

Trials show yield, dollar benefits from pulse inoculants

Growers planning to sow pulses this season can expect to see a yield and dollar benefit from using an appropriate rhizobial inoculant.

In large-scale field trials conducted in SA, NSW and Victoria last season, the use of an inoculant on pulses increased grain yields by an average of almost 13 per cent and net income by more than \$40 per hectare at a price of \$300 per tonne.

And with better growing conditions and higher grain prices there is potential for considerably greater benefits from using an inoculant suited to the crop being grown.

According to NSW DPI research scientist David Herdridge, inoculation of crops in some soils can increase pulse yields by '50 to 150 per cent'.

Trials suggest legume growers would benefit by applying a rhizobial inoculant every time they sow a crop, said Sanford (Sandy) Gleddie, CEO of Philom Bios Australia.

Philom Bios, which is exploring the potential of inoculants in Australia with research partners including the GRDC, ANU, CSIRO, SARDI and Flinders University, has found that growers cannot rely on carry-over of rhizobia from one pulse crop to the next.

Inoculation produced the same yield responses in peas, lentils, faba beans and chickpeas after two years as the same crops grown 10 years apart. This suggested populations of rhizobia bacteria in the soil – which are highly susceptible to dehydration – fall soon after the end

of the growing season.

"The message from this finding is that growers can expect to see a yield benefit from using an inoculant, which costs around \$6 per hectare, almost every time they sow a pulse provided there is enough moisture," Sandy said.

"Rhizobia survive in the soil if conditions are right but the organisms soon die in soil and become less effective, especially in hot, dry or saline conditions, or in soils with high or low pH.

"Inoculation is a numbers game. The more live effective strains of rhizobia bacteria there are in

Inoculated (on right) versus not inoculated.

the soil while the crop is emerging the higher the level of nitrogen fixation.

"The best way of ensuring pulse production is not limited by lack of nitrogen is to apply the recommended rate of the appropriate strain of bacteria every time a crop is sown," Sandy said.

Some of the formulations are designed to be applied to the seed, others are designed to be applied 'in furrow'. Formulations currently available include:

- The traditional peat products designed to be mixed with water and applied to the seed or injected into the soil;
- Freeze-dried products also designed to be mixed with water and applied to the seed or injected into the soil; and,
- Peat or clay granules applied in-furrow with the seed.

Sandy suggests growers who decide to dry-sow legumes should use peat-based granular formulations because they maximise the chances of the bacteria surviving until the crops germinate and soil conditions are right for build-up of the organisms ahead of root infection and nodulation.

**For further information please contact Sandy Gleddie
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Dressed for success

Growers wanting to apply a cost effective zinc treatment this season, should consider Ultra Zinc to improve their yield potential.

Ultra Zinc is produced by Ultimate Agri-Products and contains 100 per cent zinc as oxide in a liquid flowable form.

Glen McDonald, Director of Ultimate Agri-Products said that with increased costs due to transport (fuel) and packaging, that Ultra Zinc becomes very attractive due to its formulation containing one kg of zinc in every litre.

For the past five years Ultra Zinc has been applied with successful results in cereal crops both as a seed coat and foliar treatment.

Application rates

Seed coat: 1.5–2.5 litres per tonne.

Foliar treatment: 0.5–1.0 litres per hectare.

