

eNpower® Product Guide

eNpower®

Smarter nitrogen for
Australian canefarmers

eNpower®

Why choose eNpower®?

eNpower® helps you get more out of your nitrogen investment.

As an enhanced efficiency fertiliser, eNpower is designed to minimise nitrogen losses, improve nitrogen use efficiency, and maximise return on investment. With nitrification inhibitor technology, proven through rigorous testing and trials, eNpower helps keep nitrogen where it belongs – in the soil, available to your crop.

With growing awareness of emissions from nitrogen fertilisers, as well as Reef Regulations in some growing regions, it's not practical, profitable or possible to just apply more nitrogen to offset the losses. Instead, use eNpower to get the most out of your applied nitrogen. Protect your fertiliser investment and ensure your nitrogen stays in the system.

eNpower complements existing agronomic management strategies, such as soil testing, nutrient budgeting, nitrogen fertiliser product selection and application timing which combine to optimise productivity.

HOW ENPOWER WORKS

eNpower is Incitec Pivot's patented nitrification inhibitor DMP-G, the next generation of DMP based inhibitors, which slows the nitrification of ammonium-nitrogen to nitrate-nitrogen. By stabilising ammonium and matching availability to increasing crop demand, less nitrate-nitrogen is lost through denitrification, runoff or leaching.

- eNpower is a bacteriostatic, which effectively 'puts to sleep' the bacteria responsible for naturally converting ammonium through to nitrate.
- Nitrogen in the nitrate form is subject to denitrification (N_2O and N_2 gas) especially under soil water conditions with greater than 60% water filled pore space (irrigated or high rainfall systems).
- Nitrogen as nitrate is much more prone to both leaching and runoff particularly on soils with a CEC of <4 cmol(+)/kg.
- eNpower has the capability to keep nitrogen in the ammonium (NH_4^+) form, which binds to the negatively charged clay particles and organic carbon fractions in the soil. Once held by cation exchange sites, risk of nitrogen being carried out of the root zone by heavy rain or irrigation is reduced.
- Incitec Pivot research trials have demonstrated delayed nitrification of ammonium nitrogen can increase yields with the same N application rate or achieve equivalent yields with lower N rates.
- Ammonium is the preferred source of nitrogen for sugarcane. Even if both ammonium and nitrate nitrogen are available in the soil, the crop will take up ammonium until the ammonium reserve is exhausted. After that the crop will take up nitrate.

MADE FOR AUSTRALIAN FARMERS

eNpower was developed by the Incitec Pivot Research & Development and Agronomy teams, for Australian growers, with Australian conditions in mind, helping you get the most from every kilogram of nitrogen.

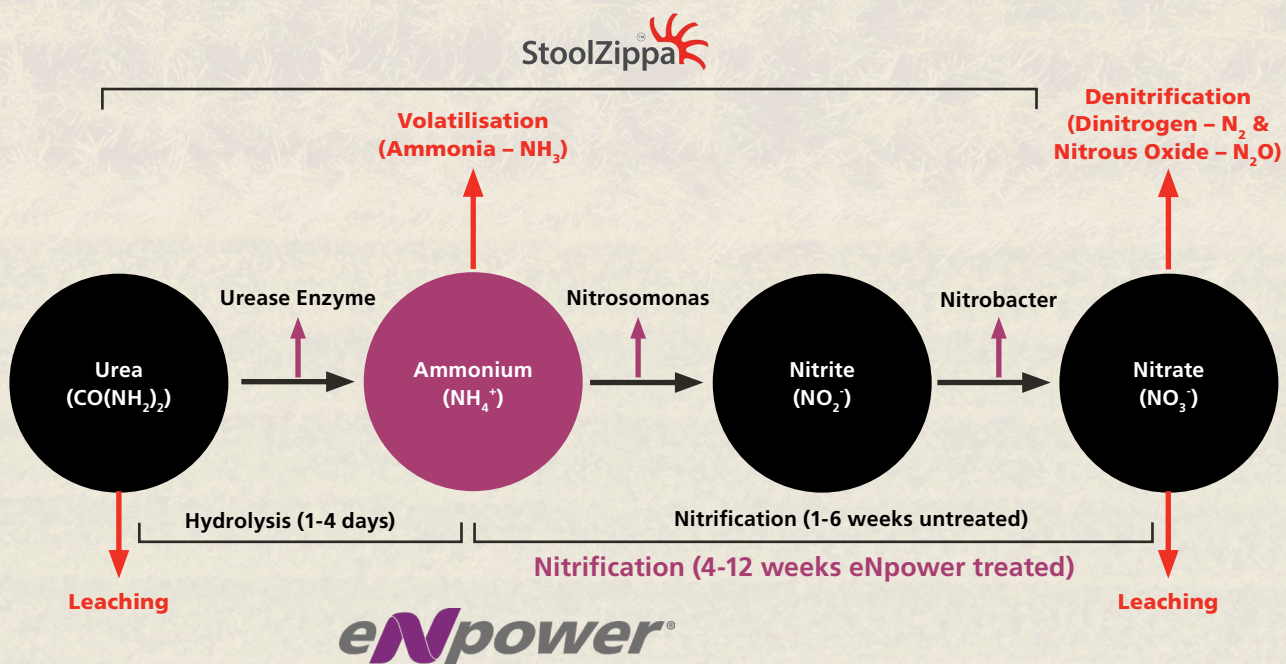
Proudly developed, tested, and patented in Australia.

Designed for Australian climate and soils.

Backed by years of agronomic research.



Figure 1: Holistic nitrogen management and the nitrogen cycle. eNpower delays nitrification of ammonium to nitrate. Loss pathways can be managed with a combination of management strategies including eNpower and Stool Zippas.



Source: Incitec Pivot, 2026.

KEY BENEFITS

- eNpower is coated using **next generation technology** that ensures uniform application and superior coverage fertiliser granules.
- **Reduces nitrogen loss by up to 80%**^{a, b, c} keeping more nitrogen available to the crop.
- Higher nitrogen **uptake efficiency**
- **Reduces** greenhouse gas emissions
 - » **eNpower reduces denitrification**, lowering emissions of nitrous oxide, compared to untreated nitrogen.
 - » **Nitrous oxide has 265 times the global warming potential of carbon dioxide (CO_2)**, can remain in the atmosphere for more than 100 years and is an ozone-depleting substance.

APPLICATION GUIDELINES

eNpower can be applied to both sugarcane plant and ratoon crops.

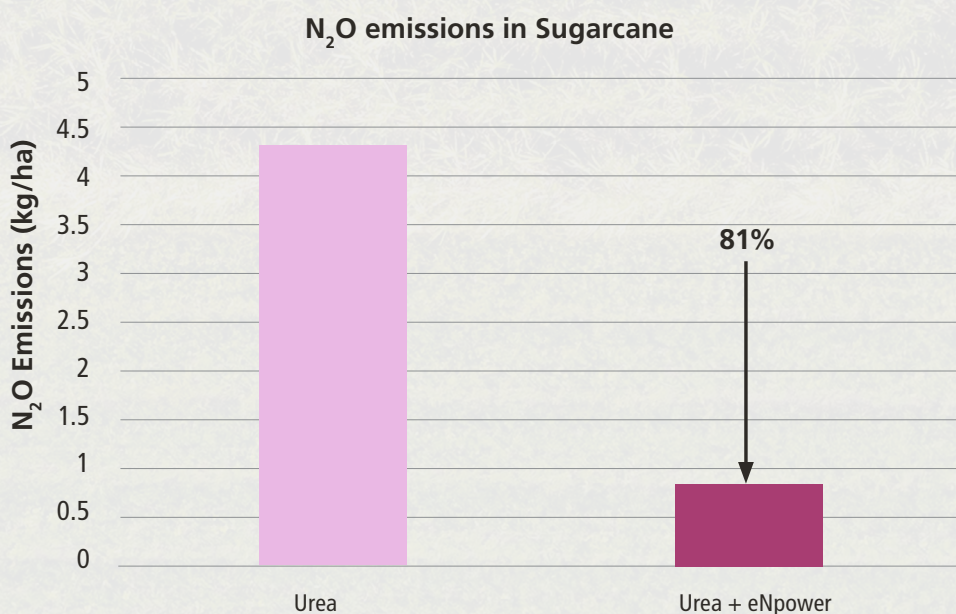
PLACEMENT

Sub-surface application of urea & urea-based blends

Ensure adequate soil coverage (i.e. 10cm of compacted soil cover) above the fertiliser band to mitigate potential volatilisation and runoff losses. Use of a Stool Zippa's or similar can be used to achieve this. This consideration applies to both conventional urea and eNpower urea.

PROVEN RESULTS

eNpower reduced N₂O emissions at Bundaberg in 2023. N rate 112kg N/ha.



Source: Reeves et al. 2024.

REFERENCES:

- Wang W et al (2016) Effects of polymer- and nitrification inhibitor-coated urea on N₂O emission, productivity and profitability in a wet tropical sugarcane crop in Australia. Proceedings International Nitrogen Initiative Conference.
- Grace P et al (2024) Revised emission factors for estimating direct nitrous oxide emissions from nitrogen inputs in Australia's agricultural production systems: a meta-analysis. Soil research 62.
- Reeves S, Wang W and Ginns S (2024) Mitigate N₂O emissions while maintaining sugarcane yield using enhanced efficiency fertilisers and reduced nitrogen rates. Nutrient Cycling in Agroecosystems, 128. pp. 335-340. <https://doi.org/10.1007/s10705-023-10323-8>

For more information Contact your local Incitec Pivot Technical Agronomist or visit www.incitecpivotfertilisers.com.au.

Soil testing and nitrogen budgeting through Nutrient Advantage and the NA Pro software can help in calculating appropriate rates.

DISCLAIMER This is a guide only, which we hope you find useful as a general tool. While Incitec Pivot Pty Ltd has taken all reasonable care in the preparation of this guide, it should not be relied on as a substitute for tailored professional advice and Incitec Pivot Pty Ltd accepts no liability in connection with this guide.