

Less fertilizer good news for the Great Barrier Reef

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James Cook University researchers have shown a way to potentially halve the amount of fertiliser dairy farmers use while maintaining pasture yields, providing improved protection for the Great Barrier Reef.

JCU's Dr Paul Nelson said [nitrogen](#) from fertiliser spread on fields can have significant environmental effects on creeks and coastal waters.

"Ensuring plants have sufficient nitrogen is important for profitable farming, but it must be balanced with the potential for losses to the environment.

"The enhanced-efficiency fertiliser we tested on a North Queensland dairy farm provides a means to improve this balance on dairy farms," he said.

The team applied a relatively new nitrification inhibitor - a chemical that slows the conversion of nitrogen to easily lost forms - that allows more time for the fertiliser to be taken up by the roots of the plant for which it was intended.

Just half the usual amount of fertiliser was needed to achieve the same amount of pasture growth in a one-year trial.

"This is good news for farmers and for the Great Barrier Reef," said Dr Nelson.

The researchers also found that most of the excess nitrogen from the paddock was lost via leaching through the soil. The loss in surface runoff was negligible.

"So it worth determining optimum rates of this new fertiliser as a way of reducing leaching of nitrogen while maintaining profitability," Dr Nelson said.

He said that although [dairy](#) pastures are a relatively minor land use in the tropics, the amounts of nitrogen-based fertiliser they use are large, so reductions in pollution could be significant.

More information: J. Koci et al, Tropical dairy pasture yield and nitrogen cycling: effect of urea application rate and a nitrification inhibitor, DMPP, *Crop and Pasture Science* (2016). [DOI: 10.1071/CP15400](#)

Provided by James Cook University

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