

**PRELIMINARY STUDY OF MICROBIAL DISTRIBUTION IN
MANGROVE ECOSYSTEM AT MATTIKALLY ARU IN
THE BATTICALOA DISTRICT.**

U.Uthayasrither S.J.Arasanili, T.Jayasingam

Department Of Botany, Faculty of Science

The microbial diversity of the ecosystem of mangrove area was studied in order to ascertain their role in this ecosystem for a period of five months from June to October 2000.

Microorganisms (Photoautotrophs, chemolithotrophs, chemoorganotrophs, Organotrophs and Enterobacteriaceaea) were isolated from soil or mud, water and plant litters by enrichment media techniques. The isolated Photosynthetic bacteria contained green sulphur bacteria. Identified chemolithotrophs were *Thiobacillus*, *T.denitrificans*. Chemoorganotropic bacteria identified were *Pseudomonas*, *Desulfovibrio* and *Methanobacterium omelianskii*. Identified Organotrophic bacteria were *Bacillus spp*, alkali-tolerant urea decomposing *Bacillus*, lactic acid bacteria, H₂S producing bacteria and *Streptococcus*. Enterobacteriaceaea identified were *Escherichia coli* *Salmonella* and *Klebsilla*.

There was clustering of the above species noted in the entire study area. However, the Organotrophs, Enterobacteriaceaea and chemoorganotrophs were mainly isolated from the shore of lagoon. The green sulphur bacteria were isolated from all water samples collected from each

location. The highest species diversity was recorded in the third month compared to the other months.

The saprophytic fungi were isolated from mangrove litters and soil of mangrove ecosystem. Ten genus of sporulating mesophilous fungi and two species of yeast were isolated from the mangrove ecosystem of Mattikally Aru. Among them were *Rhizopus* genus belonging to Zygomycetes and *Trichoderma*, *Aspergillus*, *Monilia*, *Paecilomyces*, *Penicillium*, *Acremonium*, *Stachybotrys* and *Helminthosporium* genus belonging to Hypomycetes. The genus *Rhizopus*, *Aspergillus*, *Penicillium*, *Monilia* and *Acremonium* were present in large numbers in the soil of mangrove area.

The abundance of Organotrophic, chemoorganotrophic and chemolithotrophic bacteria and saprophytic fungi suggests that they play a significant role in contributing to the nutrient recycling in the mangrove ecosystem with high nutrient turnover.