

# MANGROVE ECOSYSTEMS

**A MANUAL FOR THE ASSESSMENT  
OF BIODIVERSITY**

**A follow up of the  
National Agricultural Technology Project  
(NATP.), ICAR.**

*Mangrove Ecosystem Biodiversity :  
Its Influence on the Natural Recruitment of  
Selected Commercially Important Finfish and Shellfish  
Species in Fisheries*

*Edited by :*  
**Dr. George J. Parayannilam**



**Central Marine Fisheries Research Institute**  
(Indian Council of Agricultural Research)  
P.B. No. 1603, Ernakulam North P.O; Cochin – 682 018, Kerala, India













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## **A Manual for the Assessment of Biodiversity**

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## Development of Herbarium for Mangroves

P. Kaladharan and P. K. Jayasurya

Mangroves are salt tolerant succulent plants. The main constraint in developing a herbarium of mangrove species is defoliation i.e., withering of leaves from the stem during pressing. This can be overcome by using proper fixatives.

### Procedure

Select a healthy twig of mangrove species bearing not less than five leaves and flower and or fruit. Cut the selected twig, tie a tag bearing specific number, put it in a polythene cover. Add 15 to 20 ml of fixative (described at the end) so as to soak the entire twig. Mix them thoroughly and store air-tight. Details such as name of the plant, location, latitude, longitude, habitat, habital etc. can be written in a field diary against each tag number.

In the laboratory the fixed samples spread on a blotting paper or ordinary newspaper to absorb moisture. Keep one of the leaves showing the ventral surface while others show the dorsal view. Cover it with another sheet of paper and keep it under a Herbarium Press. The herbarium press is made of two

wooden plants (50 x 60 cm) bolted together with wing-nuts on four corners so that twigs wrapped with absorbent paper can be pressed tightly with the wooden planks on either side. The absorbent papers have to be changed frequently to hasten drying.

The press-dried twig is pasted on a white herbarium sheet made of thick paper or thin white board (A3 size) at the centre. Right corner of the herbarium sheet should contain the details of the specimen recorded in the field.

The fixative solution is prepared by mixing the following ingredients and stored airtight

Ethanol	-	500 ml
Water	-	300 ml
Formaldehyde	-	100 ml
Acetic acid	-	50 ml

The advantages of the fixative are :

Prevents withering of foliage and protects the specimen from fungi.



# MANGROVES

Unique Ecosystem with rich Biodiversity,

a National Wealth



**1. Mangrove during High Tide.**

**3. *Xylocarpus granatum* with fruit -Largest Mangrove fruit.**

**5. *Acanthus ilicifolius* with flower.**



**2. Typical Mangrove Plants. *Rhizophora mucronata* in the middle flanked by *Rhizophora apiculata***

**4. *Pandanus* with fruit- Leaves for mat fabrication.**