs. This prompted the authors to take

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up ethnobotanical studies in the area, during the years 1984-1990. The study yielded good information on traditional knowledge system and on use of plants having therapeutic value. The method of study was same as adopted by Jain (1965).

The present paper deals with 43 plants with therapeutic uses which are not indicated in the works of Kirtikar and Basu (1935), Chopra *et al.* (1956, 1969), Akhtar Husain *et al.* (1992), Anonymous (1948-1976, 1985-1988), Naskar (1986), Banerjee, Sastry and Nayar (1989), Jain (1991), Jain *et al.* (1991), Chatterjee & Pakrashi (1991). For each species, its scientific name, family, local name, time of flowering & fruiting, locality, collection number followed by the uses recorded in the field are provided in the present paper.

All the plants are arranged alphabetically by their botanical names.

Acanthus ilicifolius L. (Acanthaceae) *Hargoza, Harkuch kanta.*

April - August. Sanokhali (Pharm. 746).

The root tied to white thread and worn by expectant mothers is believed to hasten child birth. Bhumij apply leaf-paste on forehead in acute headache and for rheumatism. Fruit-pulp is used as blood purifier (Banerjee, Sastry & Nayar, (1989).

A. volubilis Wall. (Acanthaceae) *Hargocha.*

April-August. Satjalia (Pharm. 14025).

Leaf-paste is applied on boils and for healing cuts and wounds.

Aegialitis rotundifolia Roxb. (Plumbaginaceae) *Bonruar, Satan.*

February-June. Basanti (Pharm. 1402).

Whole plant is used for family planning. The mode of use was not disclosed. Paste of the plant is applied to get relief from rheumatic pain.

Aegiceras corniculatum (L.) Blanco (Myrsinaceae) *Khalsi.*

January-August. Saginakhali (Pharm. 1413).

Decoction of leaves is used for washing septic wounds. Crushed plants are used as fish-poison. Ash obtained after burning the wood is used as "Soda" (detergent powder) for washing purposes.

Alternanthera paronychioides (L.) Hill. (Amaranthaceae) *Jalsachi.*

April-August. Canning (Pharm. 744).

Plant paste is applied on burns. The plants are also used as fodder for enhancing yield of milk.

Avicennia officinalis L. (Avicenniaceae) *Kala-bean.*

March-July. Pakhiala (Pharm. 1428).

Paste of hard wood used on scabies and small quantity of ash obtained after burning the wood is taken with water as antacid. The ash is also well known in Sunderbans as a detergent powder. It is a good charcoal producing plant. Flowers are source of honey.

Azima tetracantha Lamk. (Salvadoraceae) *Trikanta-gati.*

April-May. Basanti (Pharm. 749).

Seed paste is taken in colic pain. Crushed plants are used as fish-poison.

Blumea wightiana DC. (Asteraceae) *Jhapriphul.*

November-April. Rangabelia (Pharm. 1421).

Leaf-juice used as antiseptic and blood coagulator. The whole plant is applied as insect-repellent.

Brownlowia tersa (L.) Kosterm. (Tiliaceae) *Bolasundari.*

May- September.

Bark is used for family planning. Details on the method of use were not disclosed.

Bruguiera gymnorrhiza (L.) Lamk. (Rhizophoraceae) *Kankra.*

Throughout the year. Sunhanyakhali (Pharm. 1415).

Plant decoction is used in "Haza" (a kind of sore caused by mud and wet sand). It is also used for washing septic wounds. Fishermen use the bark

extract for colouring fishing nets to protect it against water.

Caesalpinia crista L. (Fabaceae) *Nata.*

August-April. Gosoba (Pharm. 1423).

Seed powder used in malarial fever. It is also used as an anthelmintic.

Cayratia trifolia (L.) Domin. (Vitaceae) *Amarlati.*

April-December. Basanti (Pharm. 765).

Leaf-decoction used for removing scars created due to pox. It is used for mouth-sores also. Crushed leaves used on ring-worm.

Cerbera manghas L. (Apocynaceae) *Dakur.*

March-August. Netadhopani (Pharm. 1432).

Milky latex is taken as purgative. Seed-oil is used in rheumatism. Banerjee *et al.* (*l.c.*) stated that the latex is applied on rherumatic pain.

Ceriops decandra (Griff.) Dingtton (Rhizophoraceae) *Goran.*

April-August. Sonakhali (Pharm. 1403).

Leaf-paste is applied on belly in dyspopsia for children. Juice of the leaves is given with common salt in 2 : 1 proportion for pain in abdomen after child-birth.

C. tagal (Pers.) C. E. Robins (Rhizophoraceae) *Goran.*

May-February. Sonakhali (Pharm. 1409).

Root decoction is used in black fever and dysentery. Stem-bark decoction is applied to stop bleeding from fresh cuts and for washing ulcers.

Banerjee *et al.* (*l.c.*) stated that stem bark decoction is used to stop haemorrage.

Clerodendrum inerme (L.) Gaertn. (Verbenaceae) *Banjoi.*

April-January. Basanti (Pharm. 756).

Leaf paste is applied on rheumatic swellings. Leaf juice is used for burning sensation.

Coix lachryma-jobi L. (Poaceae) *Gargaria.*

September - February. Sonakhali (Pharm. 770).

Seed powder applied on septic wounds. Powder is taken against stomach ulcers.

Derris scandens (Roxb.) Benth. (Fabaceae) *Noe-lata.*

June - September. Basanti (Pharm. 1401).

Root powder is used as arrow-poison and against snake bite. Crushed leaves are used for poisoning fish.

Eclipta prostrata (L.) L. (Asteraceae) *Kesudi, Brhingraj.*

August-February. Basanti (Pharm. 757).

Leaf-juice is used for kidney troubles and dropsy. Leaf paste is applied for promoting of hair growth in children.

Excoecaria agallocha L. (Euphorbiaceae) *Geoa.*

February - July. Basanti (Pharm. 747).

Seeds used in "Haza" (a kind of sore caused by wet sand in rainy season). Raw latex causes blisters on skin. Use of the twigs as tooth-brush causes loosening of teeth.

Banerjee *et al.* (*l.c.*) reported that the latex causes blindness.

Finlaysonia obovata Wall. (Asclepiadaceae) *Duhi-lata.*

October - March. Sonakhali (Pharm. 1404).

Banerjee *et al.* (*l.c.*) reported that paste of the plants is used on bone-fractures. It is also observed by the authors of this paper.

Heliotropium curasavicum L. (Boraginaceae) *Banhatisur.*

November-March. Kalinagar (Pharm. 1440).

Leaf-juice is used for jaundice. It is used for conjunctivitis also.

Heritiera fomes Buch.-Ham. (Sterculiaceae) *Sundari.*

May-August. Pakhiala (Pharm. 1438).

Seed-oil is used for piles.

Banerjee *et al.* (*l.c.*) also reported the same use.

Hygrophila auriculata (Schumach.) Heine (Acanthaceae) *Kulekhera.*

November-February. Gosaba (Pharm. 1407).

Leaf-paste is applied on skin diseases. Decoction of leaves is given for irregular menstruation. It is taken for swelling of the body.

Hygrophila phlomoides Nees (Acanthaceae) *Nile kulekhera.*

October-December. Canning (Pharm. 742).

Leaf-decoction is taken for dropsy. It is reported that the plant is used as blood-purifier.

H. phlomoides Nees var. **roxburghii** Clarke (Acanthaceae) *Pani-kulekhera.*

October-January. Canning (Pharm. 1411).

Root-paste is taken for labour-pains and child-birth. Decoction of leaves is used as anthelmintic.

Justicia gendarussa Burm. f. (Acanthaceae) *Jagatmadan.*

April-July. Canning (Pharm. 1405).

Roasted seeds are taken against kidney stone and seed-powder in tooth-ache.

Malachra capitata L. (Malvaceae) *Ban-bhondi.*

November - March. Canning (Pharm. 743).

Paste of the plant is applied on chest in cold and cough. It is applied on gum-boils to promote suppuration.

Nipa fruticans Wurmb. (Arecaceae) *Goalpata.*

May-September. Basirhat range (Pharm. 772).

Water in the immature fruits is used as eyedrop. Endocarp oil is used for healing wounds caused by tiger. Ash after burning the young leaves is used as antacid.

Paspalidium punctatum (Burm.) A. Camus (Poaceae) *Jalaghas.*

July-November. Canning (Pharm. 741).

Root paste applied on sores. Water in internodes used as eye drops.

Pedilanthus tithymaloides (L.) Poit. (Euphorbiaceae) *Sij.*

June-September. Matla (Pharm. 737).

Fomented leaves are used on rheumatic swellings. Roots are used in abortion.

Pentatropis capensis (L.f.) Bullock (Asclepiadaceae) *Dudhilata.*

March-September. Basanti (Pharm. 750).

Seed powder is used as snuff in cold and cough. Leaf paste is applied on forehead for headache. Latex is used for family planning. The details of the mode of application were not disclosed by the local people.

Phoenix paludosa Roxb. (Arecaceae) *Hital.*

April September. Netha Dhopani (Pharm. 1443).

A medicated oil prepared from the roots is used for snake-bite. Leaves are used for making mats.

Pithecellobium dulce (Roxb.) Benth. (Fabaceae) *Jalipi-jach, Bakra-tentul.*

January-July. Jatirampur (Pharm. 1417).

Stem-bark is used for preparation of medicine and decoction of the same is used for washing septic wounds. Root decoction is taken in malarial fever.

Pluchea indica L. (Asteraceae) *Ban-kapi-phul.*

September-December. Canning (Pharm. 730).

Plant-paste is taken for dysentery. Leave-paste is used in guineaworm.

Salvinia auriculata Arbhot (Salviniaceae) *Bilati pana.*

May-November. Canning (Pharm. 740).

Plant paste is used for fever. Leaf paste with that of ginger in 2 : 1 ratio, is used on septic wounds.

Sarcolobus globosus Wall. (Asclepiadaceae) *Baoli-lata.*

June-October. Netadhopani (Pharm. 1446).

Stem-pieces are used as amulate in dropsy.

Sesuvium portulacastrum L. (Aizoaceae) *Nunia.*

November - January. Canning (Pharm. 1406).

Plant-paste is applied on burns and wounds. Leaf paste is taken in gonorrhoea.

Solanum trifoliatum L. (Solanaceae) *Zit-kantikuri.*

All the year round. Nazat (Pharm. 1435).

Paste of berries and flowers is used against cold and cough. Plant decoction is used in chronic bronchitis and root-paste as antipox. Paste of the ripe fruits is applied on eczema.

Sonneratia apetala Buch.-Ham. (Sonneratiaceae) *Kero.*

March - July. Saginakhali (Pharm. 1412).

Fruit-juice is used for hysteria. Leaf-paste is applied on cuts and wounds. Fruits are eaten both raw and cooked.

Suaeda maritima (L.) Dumort. (Chenopodiaceae) *Muniagash.*

May - July. Canning (Pharm. 788).

Young twigs are good laxative. Cooked plants are eaten at the time of scarcity.

Tinospora cordifolia (Willd.) Hook.f. & Thoms. (Menispermaceae) *Gulancha.*

August - January. Basanti (Pharm. 752).

Paste of the plant is used for herpes. Decoction of the stems is given for malarial fever. It is used with ginger, in 2 : 1 ratio for venereal diseases. In recent years it has been used as antihepatic drug.

Utricularia aurea Lour. (Lentibulariaceae) *Jal-jhanji.*

November - February. Canning (Pharms. 739).

Paste of the bladders is used for amoebic dysentery.

Xylocarpus granatum Koen. (Meliaceae) *Dhundul.*

Throughout the year. Netadhupani (Pharm. 767).

Seed-oil is used to promote growth of hair and in rheumatism.

Banerjee *et al.* (*l.c.*) stated that the oil is used in breast tumour.

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