



ENTEC FOR SUGAR CANE EFFICIENT STABILISED NITROGEN

Give nitrogen more staying power.

Capture and utilise more
applied nitrogen.

Protect against the uncertainties and
extremes of cane coastal strip rainfall.

**Make your nitrogen work its hardest
with ENTEC treated fertiliser.**

incitecpivotfertilisers.com.au

ENTEC® is a treatment that keeps nitrogen stabilised and available in your soil for weeks, even months longer than with untreated urea.

It promotes more efficient plant uptake. Reduces the risk of leaching and denitrification. And shows significant potential to improve your crop yield.

Nitrogen management is a constant challenge for Australian cane farmers.

Some of the most unpredictable rainfall on the planet makes every fertiliser application a management challenge. Plus growing pressure to improve nitrogen uptake makes nitrogen use efficiency a higher priority than ever.



HOW ENTEC WORKS

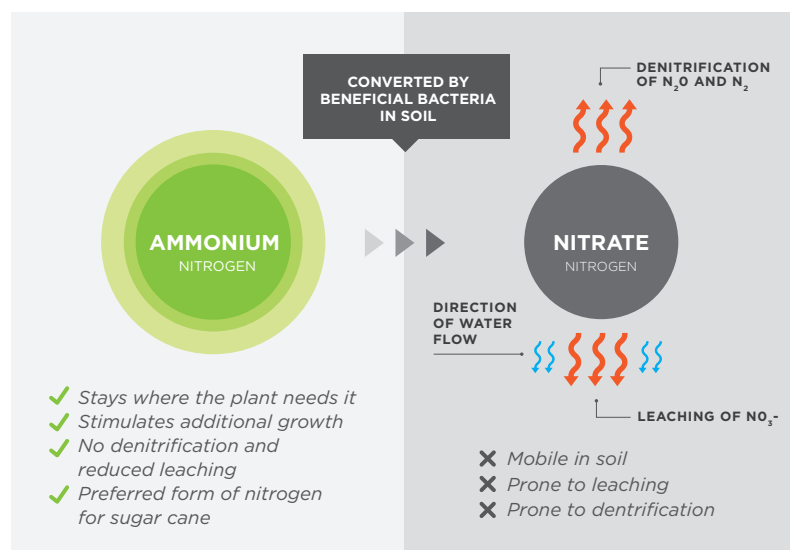
When conventional Urea fertiliser is applied, naturally occurring beneficial soil bacteria can quickly convert the more stable ammonium form of nitrogen into its more mobile nitrate form.

Conventionally, any nitrate not taken up by the plant is potentially easily lost to leaching and/or denitrification. It's a risk that's particularly acute in cane regions prone to unpredictable rainfall, like dry spells followed by drenching rain.

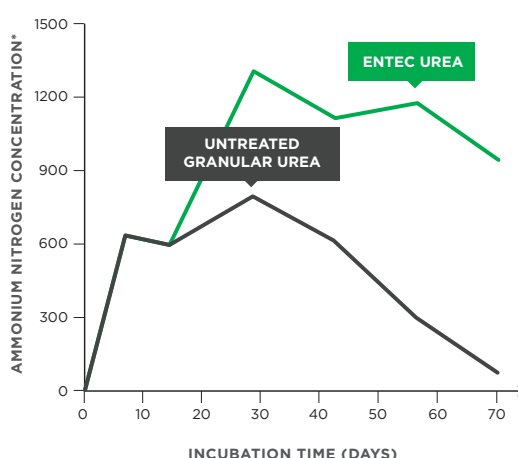
ENTEC treatment slows down the bacteria that convert ammonium to nitrate, holding nitrogen in the stable ammonium form for longer.

It makes more nitrogen available to the plant when it's needed – while reducing the risk of loss whenever rainfall or irrigation bring on wet conditions.

What happens to nitrogen in fertiliser?



ENTEC stabilises the nitrogen in the ammonium form



This experiment was conducted with urea in a moist acidic chromosol (Pin Gin) soil at 25 °C (pHw 4.5) (60% water filled pore space). Source: Suter et al. (2008)
*Unit of Measure is micrograms (µg NH₄⁺ N/g soil)

Why ENTEC?

REDUCES RISK OF LEACHING

ENTEC's stabilisation of the positive charged ammonium 'sticks' to the negatively charged clay component and organic carbon in soil – preventing it from being carried beyond the root zone with heavy or untimely rainfall or irrigation. Nitrate is negatively charged – 'repelled' by the soil's natural charge, (which is also negative) – thus more easily lost to leaching.

REDUCES RISK OF DENITRIFICATION

Unlike nitrate, ammonium has a denitrification potential of zero. Ammonium does not convert to nitrous oxide or dinitrogen gases in wet conditions. ENTEC protects against nitrogen loss to the atmosphere through denitrification.

HELPS CROP USE N MORE EFFICIENTLY

ENTEC provides potential for more nitrogen to be used efficiently by the plant when demand and uptake is occurring for stabilised ammonium. And because of its stabilising properties and lower risk of loss, ENTEC ensures more nitrogen can be used efficiently by the plant whenever moisture – a little or a lot – stimulates uptake.

PROTECTS AGAINST UNCERTAINTY

ENTEC provides a measure of much-needed protection against the worst that cane regions' unpredictable weather can throw at you. Your nitrogen – and your crop's potential – are better protected whatever happens after your fertiliser is applied.

CAN IMPROVE CROP YIELD AND PROFITABILITY

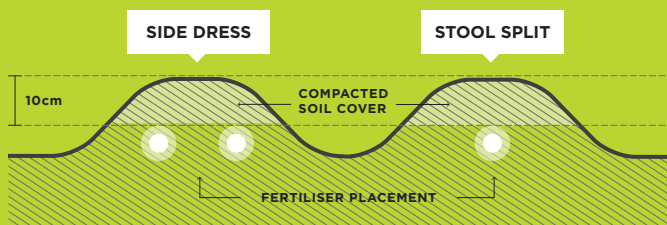
ENTEC's improved nitrogen use efficiency can potentially make a significant difference to cane yield, sugar yield and farm profitability.

OPTIMUM APPLICATION FOR ENTEC

Subsurface banded application to achieve 10cm of compacted soil cover. As a consequence:

- volatilisation potentials are minimised
- subsurface application results in cooler soil temperatures, and as a consequence ENTEC persists longer

ENTEC blend placement in ratoons



Data suggests a potential increase in yield with use of ENTEC treated urea

Based on pooled results from six trials (seven crops) over six years (1-2 years each)

CANE YIELD

+9.1%

SUGAR YIELD

+7.7%

And based on the assumptions about application rate, fertiliser cost and sugar price below

Additional fertiliser cost for ENTEC treatment

\$77 /ha

Based on an average Nitrogen rate of 180kg/ha over all trials (Note: some districts apply nitrogen at rates other than 180 kgN/ha)

Price differential for ENTEC treatment at IPF retail price 29 April 2016

Potential additional gross revenue (less harvesting cost)

\$226 /ha

Average sugar yield 14.67t/ha
Sugar price of \$450/t (Source: QSL average weight price 29 April, 2016)

Potential payback with ENTEC treated urea based on the above gross revenue information

SUGAR PRICE	Potential additional gross revenue with ENTEC (\$/ha)*	Return on Investment (ROI)
\$400	\$194.33	2.5
\$425	\$210.52	2.7
\$450	\$226.71	2.9
\$475	\$242.90	3.2
\$500	\$259.09	3.4

Based on \$77 additional ENTEC fertiliser cost

*ENTEC v Conventional (i.e. additional \$/ha with ENTEC increase), less harvesting cost

Based on pooled analysis of data from six trials conducted from Ingham (FNQ) to Broadwater (Nth NSW) between 2008 and 2013 by Incitec Pivot Fertilisers, Burdekin Productivity Services, Sunshine Sugar, Famacist, DSITIA and SRA. Incitec Pivot Fertilisers makes no representation that the yield improvements achieved in these trials are applicable to every farming situation, on all occasions. As local soil, climate and cultural practices vary considerably Incitec Pivot Fertilisers makes no representations or warranties as to the reliability, completeness or suitability for any particular purpose of the information provided. Before using these products, users should consult their local agronomic advisor.

To illustrate the potential significance of the results certain assumptions were made about sugar price, harvesting and fertiliser costs to give an indicative revenue per hectare. There are obvious limitations to these assumptions since they do not reflect all labour, land holding costs or other expenses. Actual results may vary. Factors such as weather and environmental conditions, soil condition and other variables will impact the results growers obtain.

ENTEC: Essential protection for your nitrogen investment

COUNT ON ENTEC FOR:

- ✓ Protection against leaching
- ✓ Protection against denitrification
- ✓ Improved crop nitrogen uptake
- ✓ Protection against cane climate uncertainties
- ✓ Potential for improvements in your cane and sugar yield

"I've used ENTEC for 5 years, and I'm convinced it's a winning product. It reduces the risk of leaching and denitrification, and I'm seeing a more consistent crop every year."

Graeme Blackburn

45-year cane grower, Mirani, Queensland
2016 WINNER - Mackay Sugar Sustainable
Management Practices Award

Visit incitecpivotfertilisers.com.au
or call 1800 009 832 to find your
nearest ENTEC supplier



How much N do you need?

Only with regular and routine use of strategic nutrient analysis (including soil, plant tissue and water analysis, if irrigating) can you tell just what you're missing, and how much you need to apply for optimum crop efficiency and yield.

Let Nutrient Advantage lend a hand.

For over 50 years, our Nutrient Advantage service has been helping farmers gain a productivity edge through reliable soil and plant tissue testing, and expert, localised nutrient advice.

**Why not give your farm the
Nutrient Advantage edge?**
Visit nutrientadvantage.com.au
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find out how we can help.

