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Title

Microbial Biodiversity in Sediment of Sundarban Mangrove Area

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Abstract

Sundarban Mangrove forest sediment harbors large and diverse group microorganisms, which include archaeobacteria, eubacteria, cyanobacteria, algae and fungi. This ecosystem encompasses over 102 islands in the Indian side. Studies on microbiological status of sediments show that halophilic archaeobacteria like *Halosarcina*, *Halorientalis*, *Halolamina*, *Halorussus*, *Halogranum*, *Haloferax*, *Haloplanus* etc. and methanogens like *Methanosarcina*, *Methanococcoides*, *Methanosalsum*, *Methanogenium*, *Methanosaeta*, etc. are very common including the hyperthermophiles like *Thaumarchaeota* and *Thermoplasmatales*. A number of species under *Acidobacteria*, *Actinobacteria*, *Planctomycetes*, *Bacteroidetes* (CFB), *Firmicutes*, *Chloroflexi* groups, *Gemmatimonadetes* are predominant. On the other hand, due to the accumulation of organic pollutants, excess growth of *Oscillatoria*, *Lyptolyngbya*, *Phormidium* of cyanobacteria and *Oedogonium* and *Ulothrix* like filamentous algae cause eutrophication too. Among the filamentous fungi *Aspergillus* and *Penicillium* show their common occurrence as decomposers. Apart from their variety of environmental functions, all of these microbes play the direct role in mangrove ecosystem, biogeochemical cycle and in foodweb.