



Guide to the Effective Use of Biofertilisers

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Biofertilisers are living microorganisms that enhance soil fertility and plant growth by increasing the availability of essential nutrients. When used correctly, they can improve soil health, boost crop yields, and reduce dependence on chemical fertilisers¹⁵⁹. Below is a step-by-step guide to their effective use.

Understand Your Soil and Crop Needs

- Conduct a detailed soil test to determine nutrient levels, pH, and organic matter content.
 - Experiment with a small area first and compare what happens. Talk with people who have tried it.
 - Research different approaches with different organisations from across the world to build your knowledge. There are lots of great sources – Soil CRC's, SoilsforLife, Vic No-till and Landcare groups etc.
 - If you can undertake a Soil DNA test you should get a better picture of the microbial ecosystem below your feet. Get in touch if you would like to find out more
 - Understand the active ingredients in any commercial products. Do your research and understand if they are compatible with other fertilisers or chemicals
 - Identify specific nutrient deficiencies (e.g., nitrogen, phosphorus) and match them to the crop's requirements¹.
 - Ideal soil pH for most biofertiliser microbes is different for fungi or bacteria
 - Microbes are sensitive to temperature shocks, .i.e. soil temperature is too cold.
 - So additives can inhibit or compete with other soil biology affecting germination. So test and trial to see what happens.
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Choose the Right Biofertiliser

For example, below is a small selection of microbes that can help your farming practises. Select biofertilisers based on soil needs and crop type: there are thousands of different species that do different things in our soils.

- **Nitrogen-fixing biofertilisers** (e.g., Rhizobium, Azotobacter, Azospirillum): Best for legumes and crops needing nitrogen.
- **Phosphate-solubilising biofertilisers** (e.g., Bacillus megaterium, Pseudomonas fluorescens): For phosphorus-deficient soils.
- **Mycorrhizal fungi** (e.g., Glomus spp.): Enhance water and nutrient absorption for many crops.

- **Compost activators:** Speed up decomposition of organic matter[1512](#).
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Prepare for Application

- Store biofertilisers in a cool, dry place away from sunlight and heat to preserve microbial viability. Watch out for expiry dates and manufacture dates. Don't over purchase.
 - Use non-chlorinated water for mixing, as chlorine can kill beneficial microbes[1](#).
 - Avoid mixing biofertilisers with chemical fertilizers or pesticides unless specified by the manufacturer[1](#).
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Application Methods

- It really depends on your existing farming practises and equipment. Get in touch if you would like any assistance.
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Best Practices for Integration

- Incorporate organic matter (carbon) to support microbial life[1](#).
 - Practice crop rotation and intercropping to maintain soil health and maximise biofertiliser benefits[1](#).
 - Gradually reduce chemical inputs to avoid harming beneficial microbes[1](#).
 - Apply biofertilisers after watering or rainfall and during cooler parts of the day for best results. Ideally in the evening during summer when the temperature are not too hot [4](#).
 - Monitor plant development and repeat applications as needed[4](#).
 - Regularly test soil to track improvements and adjust practices accordingly[1](#).
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Safety and Environmental Considerations

- Avoid overuse; excessive application can disrupt soil balance, similar to chemical fertilizers[4](#).
- Wash produce treated with foliar sprays before consumption, especially if harvested soon after application[4](#).
- Do not use manure from animals treated with antibiotics recently when preparing on-farm biofertilisers[4](#).

Conclusion

Effective use of biofertilisers hinges on understanding soil and crop requirements, choosing the right product, proper application, and integrating them into sustainable farming practices. Regular monitoring and adjustment will maximise their benefits for soil health, crop yield, and environmental sustainability [14579](#).

Limitations of the document

This document is created as a high level guide and may not be suited to your specific soil or plant conditions. This document is not to be read as recommendations and we accept no liability for the information provided.

References for further guidance

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