

Increasing nitrogen use efficiency

Boost your pulse potential with
biofertiliser technologies



New biofertiliser technologies offer potential to enhance pulse root crop growth right from the start and through the growing season.

Pump up your pulse potential

The macro nutrient **nitrogen (N)** is important for the growth of all crops, particularly protein crops. As pulse crops receive no supplemental nitrogen, they rely on soil and nitrogen-fixing bacteria (rhizobium) in root nodules for their nitrogen supply.

What are biofertilisers?

Biofertilisers contain bacteria which fix atmospheric nitrogen into ammonium (NH₄) and organic nitrogen. They provide an extra source of nitrogen by 'topping up' the nitrogen from soil and rhizobium sources.

This added nitrogen ensures consistent availability during crop growth and pod fill, supporting healthy development throughout the season.



How do biofertilisers help?

Biofertilisers are particularly beneficial in dry or cooler conditions, especially in sandy soils with low residual nitrogen content. They support crop growth during periods of slow soil mineralisation.

By enhancing nitrogen availability to plants, biofertilisers contribute to improved root development, increased biomass, and ultimately higher yields.



Available products

Products	Benefits
 <p>Nuello[®] iN Seed treatment</p>	<p>Contains 2 bacteria strains that enable enhanced root growth, crop growth and development and help seedling establishment.</p>
 <p>Vixeran[®] Foliar application</p>	<p>Contains bacteria which colonise the plant via foliage and move within the soil to colonise the root system.</p>

Factors affecting nitrogen availability in pulse crops:

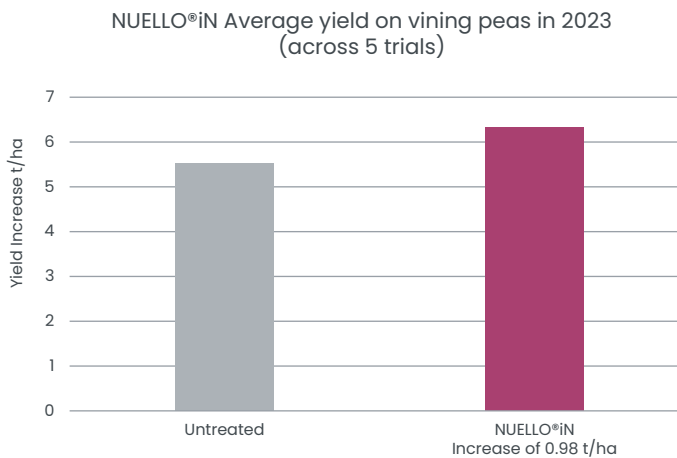
- Poor soil conditions at establishment and soil profile compaction
- High levels of winter rainfall and nitrogen losses via leaching
- Low levels of rhizobium bacteria in the soil
- Loss of root nodules due to damage from pea and bean weevil

Nuello[®] iN Always On Nitrogen Generation

NUELLO[®] iN seed treatment includes two unique endophyte bacteria that fix atmospheric nitrogen into a form readily useable by the growing plant. They enter the plant through root cracks **throughout the season**. One of these bacteria, *Curtobacterium salicaceae*, is also capable of mobilising soil insoluble phosphate to be available for seedling rooting and establishment.

Trials results 2024

Results in vining peas showed an average yield improvement of 0.98 t/ha, with no effect on maturity, (measured using a Tenderometer reading, TR). The data in the chart below reflect results from five trials; two in Lincolnshire, one in Norfolk and two in Scotland.

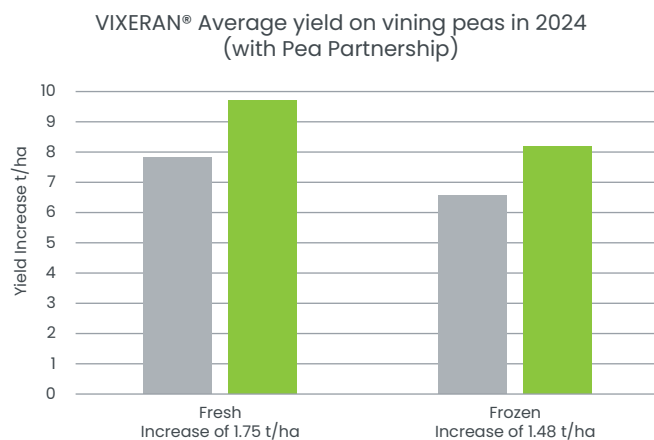
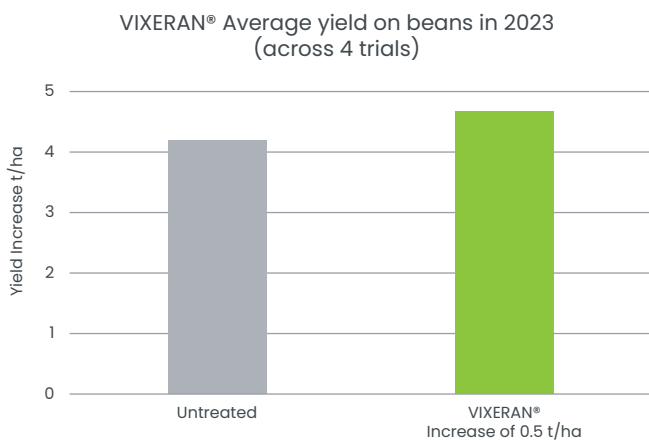




Vixeran[®] Foliar Applied Endophyte Technology

For ultimate flexibility, **VIXERAN[®]** is a foliar applied biofertiliser. It contains the highly efficient atmospheric nitrogen-fixing bacterium, *Azotobacter salinestris*, which colonises foliage, roots and the soil biosphere. Trials have demonstrated that VIXERAN[®] can contribute a nitrogen equivalent of up to 30 kg/ha in other arable crops.

Trials results in pulses

Field bean trials in 2023 gave a yield benefit averaging 12.7%, while 2024 vining pea field trials showed a 22% improvement in fresh and frozen yield.



	 Nuello[®]iN	 Vixeran[®]
PRODUCT TYPE	Biological seed treatment, biofertiliser.	Biological foliar product, biofertiliser.
BACTERIA	Nitrogen fixing, <i>Curtobacterium Salicaceae</i> and <i>Pseudomonas siliginis</i> .	Nitrogen fixing, <i>Azotobacter salinestris</i> .
CROPS	Vining peas, beans, cereals, maize, oilseed rape.	Field beans and Vining peas, where seed not treated with NUELLO [®] iN. All arable crops, including potatoes and sugar beet.
APPLICATION	Apply through conventional static and mobile seed treaters that are clean and correctly calibrated.	<ul style="list-style-type: none"> • Daytime temperatures reaching at least 10–12°C • No frost for 5 days before and 5 days post application • Water volume 100 – 200 l/ha
COMPATABILITY	Most leading seed treatments when co-applied. Not in tank mix.	Readily integrated with conventional agronomy programmes – for example tank-mixed with fungicide applications.
ORGANIC	Certified for use in organic production systems. Consult your certification body prior to use.	Certified for use in organic production systems. Consult your certification body prior to use.

Syngenta UK Ltd. Registered in England No. 849037.
Jealott's Hill International Research Centre, Bracknell, Berkshire, RG42 6EY.
Contact your Area Manager: www.syngenta.co.uk/contact-us Email: reception.cambridge@syngenta.com Website: www.syngenta.co.uk

All trademarks are registered trademarks of a Syngenta Group Company or a third-party licensor.

Always read the label and product information before use.

For further product information, including warning phrases and symbols, refer to www.syngenta.co.uk