



AGRONOMIC INSIGHT

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Reducing runoff losses with ENTEC®



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One of the great things about ENTEC® is that it helps improve nitrogen fertiliser efficiency both for your crops and the world around us.

Reducing nitrogen losses from runoff means more fertiliser is available for your crop, but it's also vital for water quality in our streams, rivers, lagoons and oceans. Runoff losses happen when the rate of rainfall or irrigation exceeds the rate of soil water infiltration.

Fertilisers can flow with the water over the surface of the soil and off the farm. The first line of defence against runoff losses is effective subsoil application.

In the majority of instances, cane fertilisers should be applied into a furrow which is closed over with soil so that the fertiliser is buried under 10 cm of compacted soil cover.

Depending on the application equipment you use and the seasonal conditions, this may not be happening as effectively as you imagine.

The fertiliser band is generally placed at the base of the stool or centre of the bed where the crop is channelling rainfall down to the soil and the fertiliser can easily be taken up by the crop.

But if the fertiliser slot is left open, it will fill with water during a rainfall event, overflow into the inter-row and move off site, taking dissolved nutrient with it.

An open furrow also leaves the fertiliser exposed to potentially significant volatilisation losses (equivalent to surface applied urea).

Finger press wheels are a practical solution. If your fertiliser application set-up does not include press wheels, consider adding them this season. They are a cost effective and simple way to enhance the efficiency of your nitrogen fertilisers through achieving adequate compacted soil cover to minimise both volatilisation and runoff potentials.

The next line of defence in protecting against runoff losses is ENTEC.

In a downpour, gravity allows water to come out of the soil in the hill or bed and down into the inter-rows, where it can easily flow off the block.

Nitrate nitrogen is always ready and willing to move with water flows and this can result in a type of 'lateral leaching'.

ENTEC can potentially reduce these lateral leaching losses through the hill or bed by stabilising the applied nitrogen as ammonium for longer in the soil. Ammonium nitrogen is positively charged and will stick to the soil rather than move with water flows.

In comparison, standard urea converts to nitrate nitrogen in the soil in as little as a week. It is then vulnerable to denitrification and leaching losses. Research has already proven that ENTEC can reduce nitrogen runoff losses.

In a [Farmacist trial by Jayson Dowie](#) in the Burdekin as part of Project Catalyst in 2014/15, using ENTEC urea reduced the amount of dissolved inorganic nitrogen in the tail water by 22% compared with standard urea.

This season, consider ENTEC to reduce runoff potential.

Of the four major nitrogen loss pathways (leaching, denitrification, runoff and volatilisation) the first three may be reduced by using ENTEC, and both the third and fourth can be reduced with adequate compacted soil cover.

Take care to place your fertiliser under the soil with the furrow closed over with finger press wheels to achieve 10 cm of compacted soil cover.

For more information about using ENTEC this season, see your local ENTEC accredited fertiliser Dealer, or contact us directly.



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