

NUELLO[®] iN: ALWAYS ON Nitrogen Generation

Use to optimise nitrogen programmes as part of an integrated nitrogen management strategy

What is NUELLO iN

NUELLO iN is a biological seed treatment containing a unique blend of nitrogen fixing endophyte bacteria that are proven to capture nitrogen directly from the atmosphere



Two N-fixing endophyte bacteria proven to capture nitrogen directly from the atmosphere

+



Extender
prebiotic biostimulant

=



NUELLO iN
seed treatment applied at 1 litre/tonne as a standard seed treatment

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ALWAYS ON
Nitrogen Generation. The endophyte bacteria colonise the plants roots and shoots for the duration of the season

Pseudomonas siliginis

A strong atmospheric nitrogen fixing endophyte bacterial strain



NUELLO iN



Curtobacterium salicaceae

A strong atmospheric nitrogen fixing and soil insoluble phosphate mobilising endophyte bacterial strain

- The NUELLO iN endophytes were first isolated from giant poplar and willow trees along the nutrient poor river banks of the Washington state mountains. The endophytes were responsible for providing up to 65% of the total nitrogen to these giant trees
- Kansas State University have directly proven atmospheric nitrogen fixation and increased crop nitrogen uptake by the NUELLO iN endophytes in wheat
- Recommended to co-apply NUELLO iN with a fungicidal seed dressing to control seed and soil-borne disease – good compatibility with VIBRANCE Duo and BERET Gold

NUELLO iN endophyte bacteria enter and colonise the plant through root cracks and fix nitrogen from the atmosphere for the duration of the season

NUELLO iN Improves Nitrogen Use Efficiency



NUELLO iN ALWAYS ON nitrogen generation fixes nitrogen direct from the atmosphere for the duration of the season



NUELLO iN acts as a 'back-up generator' for the plant if nutrients become limiting for any reason e.g. late applied N, planned nitrogen reductions



Trials have shown NUELLO iN benefit equivalent to up to 30 kg N/ha



Enhances crop biomass and root development for improved nutrient scavenging from the soil



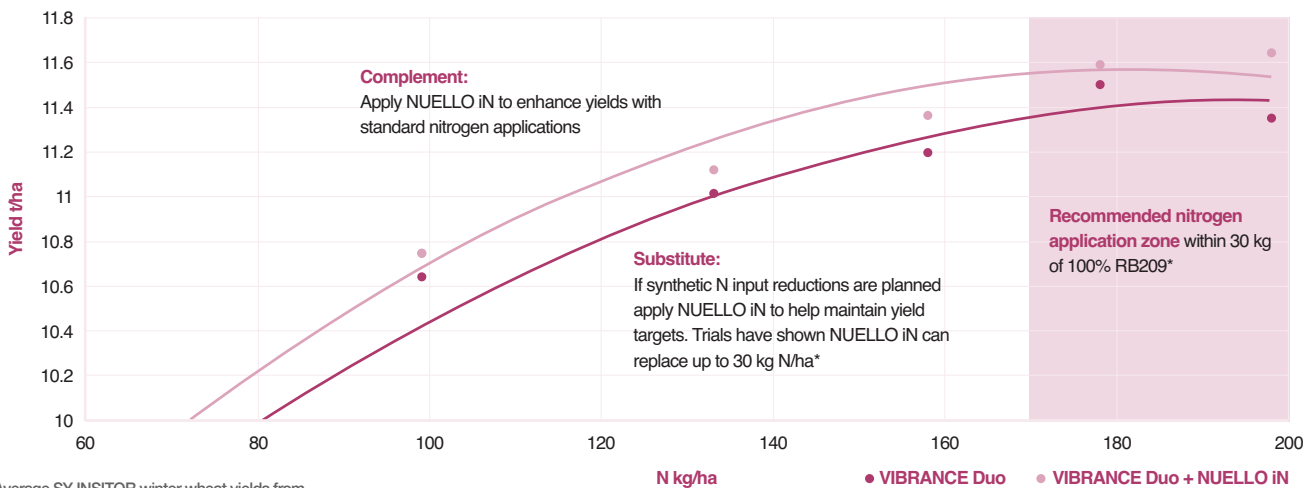
Complements standard nitrogen applications as an additional source of N to enhance yields



Excellent yield benefits on light/shallow land sites and in second cereals

NUELLO iN winter wheat trials 2022:
A yield benefit on 11 out of 14 light/shallow land sites and 7 out of 10 second cereal sites

UK winter wheat nitrogen curve replicated trials 2022 demonstrate an average nitrogen benefit from NUELLO iN equivalent to up to 30 kg N/ha



Average SY INSITOR winter wheat yields from Newark, Strettham, Balgonie and Bleasby 2022



Vibrance Duo

+ Nuello iN



SY KINGSBARN hybrid barley NUELLO iN rooting benefit assessed February 2022 and clear greening benefits observed June 2022

NUELLO iN acts as a 'back-up generator' for the plant when nutrients become limiting:

A light land case study in winter wheat and hybrid barley from Newark, Nottinghamshire 2022

- 2022 was an extremely hot and dry season
- The main nitrogen timing in both the winter wheat and hybrid barley nitrogen curve trials was applied during extremely dry April weather with no moisture to take up the nitrogen prills until May
- NUELLO iN treated plots displayed clear rooting benefits, clear greening benefits, higher chlorophyll levels and reduced crop stress to extend the grain fill period
- NUELLO iN gave an average yield benefit of 0.5 t/ha in the winter wheat and 0.3 t/ha in the hybrid barley nitrogen curve trials

NUELLO iN Benefits



Efficient

Improves nitrogen use efficiency.



Always ON

Constantly working within the plant to give a more consistent nitrogen availability and efficiency for the duration of the season.



Complements

Apply NUELLO iN to enhance yields with standard nitrogen applications.



Substitutes

If synthetic N input reductions are planned apply NUELLO iN to help maintain yield targets. Trials have shown NUELLO iN can replace up to 30 kg N/ha*.



Insurance

Excellent insurance policy to help bridge the gap if N is late applied or not optimally taken up.



Sustainable

The Haber Bosch process produces artificial nitrogen and is fundamental to modern agricultural food production but the process significantly contributes to greenhouse gas emissions – 10.6% of agricultural and 2.1% of global emissions. As part of an integrated nitrogen management strategy NUELLO iN can help optimise nitrogen programmes to improve farm carbon footprint, farm profitability and reduce nitrogen run-off into the environment.



Use NUELLO iN to optimise nitrogen programmes as part of an integrated nitrogen management strategy

Are you planning on reducing N in winter wheat and/or winter barley?

Yes*

- 🔥 If synthetic N input reductions are planned apply **NUELLO iN to help maintain yield targets**. Trials have shown NUELLO iN can replace up to 30 kg N/ha*
- 🔥 Use on all feed wheat and feed barley in all cropping situations to help mitigate N reduction
- 🔥 **Currently not recommended** to reduce N on milling wheat or malting barley to maintain % grain N

No

- 🔥 Apply NUELLO iN to enhance yields with **standard nitrogen applications** especially where access to nitrogen from the soil is limited
- 🔥 NUELLO iN **excellent yield benefit** on light/shallow nutrient deficient soils and in second cereals
- 🔥 NUELLO iN is a **great insurance policy** to help bridge the gap from delayed nitrogen timings, dry weather, wet weather, N lock-up etc

Three key positions in winter wheat and winter barley

1 Apply NUELLO iN to enhance yields with standard nitrogen applications on light/shallow nutrient deficient soils.

2 Apply NUELLO iN to enhance yields with standard nitrogen applications on second cereals (and following other nitrogen hungry previous crops)

3 If synthetic N input reductions are planned apply NUELLO iN to help maintain yield targets. Trials have shown NUELLO iN can replace up to 30 kg N/ha*

*Consult a FACTS Qualified Adviser for advice and guidance on nitrogen applications. Trials have shown NUELLO iN can replace up to 30 kg N/ha based on a reduction from the standard 100% nitrogen RB209 recommendation. RB209 recommendations are based on a break-even ratio of 5.0 (cost of fertiliser nitrogen as £/kg N divided by value of grain as £/kg). Recommended not to reduce N in milling wheats to maintain % grain N

BERET® Gold (MAPP 16430) contains fludioxonil. VIBRANCE® Duo (MAPP 17838) contains fludioxonil and sedaxane. BERET® Gold, VIBRANCE® Duo and NUELLO® iN are Registered Trademarks of a Syngenta Group Company. All other brand names used are Trademarks of other manufacturers in which proprietary rights may exist. Use plant protection products safely. Always read the label and product information before use. For further product information including warning phrases and symbols refer to www.syngenta.co.uk

