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Study finds enhanced efficiency fertilisers show increased nitroge efficiency and maintain productivity

The final report of an extensive research project into new fertilisers available in the sugarca has now been released.

The ***'Support of cane farmer trials of enhanced efficiency fertiliser in the catchments Great Barrier Reef (EEF60)'*** project and report has shown extensive on-farm trials have in nitrogen and productivity for farmers. The EEF60 project is a collaborative partnership betw sugarcane growers, CANEGROWERS, Sugar Research Australia, regional productivity ser agricultural economists from the Department of Agriculture and Fisheries.

The study was carried out over three harvests, on 74 sugarcane farms from Bundaberg to I funded by the Australian Government through the Department of Agriculture, Water and the Environment's Reef Trust and the Queensland Government's Department of Environment a Great Barrier Reef Innovation Fund; and identified cost-effective increases in nitrogen use ((NUE) and a reduction in nitrogen losses when using enhanced efficiency fertilisers (EEFs)

"CANEGROWERS managed this study and Sugar Research Australia (SRA) provided tech oversight, so growers had an independent analysis of enhanced efficiency fertiliser technol impact on farm budgets and field productivity. CANEGROWERS Chief Executive Officer Da said. "We thank all the growers who gave the paddocks and their time to seeing it through.

“This study evaluated the performance of EEFs relative to conventional fertiliser, and with the work now complete we have a better understanding of how reduced nitrogen application rates can offset the higher EEF price,” Mr Galligan said.

Two main types of EEFs were tested: controlled release fertilisers (CRFs) and nitrification inhibitors (NIs). Key project findings included:

1. Applying urea at 20% less than the SIX EASY STEPS® recommendation results in lost cane yield. Applying DMPP (3,4-Dimethylpyrazole phosphate, a nitrification inhibitor) treated urea at 20% less than the SIX EASY STEPS® recommendation maintains yield and profitability and also improves NUE.
2. Applying a CRF-urea blend (20% CRF & 80% urea) at 20% less than the SIX EASY STEPS® recommendation maintains yield and profitability and also improves NUE.
3. EEF blends with high proportions of CRF cost more, which made them less profitable to apply.
4. Evidence suggests that EEFs were most effective in improving NUE when high loss conditions were experienced, such as in sandy soils, under high rainfall conditions and when applied late in the season.

“This was the most extensive evaluation of EEFs undertaken to date,” SRA Executive Manager Industry Services Hywel Cook said. “The large number of trial sites and consistency in trial design enabled the collection and analysis of a wealth of data which determined what types, blends and rates of EEF perform better, where they get the optimal results - such as soil types, rainfall conditions and regions - and the best time for application,” Mr Cook said.

“The report concludes that trying EEF products when nitrogen losses are more likely is a good strategy that will not impact on productivity or profitability and will improve NUE and water quality; a great outcome for local waterways and the Great Barrier Reef lagoon.”

“The EEF60 project highlights the importance of collaboration between growers, industry and government to identify profitable solutions using innovative technologies,” Economics Manager at the Department of Agriculture and Fisheries, Mark Poggio said

- The final report and summary guidelines documents are available for download.

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