



The Heart of Innovation Driving Practice Change

Productivity Doesn't Cost the Earth

PROJECT CATALYST



Great Barrier
Reef Foundation

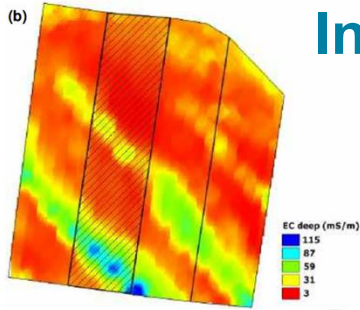


The Beginning



Innovation Outcomes

- Banded Mill Mud Application
- Cane Fallow Legume Cropping
- EM (Electromagnetic) Mapping
- Controlled Traffic
- Wider Row Spacing
- Safely Reducing N Rate



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Current Projects



DIN Savings (P2R Nov 2022)

- ***MWWQP***
 - *7.5t Target*
 - *8.0t Actual*
- ***LHWQP***
 - *4.2t Target*
 - *48.3t Actual*
- ***The Coca-Cola Foundation***
 - *3.2t Actual*



Growers and Project Design



MWWQP Grower Engagement

- Nutrient management plans optimised
- Practice change(s) adopted
- Ongoing refinements to nutrient plans
- Case studies / fact sheets
- Grower support



Case Study

Nitrogen Reduction to old ratoon blocks



| | |
|--------------------|----------------------|
| LANDHOLDER | C5MW010006 |
| LOCATION | Homebush |
| CATCHMENT | Plains Creek |
| RAINFALL | 1500 mm |
| PROPERTY SIZE | 35.81 |
| ON-GROUND PROVIDER | Nutrien Ag Solutions |

Project Catalyst is a grower-led sugar cane innovation and adoption project that explores, develops and validates farm management practice change to improve the enduring water quality of the Great Barrier Reef.

BROADER ADOPTION VALIDATION & GROWER SUPPORT

Through the trial, two growers undertook the Mackay Whitsunday Business and Unit Trials program to deliver information, resources and best practice advice to other growers in the region. The program includes a grower support program, professional on-ground service provision, technical advice to assist and validate management change practices. For one grower, the program includes a grower support program, professional on-ground service provision, technical advice to assist and validate management change practices. For one grower, the program includes a grower support program, professional on-ground service provision, technical advice to assist and validate management change practices.



Old Ratoon Blocks A1, B1, C1 - Practice 10 application after harvest



Old Ratoon Blocks and ratoon for water sampler



Photo courtesy Nutrien Ag Solutions

GROWING LEGUME AND MIXED SPECIES FALLOW CROPS
IN THE MACKAY WHITSUNDAY REGION - THINGS YOU NEED TO CONSIDER



DISCLAIMER This guide is adapted from the joint HCPSL, SRAA, Project Catalyst publication Growing Legume and Mixed Species Fallow Crops in the Herbert Region - Things You Need to Know, published 2019. This guide provides information to support fallow cropping in the Mackay Whitsunday region specifically and Project Catalyst acknowledges the authors of the original Herbert region guide.

Project Delivery



Nutrien Ag Solutions engaged to deliver Project Catalyst's MWWQP program

- Legume & mixed species fallow cover cropping
- Reducing N following a good fallow crop
- Reducing N on plough-out and ratoon crops
- Reducing N on older and late ratoons



Water Quality Monitoring

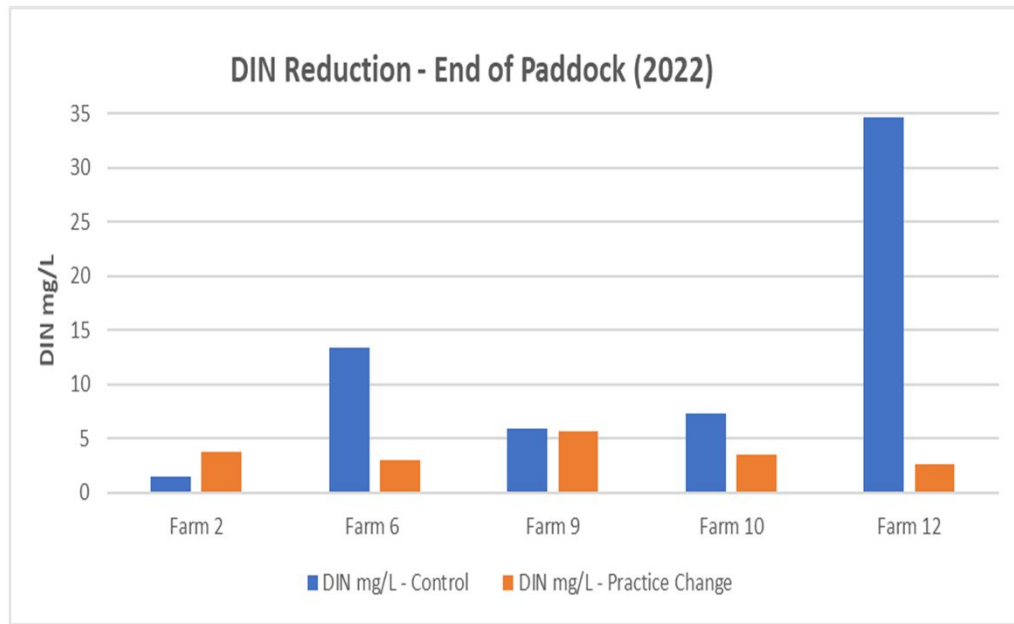
- Sampling conducted to compare practice change to non-practice change activities
- Up to four monitoring events collected per season
- Nutrient concentrations compared



Water Quality Findings 2022 Season



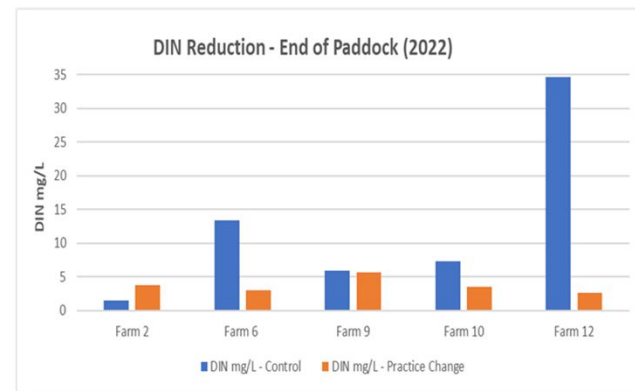
- Clear and consistent trends to support a reduction in runoff DIN for majority of sites
- Results for one farm were unexpected – what could have happened?



What Does it Mean?

| Site | N Reduction | Control DIN mg/L End of Paddock | Practice Change DIN mg/L End of Paddock | P2R Reduction DIN kg End of Catchment |
|---------|-----------------------|------------------------------------|--|--|
| Farm 2 | 20kg on Plant Cane | 1.43 | 3.69 | 90.8 |
| Farm 6 | 30kg on Older Ratoons | 13.41 | 3.01 | 0 |
| Farm 9 | 11kg on Late Ratoons | 5.93 | 5.7 | 130 |
| Farm 10 | 26kg on Older Ratoons | 7.32 | 3.53 | 33.5 |
| Farm 12 | 11kg on Older Ratoons | 34.7 | 2.65 | 11.5 |

- Change is happening
- Context is Important
- P2R Projector results do not directly reflect on-farm water quality improvements



Take Home Messages



- Baseline KPI's exceeded
- Scalable delivery
- Monitoring provides useful data
- Growers achieving significant DIN reductions that positively impact the Great Barrier Reef



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Building Enduring Outcomes

