Reducing nitrogen loss
If you’re serious about environmental targets in your best management practice plan, an enhanced efficiency fertiliser deserves serious consideration. Here’s why.

How it works
If you’re one of those who’s into the science as well as the end results, here’s some insight into how ENTEC® is designed to affect nitrogen fertiliser efficiency.

Win a $1,000 splurge at BCF
Tell IPF what you’d do with an extra $100/$200/$400 or more per hectare in your pocket at harvest, and you could win $1000 to put in that pocket for a big spend-up at BCF.

Field data from trials in Queensland and NSW reveal significant gains in cane and sugar yield
For those who think fertiliser is just fertiliser, this season may be the time to think again. An analysis of trial results by IPF show that cane growers could get more out of their crops and potentially put more in their pockets with just a little upfront thought about their nitrogen and when they apply it.

IPF is getting ready to challenge growers’ perceptions of the status quo in fertiliser treatment, with some compelling evidence of the big potential from use of their enhanced efficiency fertilisers over business-as-usual urea blends.

Analysis of the data collected in six trials conducted in Queensland and NSW over a period of six years (each of 1-2 years length) demonstrate the potential for significant yield increase from ENTEC treated urea compared with conventional urea. If certain assumptions about prices and costs are made, these increased yields also have the potential to increase revenue.

Results from a replicated small-plot trial near Sarina QLD* makes a strong case for using EASY N® where nitrogen application is split – a practice that is gathering momentum with innovative growers.

IPF Technical Agronomist Rob Dwyer has long been a strong advocate for best management practices in fertiliser use. And the results he’s seen in these trials have him especially excited.

“The science has always been solid.” Dwyer says. “We know that if we can get exactly the right amount of nitrogen to the plant as the plant needs it throughout the growing cycle, it has the potential to produce better yields. And the side benefits of reduced inefficiency and lower environmental impact are significant too.

“It’s nice to see evidence of the potential for increased yield. Growers know that this increased yield, most importantly, can lead to increased returns.”

For more information on these trials and the analysis done by IPF refer to Analytical Methodology (page 3) or contact your local Entec accredited dealer.

*Trial commissioned by Incitec Pivot Fertilisers and conducted by Farmacist Pty Ltd 2013.
Reducing nitrogen loss has benefits beyond dollars in the pocket

With increasing focus on best management practices in the sugar cane industry, anything that can reduce nitrogen losses from your farm is a big plus. And that’s exactly what the ENTEC is designed to do.

The treatment applied to ENTEC urea retains nitrogen in a stable (but still plant-available) form for an extended period, rather than it being in a form more prone to loss.

The result: more efficient use of the nitrogen you’ve paid for — less waste — and, importantly for the environment,

ENTEC aims to get more nitrogen into the rootzone (14C) form. Nitrite is prone to loss by leaching beyond the root zone and it is also susceptible to denitrification into the atmosphere under waterlogged conditions. By slowing down the conversion, the growing plant still has access to nitrogen in the ammonium form, but the majority of the nitrogen is not subject to leaching. With ENTEC, plants can get more of the nitrogen they need, as they need it in the growing cycle. The net result: less nitrogen waste, improved crop uptake and potential increased crop yield.

Data suggests increase in yield with use of ENTEC treated urea

Based on pooled data from six trials over 6 years (1-2 years each)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Cane Yield Increase</th>
<th>Sugar Yield Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTEC</td>
<td>+9.1%</td>
<td>+7.7%</td>
</tr>
</tbody>
</table>

What happens to nitrogen in fertiliser?

For the science lovers – here’s how ENTEC works

ENTEC acts to get more nitrogen to the plant at the right time. But it isn’t a ‘controlled release’ or ‘slow release’ product: it’s not coated with a compound that physically delays or regulates release of the nitrogen.

Instead, ENTEC uses a sophisticated treatment that works like a stabiliser — giving nitrogen fertiliser more staying power than normal urea blends, without ‘leaking off’ the nitrogen that crops need as they need it.

ENTEC slows down the bacteria in the soil that converts the ammonium (NH₄) form of nitrogen into the nitrate (NO₃⁻) form. Nitrite is prone to loss by leaching beyond the root zone and it is also susceptible to denitrification into the atmosphere under waterlogged conditions. ENTEC aims to get more nitrogen into the rootzone (14C) form. Nitrite is prone to loss by leaching beyond the root zone and it is also susceptible to denitrification into the atmosphere under waterlogged conditions.

Nitrate is prone to loss by leaching beyond the root zone.

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A regression analysis of the pooled trial data predicts a statistically significant 9% increase in cane yield and 7.7% in sugar yield with the use of ENTEC over conventional, untreated urea blends most commonly used by cane growers.

To show what this could mean financially, assumptions were made about sugar price and fertiliser costs to illustrate that the small additional investment in ENTEC treatment has the potential to result in a positive return (net of fertiliser cost) when compared with the control treatment only with Unipre.

To find out more about ENTEC’s potential to increase yield and put more dollars in your pocket, see your local accredited ENTEC dealer or visit enetcfertilisers.com.au.

By stabilising the nitrogen in the soil, making it less prone to loss and more readily available to the plant when it needs it.

“Based on these trials, the best results can be expected during wetter seasons when there is heavy rainfall within six weeks of application and greatest risk of reducing nitrogen loss,” continues Dwyer. “However even on average, over a wide range of areas and weather and drier seasons, ENTEC showed significant benefits.”

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Analitical methodology: these trials comparing ENTEC urea with conventional urea were analysed

The data from a series of 6 trials (3 cuts) conducted from Ingham (PNG) to Broadwater (Mackay) were pooled and analysed using regression analysis (Genstat 19th edition). The data showed a statistically significant (P<0.05) increase in sugar yield of 7.7% and cane yield increase of 9.1%. While not significant — the data showed EEC levels were 1.2% (or 0.05 unit of CCS) lower where ENTEC was used.

Full trial results and data tables are available from aganeticcommunity.com. enetcfertilisers.com.au.
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New data demonstrates potential for increased revenue with split application of nitrogen using EASY N

A cane grower has to have a very good reason to invest the extra effort in an additional application of fertiliser. Results just in from a new trial show for the first time just how much the payback for that extra effort might be.

In a replicated small-plot trial on duplex soil in a first ratoon crop of sugarcane near Sarina, Queensland, a split application of: urea up front for 60% of the nitrogen, followed by EASY N liquid fertiliser just before out-of-hand stage for the remaining 40%, produced significant cane and sugar yield increases over the most common single application treatments.

The associated potential for extra dollar earnings, even after the cost of fertiliser and a second application, is enough to make most growers sit up and take notice. Per the details in the chart (to the right), split application as conducted in our trial showed a range of between $210 to $447 difference in potential revenue per hectare, compared to a range of conventional fertilisers.

The trial was commissioned by IPF and conducted by independent agronomic consultants Farmacist Pty Ltd. (As with any trial, the results achieved are indicative to the individual site & the prevailing conditions during the time of that specific trial and growers can examine the potential for this system in their operation.)

In evaluating results, IPF Technical Agronomist Rob Dwyer pointed out: “The split application fertiliser provided promising performance even considering the extended relatively dry conditions in which this trial took place. He also noted that while split application might not be right for every grower, “if you can do it, these results suggest you really need to consider it.”

IPF dealers will be talking with growers about the possibilities for split treatment with EASY N in coming weeks and throughout the current season. If you want to find out more about the potential for use on your property, see your local dealer.

**Potential for more in growers’ pockets through split application**

<table>
<thead>
<tr>
<th>Cane yield (t/ha)</th>
<th>Sugar yield (t/ha)</th>
<th>Potential Crop Revenue (Gross $/ha earned after fertiliser and application cost)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea/EASY N 60/40 split treatment</td>
<td>93.15</td>
<td>14.37</td>
</tr>
<tr>
<td>Urea</td>
<td>84.45</td>
<td>13.15</td>
</tr>
<tr>
<td>Dunder</td>
<td>76.75</td>
<td>12.09</td>
</tr>
<tr>
<td>LSD (P=0.05)</td>
<td>7.50</td>
<td>11.5</td>
</tr>
</tbody>
</table>

To illustrate the potential significance of the results certain assumptions were made for split application of nitrogen using EASY N v. single application treatments.

- **Cane yield, sugar yield and potential crop revenue from split application of nitrogen with EASY N.**
- **Application Costs: Stool-Split = $30/ha; Easy N = $25/ha**

Win a $1,000 splurge at BCF

**What would you do with those extra gains?**

ENTEC® and EASY N® fertilisers are all about helping you get more cane and more gain. And we’d love to know what you’d do with all the extra dinkus you could be earning!

Just fill in the form here and tell us in 15 words or less what you’d do with an extra $100/$200 or even $400 or more return per hectare from your harvest. If your entry is chosen as one of the best, you’ll earn yourself one more gain: a cool $1,000 for a big spend-up at BCF®!

Three $1,000 BCF gift vouchers to be won

We’ll be drawing one a month in October, November and December, so get your entry in today.

Why wouldn’t you look at split application?

The main concerns growers voice about the innovative practice of split application of nitrogen fertiliser seem to be these...

1. “There’s too much trash on the ground.”
   The stage at which sidedress or stool splitting becomes impractical is exactly the time when a liquid fertiliser like EASY N shines. Being a high analysis, liquid nitrogen fertiliser it provides an easier, more practical way to get nitrogen through the trash and to the crop at the out-of-hand stage and to the plant at a critical stage in the growing cycle.

2. “I don’t have the right equipment.”
   It’s surprisingly easy to get set up to apply EASY N liquid fertiliser. For any grower with a high clearance boom spray, existing equipment can typically be used with only minor modifications. If a contractor is being used, the contractor is certain to have the right set-up.

   Split application is another task, but the best way to approach it is to apply the nitrogen as ‘solid stream’ directed spray, to the base of the stool, through a separate nozzle/tine/tank arrangement in the same pass as the routine out-of-hand herbicide application. Only the grower can decide if the extra work is warranted. However the potential return for that effort may no longer be a ‘who-knows-what’ question.

With results from a head-to-head trial now showing significant potential yield upside for split application, it should be worthwhile for a lot more growers to give it a go.