



CASE STUDY

Billy Browning - Sustainable Cotton, Narromine NSW

EMISSIONS AVOIDED AND PRODUCTIVITY MAINTAINED

Billy Browning farms in the Macquarie Valley Region of New South Wales, where he produces irrigated cotton and broadacre crops. Billy completed a Farm Emissions Profile with Nutrien Ag Solutions in 2023 and wanted to further his understanding of the use of nitrogen inhibitors to reduce the environmental footprint of his cotton crop.

"There are inhibitors available that have the potential to improve nitrogen use efficiency and benefit the environmental footprint of crop production. If these products are also good for my business, I should be using them." said Billy. "I worked with Nutrien's Sustainability Field Manager, Charles Starkings, my agronomist and the team at the Nutrien Narromine branch to develop a protocol to understand the impacts on productivity and farm profitability of using urease and nitrification inhibitors applied to urea for pre-plant and in-crop use."

"Nitrogen supply was unlikely to be a limiting factor this season so achieving a significant yield response was unlikely. We were able to model useful reductions in nitrous oxide emissions," says Charles. "A dual inhibitor was applied to the urea used in the treated areas, containing both a urease and a nitrification inhibitor. Urease inhibitors minimise volatilisation losses of ammonia from applied urea and nitrification inhibitors reduce both denitrification and leaching losses of nitrogen."

SUMMARY

52ha: Split into 11 bankless irrigation bays

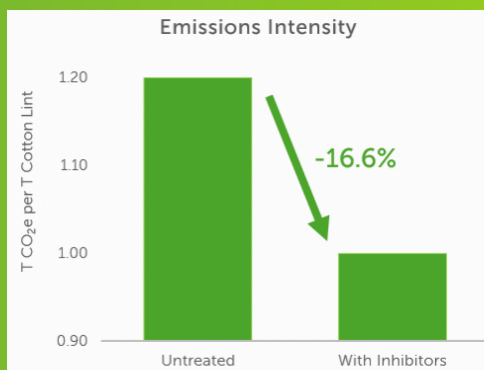
Planted: Friday 20th October 2023

Harvested: Thursday 9th May 2024

Urea dose: 620kg/ha +/- inhibitor

Yield: No significant yield response between inhibitor treated and untreated bays

Avoided emissions: 0.58t CO₂e/ha within fully treated areas, modeled using GAF



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