

# **Use of plant growth promoting bacteria to enhance survival and growth performance of plantation in mangrove afforestation and restoration**

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## **Abstract**

Mangrove plants in a large tract of mangrove areas in India exhibit stunted growth. Even artificial plantations of the mangroves also exhibit poor performance and productivity. One of the problems with the conservation of mangroves is lack of knowledge about the beneficial microbes that are involved in establishment of mangrove seedlings. Microbes may play vital role in supplying nutrients in utilizable forms from soil to the plants. The important functions of the microbes are in nitrogen fixation, phosphate solubilization and plant growth hormone synthesis, which are essential for better colonization of mangroves. Such beneficial marine microbes in mangroves have been largely unexplored, except cyanobacteria. Therefore, it is extremely vital to understand the microbial ecology of mangroves for better mangrove afforestation and restoration programmes. Such microbial intervention has already been successfully demonstrated in our country for other plant species and there has been serious effort made in this aspect. Therefore, the present study was undertaken of current importance. The research work attempted in selection of plant growth promoting microorganisms specific to mangroves and developed technology for the growth improvement through microbial supplementation and demonstrated the techniques in the field for replication by other agencies.

## **Keywords**

plant growth promoting bacteria, mangrove afforestation and restoration, nitrogen fixers, phosphate solubilisers