

Bacterial mixture for Plant Growth

Why in News?

In a recent study published in the journal Environmental Technology and Innovation, researchers have used the power of specific bacterial species to remove organic pollutants from soil.

- **Bacterial mixture** - Species from the genera *Pseudomonas* and *Acinetobacter*, were good at breaking down aromatic compounds in contaminated soil and thereby improving soil and plant health.
- **Need** - Soil contaminants are toxic, can inhibit seed germination, reduce plant growth, yield and also accumulate in seeds and plant biomass.
- **Working** - They break down pollutants into simpler, harmless, non-toxic compounds.
- **Recover soil health** - They fertilise the soil and improve soil health.
- **Inhibit fungi** - They produce substances like lytic enzymes and HCN (hydrogen cyanide) that can kill or inhibit the growth of plant pathogenic fungi.
- These bacteria are eco-friendly and target only the harmful fungi

*Despite the use of fungicides & disease-resistant cultivars, fungal infections still cause **global crop losses of 10-23% annually**, with key calorie crops in India, like rice and wheat, particularly affected.*

- **Make nutrients accessible to plants** - They convert insoluble form of essential nutrients like phosphorus and potassium, into soluble forms and make them readily available to the plants.
- They produce siderophores, which help plants absorb iron in nutrient-limited environments.
- **Improves plant growth & health** - They produce high amount of growth hormone called indoleacetic acid (IAA).
- **Boosts yield** - They significantly boost the growth and yield of crops (wheat, mung bean, spinach, fenugreek, etc.) up to 45-50%.



Reference

[The Hindu| Bacterial Mixture for Plant Growth in Contaminated Soil.](#)

