## MICROBES IN HUMAN WELFARE MICROBES AS BIOFERTILISERS

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## **Biofertilizers**

Biofertilizers are organisms that enrich the nutrient quality (N.P) of the soil. The main sources of biofertilizers are bacteria fungi and cyanobacteria.

## Bacteria

Rhizobium (symbiotic bacteria) fix atmospheric nitrogen into organic forms which is used by the plant as nutrient.

Other bacteria like Az spirillum and Azotobacter can fix atmospheric nitrogen while free-living in the soil thus enriching the nitrogen content of the soil.

Fungi an also known to form symbiotic associations with plants (mycorrhiza). Many members of the genus Glomus form mycorrhiza.

Fungal symbiont in these associations absorbs phosphorus from soil and passes it to the plant. Also provide resistance to root-borne pathogens tolerance to salinity and drought and cause an overall increase in plant growth and development.

Cyanobacteria are autotrophic microbes widely distributed in aquatic and terrestrial environments many of which can fix atmospheric nitrogen. (e.g. Anabaena. Nostoc. Oscillatoria. etc.)

In paddy fields. cyanobacteria serve as an important biofertiliser. Blue green algae also add organic matter to the soil and increase its fertility.

Biofertilizers are a low-cost input and they do not pollute the environment. They are use to replenish soil nutrients. They also reduce the dependence on chemical fertilizers and also help to use organic farming.

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