

N-Lock – Performance

- Greater productivity – higher yield potential
- Environment protection – reduced nitrate leaching
- Improved efficiency – better use of nitrogen investment
- Improved quality – increases in cob weights and grain proteins

N-Lock can be applied to Maize, Cereals and OSR

N-Lock can be used with all types of nitrogen fertilisers

Ammonium Nitrate, Urea, Liquid UAN, Manures, Slurries, Digestate

What is N-Lock?

- A Nitrogen Stabiliser
- Micro-encapsulated formulation of nitrapyrin [200 g/L]
- Apply through existing farm spray equipment at 2.5 L/ha



N-Lock must be incorporated into the soil within 10 days of application.

This can be achieved either mechanically, cultivating pre drilling a spring crop, cultivating to incorporate organic matter.

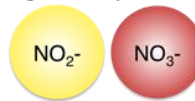
Or by rainfall, 12mm of rain after the N-Lock application.

Key Benefits

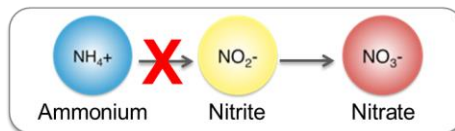
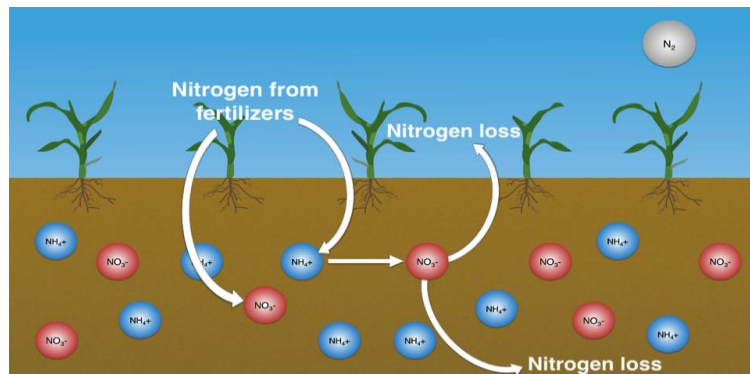
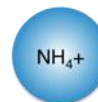
- Keeps nitrogen available in the root zone for longer to optimise yield
- Average yield increase 9% in maize, 4.7% in wheat
- Allows reduction in number of fertiliser passes (more fertiliser can be applied in earlier splits)
- Reduction of nitrate leaching and greenhouse gas emissions

Why stabilise nitrogen?

Nitrite and Nitrate are negatively charged and can be leached



Ammonium is locked onto soil particles and does not leach



X = N-Lock works by inhibiting the bacteria which convert NH_4^+ to NO_2^-

N-Lock is for farmers who want to keep nitrogen available in the rooting zone for longer and optimise their yields

N-Lock Calendar

- January** - Start discussing N-Lock for spring use.
- February** - Start applying N-Lock in the second half of the month as conditions allow especially in OSR. Monitor crops that had organic manures and N-Lock applied in the autumn.
- March** - Apply to Winter Cereals and OSR around the time of the main fertiliser application, ensure rain is forecast to wash the N-Lock into the soil.
- April** - Continue applying to winter cereals in cooler and more northerly regions and to seedbeds for spring cereals and maize, ensure adequate incorporation with cultivation before drilling.
- May** - Apply to maize seedbeds or apply N-Lock with pre-em herbicides.
- June** - Monitor crops where N-Lock has been applied and arrange yield and quality testing ready for harvest
- July** - Record yields and quality of early harvested treated crops. Order N-Lock to apply with any organic manures in early autumn.
- Aug** - Record yields & quality of N-Lock treated crops
- September** - Apply N-Lock to stubbles that are going to have organic matter spread and incorporate in within 10 days [N-Lock can be mixed with glyphosate]. Record yield and quality of maize.
- October** - Continue to record maize yields and quality. Start discussions with farmers as they decide upon next season's fertiliser requirements. Discuss N-Lock with farmers who are ordering maize seed.
- November** - Analyse yield and quality data then calculate your return on investing in N-Lock along with environmental benefits
- December** - Plan your N-Lock use for the following year targeting situations to gain you the best return.

Apply N-Lock in 100-200 L water/ha, or 400-600 L/ha Liquid UAN. N-Lock has an extensive list of tank mix partners. Fill the spray tank ½ full of water, with agitation add the N-Lock to the tank slowly or through the induction hopper with plenty of water. Keep agitation going constantly throughout.

Where should N-Lock be used for best results?

- In Maize on all soils** - Maize utilises most of its nitrogen 8- 10 weeks after drilling. Rainfall during this period can move nutrient away from the plant roots.
- In Cereals and OSR** - Use on light leachy soils. Use where crop has high demand for late N. Use in a low input system. Don't use if nutrient availability is plentiful and other limiting factors are likely to restrict yield.
- With Organic Manures** - FYM, Slurry, Digestate. Protect from winter losses of nitrogen with autumn applications

When to apply N-Lock



- Nitrosomonas bacteria convert ammonium to nitrite. The bacteria become less active when soil temperatures are 8 degrees C and below.
- N-Lock inhibits these bacteria for 8 to 10 weeks.

Spring applications of N-Lock for winter crops should be applied from February through to April near the timing of the main nitrogen application of nitrogen to the crop.

Applications to maize and spring cereals should take place just before or just after drilling.

N-Lock use with organic manures should take place in early autumn as soils start to cool down.