

ID: QUT 11478

Peter Grace

Major capital investment: Climate-smart Agriculture Program: nitrous oxide analysers'

Organisation: Queensland University of Technology

App Type: Major Capital Item

Report Type: Small Grant Final Report

R&D Manager: Nicola Cottee

Due: 30 October 2025

Submitted On: 15 April 2026

Report ID: 2112

▼ Grant Summary

CRDC ID:	QUT 11478
Project Title:	Major capital investment: Climate-smart Agriculture Program: nitrous oxide analysers'
Project Start Date:	1 November 2024
Project End Date:	30 October 2025
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Organisation:	Queensland University of Technology

Project Summary:

The small project was the capital investment for 2 Licor portable N2O lasers which provide continuous monitoring of greenhouse gas emissions from cotton fields in real time. These were delivered to QUT prior to the 2025/26 season and deployed at two locations - Narrabri (NSW) and Jondaryan (QLD) connected to QUT automated chambers.

Outcomes & Impact for Industry:

Nitrous oxide is a potent greenhouse gas and is mainly sourced from the transformation of nitrogen fertiliser after application in the field. Nitrous oxide is highly episodic and primarily emitted during irrigation or rainfall events. The use of automated gas sampling chambers linked to continuous analysis as afforded by the Licor lasers ensure that high quality emissions data is being collected to develop strategies to reduce emissions.

M&E Outcomes: Number of outcomes achieved. 2

People Connections:

Field walks have been undertaken at both Narrabri and Jondaryan sites and attended by both growers and agronomists.

M&E People: Number of connections achieved. 100

Learnings:

The measurements are critical to ensure high quality data is available to develop low carbon cotton farming systems which will ensure profitability is maximised through the production of sustainable cotton.

M&E Learnings: Number of learnings and planned actions from the project. 2

Do you have recommendations for CRDC (eg RD&E gaps)?

The current measurements being undertaken are part of a joint DAFF/CRDC investments under the Climate Smart Cotton project. CRDC and CottonInfo education programs are providing growers with a keener sense of sustainable cotton production, in particular the critical role of nitrogen fertiliser management.

Comment on project expenditure, noting any changes from the application budget.

Project funds spent entirely on capital purchases of 2 Licor LI7820 portable lasers.