

Traditional Halophytic Medicine: A New Era in the Health Care Canvas



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Submission: April 13, 2017; Published: April 17, 2017

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Editorial

Medicinal properties of mangroves receive little press coverage and public attention although it is one of the most important ecosystem services offered by this unique group of

halophytes, which grow at the land-sea interface. Mangroves provide a wide spectrum of direct and indirect ecosystem services (Tables 1 & 2).

Table 1:

Fuel	Mangrove trees are the sources of firewood for cooking, heating and burning bricks; charcoal and alcohol are also obtained from mangrove vegetation.
Construction	Mangroves are the sources of timber for boat building, dock pilings, fence, posts, chipboards and flooring and paneling, beams and poles for building; The leaves of <i>Nypa</i> are used for thatching the houses.
Fishing	Mangrove trees can be used to make poles for fish traps, fishing floats, etc.
Textiles	Mangroves are the sources of dye for cloth, and tannin for leather preservation.
Food, Drugs and Beverages	Mangroves can be used for extracting sugar, alcohol, cooking oil, vinegar, medicines from bark, leaves and fruits, tea substitute, fermented drinks, etc.
Household items	Mangrove wood can be used for making furniture, glue, hair dressing oil, tool handlers, rice mortars, toys, matchsticks and incense.
Agriculture	Mangrove leaves are used as fodder and green manure. The cyanobacterial strains present on the forest floor of mangrove ecosystems are important source of biofertilizer.
Paper products	Mangrove trees can be used for making paper and packing boxes.

Table 2: Indirect services of mangroves.

Food
Mangrove forests serve as the nursery ground for fishes, prawns, shrimps, crabs, oysters, mussels and cockles which are the important food items for the local population.
Extracts
Mangrove forests are the housing complexes for bees, birds, mammals, reptiles, from which honey, wax, food, etc. are obtained. The molluscan species in the mangrove ecosystem are the sources of lime.
Recreational activities
The mangrove ecosystem can be used for several purposes such as power boating, canoeing, fishing, collecting molluscs and crustaceans, picnic spots, swimming, birdwatching, wildlife observation, photography, nature education and tourism

The medicinal properties of mangroves are mostly used by the local inhabitants in the remote areas of Sundarbans (21°13'N to 22°40'N and 88°03'E to 89°07'E), which is the home land of Royal Bengal Tiger (*Panthera tigris tigris*). The region sustains some 34 mangrove floral species. The bark, leaves and fruit extracts of mangrove are used to cure snake bites, stomach problems, fracture of bones etc. (Table 3).

Table 3: Medicinal uses of mangrove flora.

Scientific name	Local name	Family	Medicinal uses
<i>Acanthus ilicifolius</i>	Hargoja	Acanthaceae	The crushed fruits make a good blood purifier and dressing for boils and snake bites.
<i>Acanthus volubilis</i>	Lata hargoja	Acanthaceae	The leaf extracts are applied to cure bone fractures
<i>Avicennia alba</i>	Peara bain	Avicenniaceae	Pastes of seeds are used to cure small pox ulceration.
<i>Avicennia marina</i>	Kalo bain	Avicenniaceae	
<i>Avicennia officinalis</i>	Sada bain	Avicenniaceae	
<i>Excoecaria agallocha</i>	Genwa	Euphorbiaceae	Heart wood and pneumatophores give scent, but latex causes blindness
<i>Heritiera fomes</i>	Sundari	Sterculiaceae	Root extracts are used to lower down the sugar level
<i>Sonneratia apetala</i>	Keora	Sonneratiaceae	Fruits are rich in vitamin C and used by the local people to prepare juice, curry etc.
<i>Sonneratia caseolaris</i>	Ora	Sonneratiaceae	
<i>Xylocarpus granatum</i>	Dhundul	Meliaceae	Bark extracts used to cure dysentery and diarrhoea.
<i>Xylocarpus mekongensis</i>	Passur	Meliaceae	

The policy makers, foresters and researchers are mostly interested in various ecosystem services of mangroves like

erosion control, protection from tidal surges, provisioning of timber, fuel, woods, wax, honey etc. Plenty of literatures highlighting the provisioning services of mangroves are available [1-4] where there is no mention of medicinal properties. Dr. Abhijit Mitra (the second author of this paper) personally knows a young researcher in 1994, Mr. Begun Kumar Bay (imaginative name) initiated to make poisonous weapon with dried latex of *Excoecaria agallocha*, but had to withdraw his research under the pressure of a faculty Gubojyoti Chatti (an imaginative character). However, it is a fact that the latex of *Excoecaria agallocha* causes permanent blindness (Figure 1). How many newspaper editors keep this information?



Figure 1: Latex of *Excoecaria agallocha* causes permanent blindness.



Figure 2: Fruits of *Sonneratia apetala* – highly rich in Vitamin C.

We made a sample survey in Indian Sundarbans on the traditional medicinal values of mangroves considering 5 categories of respondents i) forester ii) fisherman ii) quack doctor iv) researcher and v) local inhabitant, and surprised to find that educated researcher and forester have less idea about the halophytic medicine (using the product of ranking and % of voting as proxy) compared to poor fisherman, quack doctors and local inhabitants of the islands of Sundarbans. In the absence of modern medicinal facilities and hospital in the islands, people are depending on mangroves for their health care. Rarely people of the islands suffers cough and cold because of taking the extract of *Sonneratia apetala* (locally called Keora) fruits that are rich in vitamin C (Figure 2). From this traditional knowledge, Prosenjit Pramanick, a research scholar of Techno India University, West Bengal made cookies, biscuits etc. from this fruit extract.

This research has not seen the light of publicity, nor it has been highlighted in any TV show. This is the fate of traditional knowledge, which is today superimposed by the artificial chemical products manufactured by big business houses. We believe that public awareness and education are important tools to float the medicinal property and traditional knowledge of the rural people on the surface of society. The ripples created by such floats will gradually get the momentum of business houses and finally may hit the desks of policy makers, when mangrove floral parts may be used as sources of alternative medicine or may be a new chapter in the canvas of organic health care.



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DOI: [10.19080/OMCIJ.2017.02.555584](https://doi.org/10.19080/OMCIJ.2017.02.555584)

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