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## Ethno-botanical uses of coastal sand dune plants of West Bengal

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### ABSTRACT

The ethnobotanical uses of 52 plant species occurring on sand dune of coastal West Bengal from East Medinipur district to Talsari of Odisha have been described in this paper. Botanical name, family and medicinal uses have provided for each species.

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Coastal sand dunes are the natural structures which protect the coastal environment by absorbing energy from wind, tide and wave action (Corre, 1991) and play a vital role in protecting the coast from erosion and flooding (Desai, 2000). Dune vegetation has immense ecological and economic significance (Banerjee, 1994). It provides a range of ecological services including stabilization of shoreline, protection of hinterland from natural hazards, eco-tourism and contribute to the livelihood of local people by providing a wide varieties of useful plants having medicinal and food values.

The coastal belt of West Bengal is rich in plant resources, which harbour many economic and medicinal plant species. The local communities along the coastal belt depend upon these resources for their livelihood and utilize many plants for food, timber, fibre, fuel and medicine. Over-exploitation of coastal plant species for fuel, fodder, house construction, medicine etc. has resulted in loss of plant diversity including those of rare, endangered and threatened plants. The traditional knowledge possessed by the local inhabitants on medicinal values of plants need to be documented to make people aware of their economic importance to facilitate conservation and sustainable

utilization of these valuable resources. The present paper reports the ethnobotanical uses of 52 such plant species occurring in the sand dunes along the coastal belt of Purba Medinipur, West Bengal.

The study was carried out along 76 km coastal belt of Bay of Bengal from the East (Purba) Medinipur district of West Bengal to Talsari of Odisha coast. The study area lies between 21°36'22" N and 19°48'02" N latitudes and 85°52'40" E to 87°37'02" E longitudes. Plant samples were collected and enumerated by laying random quadrates of 10m X 10m sizes at different distances from the high tide mark. Information on medicinal uses of plant species were collected during August, 2008 to December 2012 from different ethnic groups, traditional healers, Ayurvedic practitioners and others through interaction and discussions. The botanical names, family and ethno-botanical uses of 52 species of plants belonging to 50 genera and 31 families collected from coastal sand dunes of West Bengal coast are presented in Table-1.

Arun *et al.* (1999) enumerated 154 species of plants occurring in Indian coastal sand dunes belonging to 108 genera and 41 families, of which medicinal uses of 52 species

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Table 1  
Enumeration of medicinal plants and their traditional uses along the coast of West Bengal

Botanical name	Family	Uses
<i>Acanthus ilicifolius</i> L.	Acanthaceae	Plant parts like leaves are used in rheumatism and asthma.
<i>Achyranthes aspera</i> L.	Amaranthaceae	Plant decoction is used as an emmenagogue, in piles and skin eruptions.
<i>Ageratum conyzoides</i> L.	Asteraceae	Herb infusion is given in stomach ailments such as diarrhoea, dysentery and intestinal colic with flatulence.
<i>Alternanthera sessilis</i> R. Br.	Amaranthaceae	It is used for indigestion, burning sensation, diarrhoea and fever and also used as leafy vegetables.
<i>Anacardium occidentale</i> L.	Anacardiaceae	Bark and leaves infusion is used to relief from toothache and sore gums. Roasted and raw kernels are eaten as a desert, employed in confectionery and are highly nutritious.
<i>Argemone maxicana</i> L.	Papaveraceae	Leaves are useful in cough and skin diseases. Roots are useful in guinea worm infection, skin disease and leprosy.
<i>Azadirachta indica</i> A.Juss	Meliaceae	Flowers are fried and eaten. The oil extracted from flowers, fruits, seeds keeps skin clean and protect from infection also acts as mosquito repellent.
<i>Barringtonia acutangula</i> Gaertn.	Barringtoniaceae	Fruit is bitter, anthelmintic, astringent. Leaf juice is given in diarrhoea.
<i>Borassus flabellifer</i> L.	Arecaceae	Root is diuretic and anthelmintic. Fruits are used in dyspepsia, flatulence, colic and skin diseases.
<i>Caesalpinia bonduc</i> (L.) Roxb.	Caesalpiniaceae	Leaf paste is applied on swollen testicles; useful against jaundice and rheumatism.
<i>Calophyllum inophyllum</i> L.	Clusiaceae	Seed oil is used as a stimulant embrocating in rheumatism and gout; Oil cures scabies and other cutaneous disease. Stem bark is astringent.
<i>Calotropis gigantea</i> (Linn.) R. Br. ex Ait.	Asclepiadaceae	Root bark is diaphoretic and expectorant; acts as a night stimulant. Powdered root bark gives release diarrhoea and dysentery.
<i>Canavalia maritima</i> (Aubl.) Thou.	Fabaceae	Young pods and seeds are used as vegetables.
<i>Cassia occidentalis</i> L.	Caesalpiniaceae	Whole plant has purgative, febrifuge and diuretic properties; plant decoction is used in sores, dysentery and stomach troubles.
<i>Casuarina equisetifolia</i> L.	Casuarinaceae	Bark is a tonic and astringent, useful in diarrhoea and dysentery.
<i>Catharanthus roseus</i> L.	Apocynaceae	Whole plant body has important medicinal property including tie treatment of cancer, fever etc.
<i>Cissus quadrangularis</i> L.	Vitaceae	Stem and root paste is used in bone fractures.
<i>Citrullus colocynthis</i> L.	Cucurbitaceae	Commonly known as bitter cucumber to the local people, fruits and roots are useful in kidney infection, jaundice etc.
<i>Clerodendrum inerme</i> (L.) Gaertn.	Verbenaceae	Fresh and dry leaves possess alternative and febrifugal properties. Root boiled in coconut oil is useful in rheumatism.
<i>Cocos nucifera</i> L.	Arecaceae	Roots are astringent and diuretic. Juice of young fresh spadix is intoxicating; useful in dyspepsia and diarrhoeas and leprosy. Fresh unripe fruit pulp is diuretic.

<i>Crotalaria retusa</i> L.	Fabaceae	Root powder mixed with spices used as a remedy for colic. leaves is used in fevers
<i>Croton bonplandianum</i> Baill.	Euphorbiaceae	Leaves are useful in skin diseases and wounds.
<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Plant decoction is diuretic; useful in dropsy and anasarca.
<i>Cyperus rotundus</i> L.	Cyperaceae	The root extract oil instilled into eyes in conjunctivitis reduces the pain, redness and ocular discharges.
<i>Eragrostis viscosa</i> Retz.	Poaceae	Used as livestock fodder.
<i>Evolvulus alsinoides</i> (L.) L.	Convolvulaceae	Herb is used to cure dysentery, chronic bronchitis, fever, hiccups and jaundice and as antiseptic.
<i>Gisekia pharnaceoides</i> L.	Aizoaceae	Leaves and roots are useful for skin infection and stomach ache.
<i>Hemidesmus indicas</i> (L.) R. Br.	Asclepiadaceae	Root and black pepper paste is used in stomach pain and diarrhoea.
<i>Ipomoea aquatica</i> L.	Convolvulaceae	Leaves are eaten as vegetables with high food value.
<i>Ipomoea pes-caprae</i> (L.) R. Br.	Convolvulaceae	It is a sand binder; leaves and roots are useful for gonorrhoea, rheumatism, skin infection and stomach ache.
<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Roots are used for leprosy; bark decoction as emmenagogue; leaves to cure stomach ache, venereal diseases and as blood purifier.
<i>Kyllinga triceps</i> Roth.	Cyperaceae	The juice of the leaves is used in the skin injury by the ethnic races.
<i>Lantana camara</i> L.	Verbenaceae	Invasive species of this particular zone.
<i>Launaea sarmentosa</i> (Willd.) Schult-Bip. ex O. Kuntze	Asteraceae	Good sand binder and plant juice is applied for the treatment of rheumatism.
<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Leaf juice is used for chronic skin eruptions and painful swellings.
<i>Mimosa pudica</i> L.	Mimosaceae	Root paste in the water collected after washing the raw rice is given orally for the snake bite. Leaf paste is applied to glandular swellings.
<i>Opuntia stricta</i> (Haw.) Haw.	Cactaceae	Baked fruit is given for whooping cough.
<i>Pandanus fascicularis</i> Lam.	Pandanaceae	Flowers are used in perfumes. Leaves are useful in making mats and baskets.
<i>Pedaliium murex</i> L.	Pedaliaceae	The mucilaginous infusion formed from leaves, fruits or seeds in water or milk is used in the treatment of urino-genital diseases such as Gonorrhoea, dysuria etc.
<i>Phoenix paludosa</i> (L.) Roxb.	Arecaceae	Fruits are edible. Popularly used as thatching material and in fencing.
<i>Phoenix sylvestris</i> (L.) Roxb.	Arecaceae	Dried leaves are used as brooms. Fruits are eaten after ripening. It is also used in fencing.
<i>Phyla nudiflora</i> (L.) Greene.	Verbenaceae	Fresh plant paste or poultice is applied as sappurent for boils, swollen cervical glands and chronic indolent ulcers.
<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae	Dried flowers decoction is given to diabetics, seed oil in scabies, leucoderma.
<i>Prosopis juliflora</i> (Swartz.) DC.	Mimosaceae	The leaves having insecticidal effect.

<i>Ricinus communis</i> L.	Euphorbiaceae	Seed oil gel is useful in dermatitis; protective in occupational eczemas and dermatitis.
<i>Saccharum spontaneum</i> L.	Poaceae	Grass is used as fodder; also used for thatching and for making ropes.
<i>Salicornia brachiata</i> Roxb.	Chenopodiaceae	Leaves and young shoots are eaten.
<i>Salvadora persica</i> L.	Salvadoraceae	Plants are used for making salads and are often taken as fried snacks with rice.
<i>Tamarix troupii</i> Hole	Tamaricaceae	Used as remedy of ulcer.
<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	Excellent medicine for eczema when applied with turmeric.
<i>Tephrosia villosa</i> (L.) Pers.	Fabaceae	Root paste and powder is effective for brushing the teeth and also applied for the relief of pain of Scrotum.
<i>Thespesia populnea</i> (L.) Soland ex. Corr.	Malvaceae	Roots are used for relief from Cholera and dysentery.

have been dealt in this paper. The economic value of sand dune plants as potential source of food, fodder and pharmaceuticals have been highlighted by Sridhar and Bhagya (2007). The sand dune species of costal West Bengal are extremely important resources, which play a vital role in the economic and social life of local inhabitants. Conservation and judicious utilization of the costal plant wealth, which have been degraded considerably due to over-exploitation, clearing of forest for industrialization, rapid urbanization, pisciculture and human settlements have been suggested. Besides, it is essential to undertake detailed phytochemical investigation to validate ethno- botanical knowledge possessed by the local people.

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