

MANAGING NITROGEN IN EL NIÑO CONDITIONS

Rob Dwyer - IPF Tropical Systems Agronomist

eNpower® is known for its ability to better manage nitrogen (N) under wet conditions. What does this mean for dry conditions, especially considering the BOM is currently forecasting an [‘El Niño Alert’](#)? Counterintuitively, extended dry periods can actually result in a greater requirement for ammonium stabilisers. This article explains why.

Dry Times

While dry conditions may not immediately raise concerns about nitrogen losses, the use of effective nitrogen stabilisers can become even more consequential in these situations. In periods of extended dry weather, nitrogen management often takes a backseat in growers' minds. Growers and their advisers aren't immediately thinking about the risk of nitrogen losses from leaching, denitrification or runoff.

This is particularly relevant this season, with the Bureau of Meteorology (BOM) predicting an increased chance of an El Niño developing. The BOM's ENSO Outlook is currently at El Niño Alert. BOM (18 July 2023) assesses four criteria when making this prediction, and when these criteria have been met in the past, an El Niño event has developed around 70% of the time.

The purpose of the ENSO Outlook is to look ahead and assess the likely evolution of the El Niño-Southern Oscillation as it transitions through the different phases of ENSO (El Niño, La Niña and Neutral). It aims to forewarn the Australian community using a staged approach based on changes in the likelihood or risk of an El Niño or La Niña occurring.

In this case, growers should consider eNpower's record of success when applied in the dry, which lies in the recognition that dry periods are not permanent. When the rain eventually arrives, it can lead to significant nitrogen losses from leaching, denitrification, and runoff. This is where eNpower comes into play.

When it rains

How long eNpower remains active in the soil depends on biological activity. When soils are dry, eNpower remains active for longer. This means eNpower is likely to still be actively inhibiting the nitrification of applied fertilisers even after a few months of dry weather.

Often, when there is an extended period, the next rain event is a big one. That's when eNpower delivers good results for growers, because the nitrogen is stabilised as ammonium and available in the root zone for use when the crop starts growing.

Protection and Effectiveness

eNpower is typically active across all of the unpredictable seasonal conditions that cane growers face. Where agricultural soils have a

pH(w) of more than 4.5, nitrogen fertilisers are better protected with eNpower from leaching, denitrification and runoff with eNpower (Dwyer, 2019).

Even after several months of dry weather, applied fertilisers remain stable, ensuring the availability of nitrogen in the root zone when the crop starts growing. This becomes particularly valuable when a substantial rainfall event follows a dry start to the season.



Image: eNpower (pink in colour) fertiliser blend

Incorporating fertilisers into the soil with at least 10 cm of compacted coverage helps minimise volatilisation losses. Using tools like the StoolZippa®, which facilitates consistent and adequate soil cover, can further optimise the protection against volatilisation and runoff, thus preserving nitrogen availability for the crop.

In Conclusion

- Effective nitrogen management strategies can help growers unlock the full potential of their crops and maximise their yields in the face of changing seasonal conditions.
- As the likelihood of an El Niño event increases, it is essential for growers to proactively address nitrogen management challenges, even during dry conditions.
- Using eNpower as a nitrogen stabiliser offers numerous benefits, including prolonged effectiveness during dry spells, protection against nitrogen losses, and enhanced nitrogen use efficiency.

Further Information

For more information about using eNpower this season, please contact:

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