

Improving soil biology: the key to success in maximising crop performance?

**When growing maize for ruminants
or anaerobic digestion, yield
and quality are essential!**

Plants live and grow as part of an ecosystem, and their behaviour depends on the environmental conditions. Generally speaking, they influence the area around their roots, known as the rhizosphere. Their roots secrete exudates which supply a source of nutrition for beneficial microorganisms.

The plant expends this energy in return for nutritional aid, health benefits and increased adaptability, which microorganisms can provide. This is the principal of mutualism a relationship where both organisms benefit.

Benefits of improving soil biology

Agricultural practices can cause a decrease in microorganism diversity. Improving soil microbiology is an essential part of remediating damaged soils and restoring a healthy plant microorganism balance, whilst reinstating a diverse microbial community.

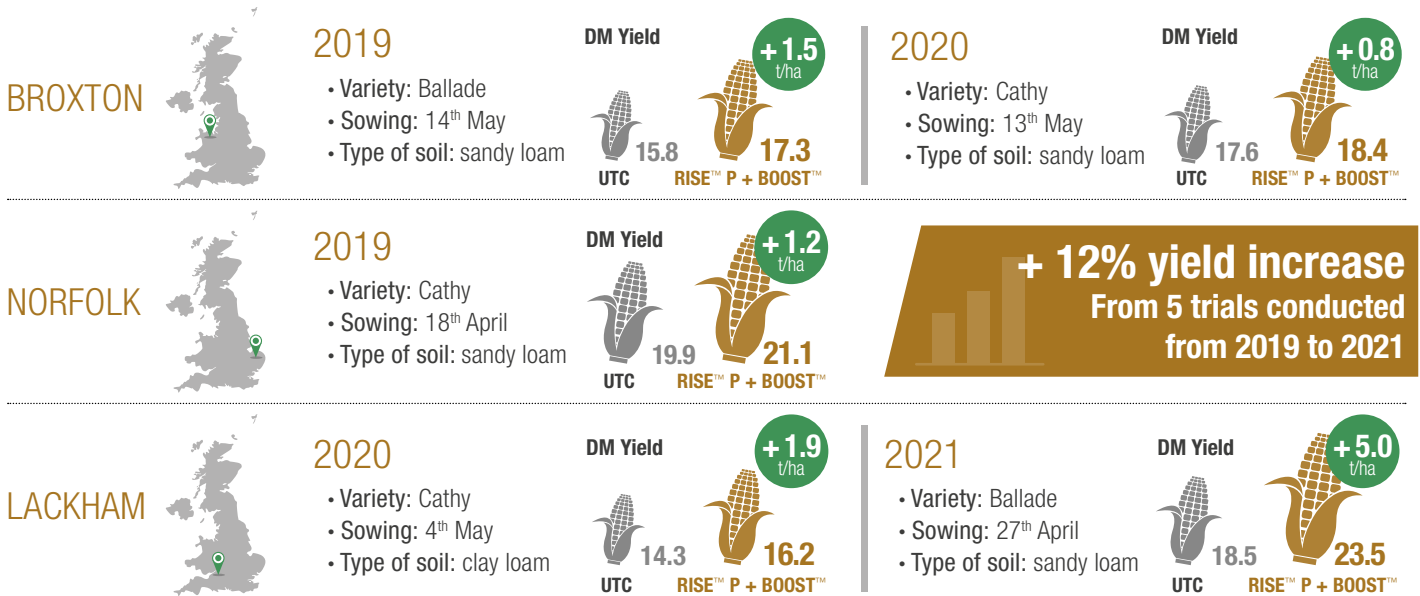
Root inoculation can limit adverse effects by quickly populating the rhizosphere with large numbers of a Plant Growth Promoting Rhizobacteria (PGPR) to boost the growth and development of the host plant. The native populations and the inoculated bacterial population will gradually rebalance themselves but introduced microbe influence can last longer with the provision of supplementary food sources.

This can also lead to an increase in the efficient processing of your soil reserves and applied inputs - including (but not limited to) fertilisers, farmyard manures, slurries and cover/crop residues. Improving the feeding potential of soil will improve outputs in yield, quality, sustainability and your margins.

Results

Working with the Maize Growers Association, over the last 3 years, trials have been conducted to maximise the microbial activity in the rhizosphere, inoculating a PGPR strain of *Bacillus amyloliquefaciens* IT45 (RISE™ P from Lallemand) combined with a supplementary food source for microbes (L-CBF BOOST™ from QLF Agronomy).

Positive and encouraging results have been achieved:



How does it work?

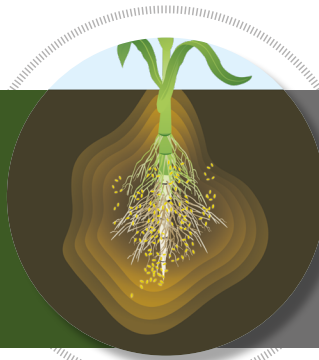
INOCULATING WITH BACILLUS IT45



150 g/ha

2.10¹⁰ CFU*/g of *Bacillus amyloliquefaciens* strain IT45
*CFU: Colony Forming Unit. Unit of measure for living microorganisms able to multiply

- ✓ Improves rooting and biomass
- ✓ Solubilises locked nutrients (phosphorus and trace elements)
- ✓ Improves uptake of nutrients and water
- ✓ Improves tolerance to stresses



ENHANCING SOIL MICROBIAL ACTIVITY



20 L/ha

Carbon based additive, with balanced crop nutrients and beneficial biology

- ✓ Stimulates beneficial microbes in the soil
- ✓ Improves nutrient recycling i.e. FYM/trash breakdown
- ✓ Improves efficiency of applied nitrogen (plus P & K)
- ✓ Reduces the impact of nitrogen fertiliser on soil biology

– RAISE YOUR SOIL'S MICROBIAL ACTIVITY
– ENHANCE YOUR SOIL CONTENT

– MAXIMISE YOUR FERTILISER EFFICIENCY
– IMPROVE YOUR YIELDS AND QUALITY!



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