

# Using Bio-inoculants

## Adding micro-organisms to your farm...



**Micro-organisms play an important role on any farm. They assist in nutrient cycling, maintaining soil and plant health and they help prevent disease in crops.**

### What are bio-inoculants?

Bio- inoculants are products that contain living micro-organisms like fungi and bacteria that can be applied to your soil or crops.

Micro-organisms (also known as biology or microbes) are very small creatures such as bacteria and fungi that live in soils as well as in water and on plant surfaces. They are an essential part of all ecosystems including farms.

### Why use bio-inoculants?

Micro-organisms are vital for nutrient cycling and help maintain soil and plant health. For example some fungi assist in the uptake of Phosphorous and Zinc nutrients to plants. Others control pathogens on leaf surfaces and around plant roots.

Many modern farming practices such as using high salt fertilisers and agricultural chemicals can reduce the number and effectiveness of the micro-organisms in the soil and on plants.

*Micro-organisms need a source of readily available carbon along with nitrogen and other nutrients.*

*Many agricultural chemicals will adversely impact on microbial populations. Use chemicals sparingly.*

*Micro-organisms need moisture and moderate temperatures to survive.*

Without healthy micro-organism populations soil health cannot be maintained, plant health and yields decline and disease may increase.

### Types of bio-inoculant products

There are many different bio-inoculant products on the market. Some of these products only add very specific organisms like the *Rhizobia* bacteria that are added to legume seed to increase nitrogen fixation in the crop.

Other products, such as compost teas, add a diverse range of bacteria and fungi to help increase general biological activity.

The main types of bio-inoculants include:

- **Soil inoculants** to improve soil biological activity
- **Plant inoculants** to improve plant nutrient uptake and disease resistance
- **Residue inoculants** to improve the breakdown of crop and litter residues

### How & when to use bio-inoculants

Before using a bio-inoculant product you need to be sure of the purpose that you want to add it for. Is it for soil or plant biology? You then need to match the product to your specific need.

Also ensure that the product really has micro-organisms in it. Make sure you use products that have been tested and are not dead!

**Ausmin has a range of bio-inoculants, the BioBrew range, that can assist you in your change to a biological way of farming...**