

Studies on Sulphate reducing bacteria from Southeast coast of India

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Abstract

A striking feature in mangroves ecosystem is a large anaerobic substratum enriched with anaerobic microorganisms predominantly sulphate reducing bacteria. However, research studies on the role of sulphate reducing bacteria in the functioning of mangrove ecosystem are only scanty. Therefore the present work was undertaken to study occurrence and distribution of sulphate reducing bacteria in luxuriant or degrading mangroves at 10 different sediment depths for four seasons. Sediment soil samples were collected from Pichavaram mangrove forest situated along the southeast coast of India and inoculated in specific Postgate's B liquid medium, prepared completely in anaerobic condition. The sulphate reducing bacteria were enumerated by serial dilution method, after incubation up to 2 to 3 weeks. The results revealed that the sulphate reducing bacterial counts started increasing from 30 cm depth; the counts were higher during post monsoon and summer and lower in pre-monsoon and monsoon. The bacterial counts were higher in luxuriant mangroves than that in degrading stands. The role of sulphate reducing bacteria in mangrove functioning is discussed. The presence of sulphides is a characteristic feature of mangrove sediments and it influences the distribution of mangroves. Tolerance to sulphides varies with mangrove species.

Keywords

sulphate reducing bacteria, ecosystem function, seasonal influence