

# ALTERNATIVE N SOURCES

There are several bio-stimulants, biological and foliar nutrition products that can help reduce the need for soil applied nitrogen fertilisers. NIAB is trialling some of the innovative products to understand how best they can be used in a nutrition programme that can help growers to improve nitrogen use efficiency of the applied fertiliser. Some products can reduce reliance on nitrogen fertiliser and may help reduce greenhouse gas emissions.

## QLF Boost

A liquid carbon fertiliser designed to feed soil microbes that help with nutrient cycling.

## Soil applied bacteria eg SR3

SR3 contains four different plant growth promoting bacteria including *Gluconacetobacter diazotrophicus*, *Bacillus amyloliquefaciens*, *Derxia lacustris* and Rhizobacterium species.

## Endophyte based seed dressings eg Tiros /BioN

Endophytes are microorganisms that internally infect living plant tissues without causing any visible manifestation of disease and live in mutualistic association with plants for at least a part of their life cycle. They live within the whole of the plant and can be bacterial, fungal or yeast.

## Luxor

A liquid formulation that contains a blend of nutrients, humic and fulvic acid, in combination with L-PGA (pidolic acid). It is claimed that it can enhance nutrient use efficiency, increase photosynthesis and carbon fixation.

## 2-OXO

A metabolite 2 Oxoglutaminate (2 OXO) that has a profound effect on plant nitrogen metabolism. It can increase nitrogen assimilation in plants by increasing uptake and hence can help reduce reliance on soil applied N.

## Blue N

A nutrient use efficiency bio-stimulant that contains *Methylobacterium symbioticum*, a bacteria that can fix atmospheric nitrogen for use by the plant.

## R-Leaf

A product that can help capture the atmospheric nitrogen oxide (NOx) pollutants and converts them to plant feed. This results in reduced air pollution and increased crop yield.

*Trials plots investigating the effects of a range of treatments on NUE*

