



KEEP GROWING

Instinct®

Optinyte™ technology

NITROGEN STABILIZER

**Instinct® a new generation of
nitrogen stabilizer, reducing
emissions and providing an
optimized supply of nitrogen for
corn.**

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Brooks Coetzee – Corteva Agriscience USA
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What it is and what are the benefits?

Instinct is a stabilizer for use with nitrogen fertilizers to optimize crop yield potential, minimize losses of nutrients and increase nitrogen use efficiency

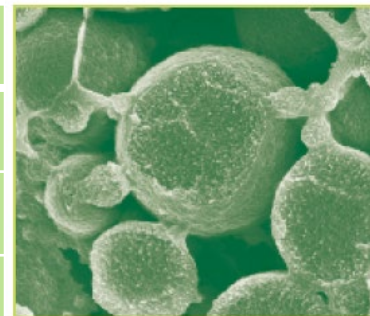
Instinct application combines advantages for crop (nitrogen availability), grower (higher yield) and environment (less leaching to ground water + less emission to atmosphere)

Product profile

Instinct[®]
Optinyte™ technology

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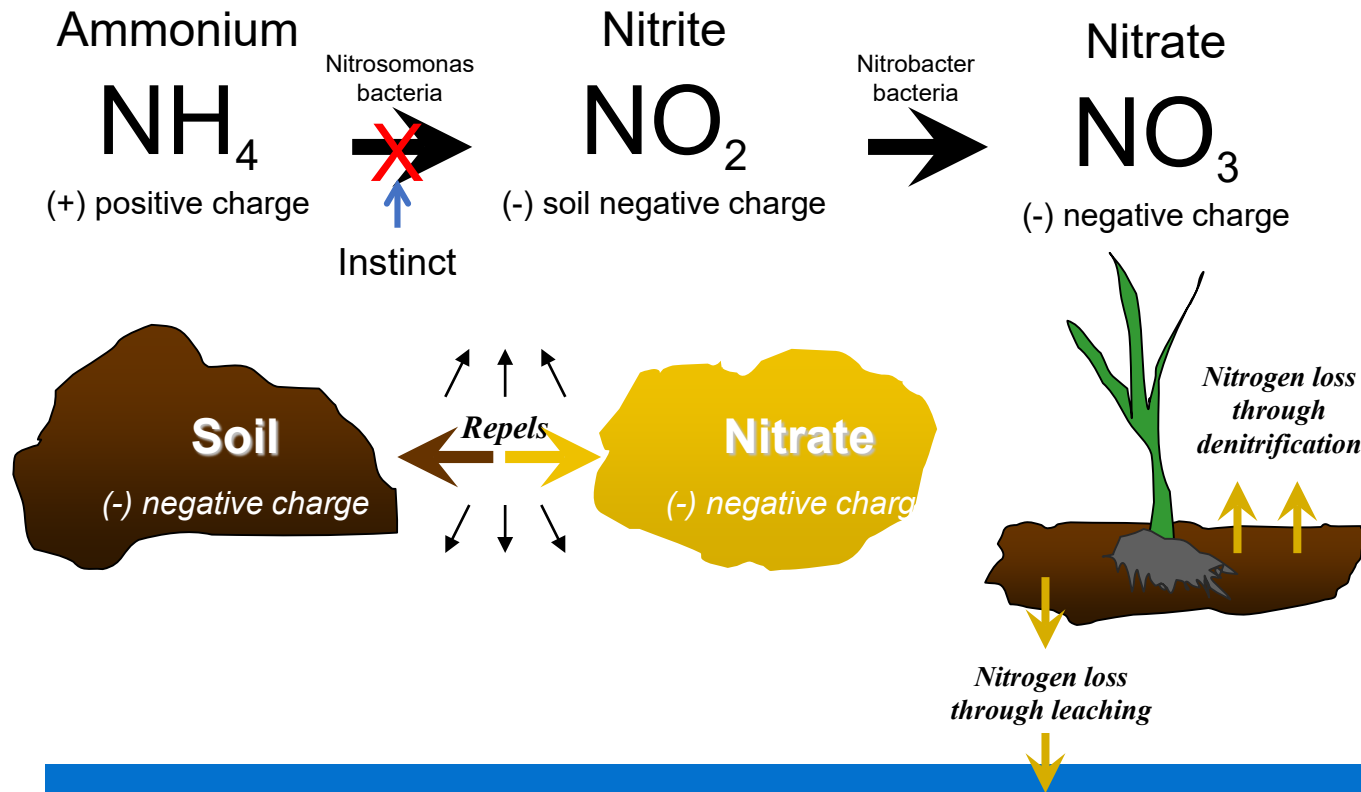
Active ingredient	Nitrapyrin 300 g/L
Formulation	Microencapsulated suspension (CS)
Application	Mineral and organic fertilizers
Use rate	1.7 l/ha
Crops	Corn, cereals, winter oilseed rape, potato, sugar beet*
Incorporation	Mechanical incorporation ensures Instinct activity and efficiency (alternatively, 15 mm rainfall within 10 days from application)
Corrossivity	None – water-based formulation with pH=7



Microscope picture of the capsules

* - other crops are coming

How it works?



Benefit for the crop:

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Urea with
N 120 kg/ha,
Untreated



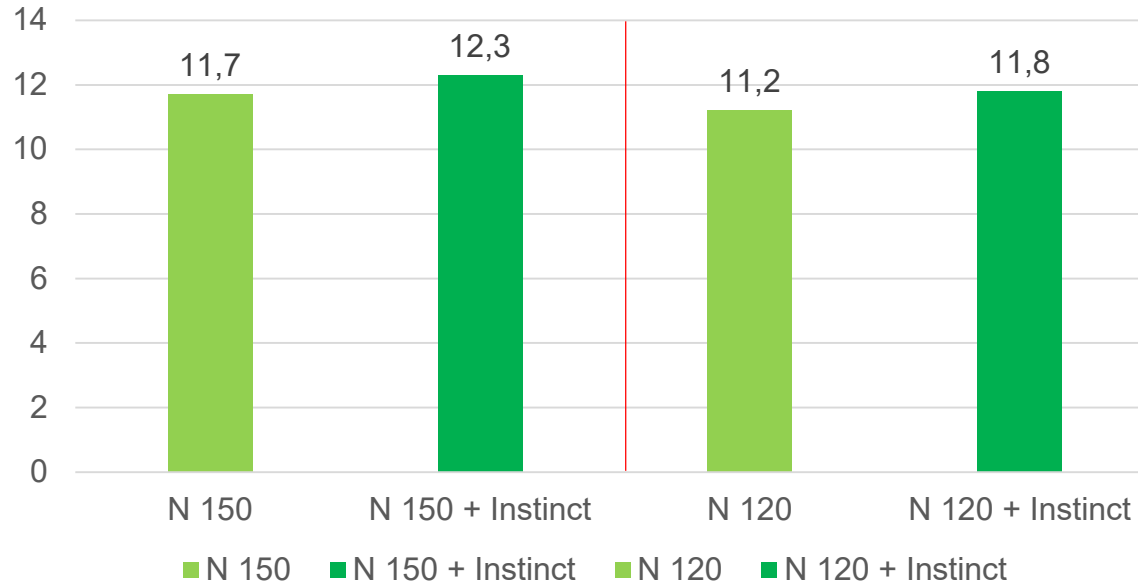
Urea with
N 120 kg/ha
applied preplanting
Stabilized with
Instinct 1.7 l/ha

Benefit for the grower:

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Grain corn yield at 14% grain moisture in t/ha, average
from 6 trials carried out in 2020 in Europe



On the average
5% more yield



Benefit for the environment

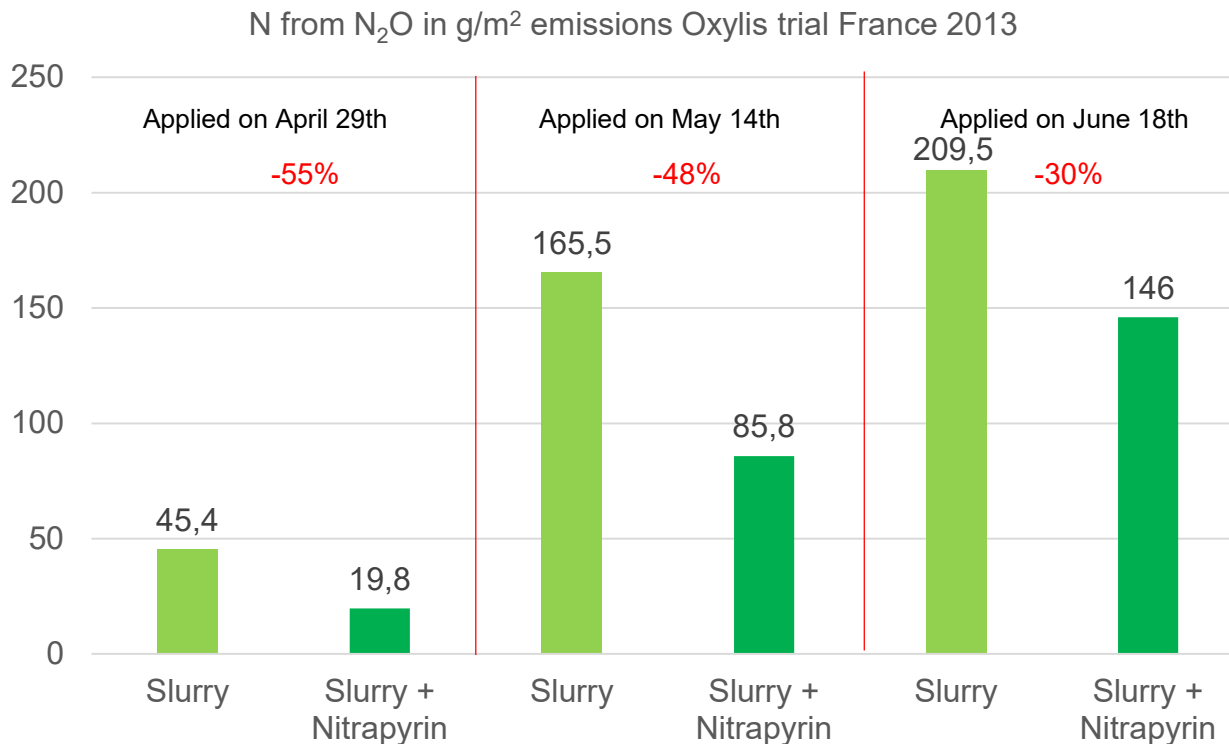
Multiple peer reviewed publications, for reference:

- **Wolt** (2004) meta-analysis – 13 studies on N₂O emissions – demonstrating nitrapyrin has potential of 51.2% reduction on average
- **Qiao et.al.** (2015) meta-analysis – 62 studies on various gas emissions – demonstrating nitrapyrin has potential of 44% reduction on N₂O emission on average

Benefit for the environment:

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Emission – ongoing efforts

- **University of Turin** trial started in autumn 2019 with spring & autumn applications with slurry on light and heavy soils with and without stabilization
 - all gas output will be measured, waiting for final data
- Trial with **SEGES** established in spring 2021 to measure gas output in corn with and without Instinct stabilizer



Instinct = Benefits crops, growers and the environment

- ✓ **Instinct works with every nitrogen fertilizer containing an ammonium form of nitrogen.**
- ✓ **Fertilizer value after using Instinct increases – more nitrogen available for the crop, reduced loss to ground water (leaching) and to the atmosphere (volatilization) – Increased Nitrogen Use Efficiency**
- ✓ **Atmosphere & Air: significant reduction of greenhouse gas emissions – N₂O by 40-50%**
- ✓ **Soil & Water: significantly better retention of nitrogen in the soil**
- ✓ **More nitrogen for the crop + less nitrogen loss to the environment = higher yield for the grower, a positive financial and environment impact**