New water quality project promises a win-win for farmers and the environment

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For more than a decade, water quality improvement projects on the Cassowary Coast have been focused on fertiliser application rates. Considerable gains have been made to reduce nitrogen inputs and Dissolved Inorganic Nitrogen (DIN) runoff in both the Johnstone and Tully basins.

Recognising that further room for nitrogen reduction is limited or minimal in the region, a new $6-million project water quality project is aimed at identifying and implementing new opportunities to increase nutrient uptake in plants, thereby reducing the possibility of unused nitrogen entering waterways.

Cassowary Coast Reef Smart Farming is funded by the Australian Government's Reef Trust and the Great Barrier Reef Foundation and is managed by CANEGROWERS Innisfail. It has a focus on both the sugarcane and banana industries on the Cassowary Coast, which have been identified by the Reef 2050 Water Quality Improvement Plan as a high priority for the reduction of end-of-catchment anthropogenic loads of DIN.

Project leader Debra Telford said improving Nitrogen Use Efficiency (NUE) without compromising farm productivity and profitability is the project's main goal.

"It's not focused on nitrogen application as has been the aim of most other water quality projects over the past 14 years," she said.

"Instead, we are intent on improving productivity and profitability by refining nutrient management and farm practices to increase plant uptake of nitrogen.

"That will then keep nitrogen on the land and decrease the amount of DIN in our catchments."

More than 80 cane growers are taking part in the project, with some working on refining their nutrient management and others involved in developing enterprise-specific productivity plans.

The work is driven by key constraints associated with DIN losses and reduced productivity as identified by the South Johnstone Local Expert Analysis group (LEA), which is made up of local researchers, growers, industry stakeholders and agronomists.

Targeted extension support is providing risk profiles for root rotting disease Pachymetra, identifying nutritional deficiencies in the soil of older ratoons and developing plans for transitions to new cane varieties.

In the banana industry, tailored, holistic nutrient management plans are being developed for 30 growers through a partnership with the Australian Banana Growers Council (ABGC).

Working with the banana sector is ABGC Extension Officer Molly Blake, who is adapting learnings from previous sugar cane industry water quality projects for use on banana farms.

“We identified an opportunity to apply certain aspects of the SIX EASY STEPS nutrient management program used in sugarcane to banana crops,” Molly said.

“The banana industry has identified a clear need for formalised, holistic nutrient management plans that employ reflective practice to evaluate the impacts of application rates on productivity.

“This project has the ability to further refine existing nutrient planning based on regular professional advice.

“I’m taking soil and leaf testing into consideration, with ongoing adjustments for weather, time of year, crop stage and productivity.”

Unlike previous water quality projects, this will not be a one-size-fits all approach. Ms Telford said enduring practice change will be achieved through sustainable, tailored, co-designed management strategies that are supported by skilled extension staff and owned by each enterprise.

“This is an extension project tailored to meet the needs of each participating enterprise,” she said.

“Past water quality initiatives have relied on a prescriptive course of action, often overlooking key differences between farms and the people that manage them.

“Farming is not a recipe, and every enterprise and situation is unique.

“This project is working very closely with growers to evaluate their physical, economic and socio-cultural drivers and tailor a plan that works for them while delivering the best possible environmental outcomes.”

Water quality objectives include an overall reduction of more than 60-tonnes of DIN.

Sugar Research Australia, CANEGROWERS Tully, behavioural science organisation Evidn and University of Southern Queensland Professor Bernard Schroeder are also involved in the program, which is scheduled for completion in December 2024.

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