

HEIGHT NO PROBLEM FOR INNOVATIVE ISIS GROWER

By Wayne Griffin

A quest to find efficiencies and cut production costs while maintaining yield and reducing environmental impacts was the driving force behind an innovative fertiliser trial being carried out by Childers cane grower Chris Russo.

In an industry first, the 36-year-old Isis grower is trialling a split application strategy that includes injecting liquid fertiliser directly into the root zone up to 150 days post emergence.

If successful, the system could potentially change the way cane growers across the industry fertilise their crops.

"The whole idea came about because we were looking for ways to get the most from the nitrogen we're putting into the soil," Chris said, when *Australian Canegrower* visited the Russo farm recently.

"We wanted to make sure the cane was getting the nitrogen when it needed it and that we were losing as little as possible into the environment, because that is just wasted money."

Together with his father, **Pete**, and brother **Jeremey**, Chris farms around 800 hectares of irrigated caneland across two properties in the Farnsfield region.

Like many others in the area, the Russo's also grow peanuts as a rotational crop, which they sell to the Peanut Company of Australia in Kingaroy.

In early 2016, Chris attended a nitrogen efficiency seminar hosted by Professor **Mike Bell**, Chair of Tropical Agronomy at The University of Queensland's School of Agriculture and Food Services.

"Mike was speaking about nitrogen efficiency and when you should be fertilising your cane. He was of the opinion that the cane is not chasing the nitrogen until 150 days post emergence," Chris said.



"The problem is, 150 days out of the ground is December-January. In a good season the cane would be six foot tall at that stage, so how do we get the nitrogen into the ground?"

"There wasn't any machinery being used in the industry that was big enough to do it, you'd end up snapping cane. And to go and just spray nitrogen on top of the ground doesn't work."

Thus began Chris's quest to source an implement that would allow him to apply fertiliser when the crop was already mature.

In the end, he stumbled across the perfect piece of machinery almost by accident, while researching a new sprayer to replace the farm's old Miller N2.

"I went onto the Miller website and came across a video of a Miller Nitro with an implement on the front that looked like exactly what we needed," Chris said.





The implement in question was Miller's Injection Toolbar, designed specifically, according to the company's website, "for the precision application of liquid fertiliser between corn rows."

The problem for Chris was that the toolbar wasn't available for purchase in Australia at that time.

Luckily he had another stroke of good fortune.

"In October last year we went down to Dalby to look at a Miller Nitro sprayer that we were thinking of buying," Chris said.

"In speaking to the reseller, we explained the idea of a toolbar that we'd seen used in conjunction with the sprayer.

"It turned out the reseller had himself used a similar modified toolbar to apply fertiliser to corn in the Downs. We acquired this bar along with the sprayer, and hoped that once we got it home we could modify it to suit our needs.

"We've had to make a few modifications. It's 12m wide when fully folded out and they used to open manually, but we've added all the hydraulics to it. We've also chopped it down to suit our farming system and we've added other things.

Continued on page 18 ►



Pictured: The Russos' new Miller Nitro and modified toolbar allows them to split their fertiliser application and apply nitrogen when the crop needs it most.



Pictured: Chris and Peter Russo, together with Peter's other son Jeremey, farm 800 ha of caneland in the Farnsfield area, north of Childers.

"Right now we're trying to put bigger coulters on, going from 20 inch to 24 inch coulters."

After the initial modifications, Chris and Peter wasted no time in putting the sprayer-toolbar combination to work on the family farm.

"We used it all season last year, all of our ratoon cane was fertilised with it.

"It's hard to quantify the difference it has made because it was a hard growing season, but we've used a lot less fertiliser and we definitely haven't lost anything in yield. So in that respect it has saved us on input costs.

"This season we put on 40 units of N, with our P, K and S. We'll come through again in November/December and go with another 70 units of N.

"Prior to this we were easily using 140 to 160 units, whatever Six Easy Steps said was right for us. So to drop 30 to 50 units, it's a significant reduction."

And it's not just in nitrogen use that the Russo's have found efficiencies. They are also saving time - lots of it.

"I can cover over 40 ha a day with this machine, which is really efficient," Chris said.

"I can also pick the times I want to fertilise at short notice.

"It's an easy set-up and we can go from broadacre spraying to fertilising in about 15 minutes.

"If I can see a rain event coming I can just go out and fertilise and I don't have to worry about irrigating in.

"With your traditional farming methods, you can only do so much in a day and you're doing all your fertilising early in the season.

"It takes up a lot of time and you also have to use more fertiliser because you're losing a certain amount to the environment.

"The other efficiency we made is we can do our inter-row spraying with this combination.

"We just drop the wheels off and attach nozzles. It's about a 45 minute job to change that over and it was very inexpensive for the initial set up.

"It's also one less machine we need on the farm."

The modifications to allow the application of herbicide have been dramatically effective, reducing the time taken for this task from about three weeks to just four days.

"The benefit of this is not so much that we have more free time, but that it frees up time for other jobs," Chris said. ►



Australian Government

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Check out the November 6 edition of *Australian Canegrower* for an article from Professor Mike Bell on strategies for improving the efficient use of fertilisers in sugarcane.



It takes as little as 15 minutes for Chris to change over from broadcast spraying to fertilising.

TRIALS

Earlier this year Chris secured funding under the Federal Government's Reef Programme to conduct trials of his innovative fertilising strategy.

"We're going to run a series of four simultaneous trials to see which performs best," Chris said.

"The trials will all be done in the same block, so on the same soil type. I've got two beds of Q208 which has just been cut now. It was plant cane so it's going to be first ratoon we're doing the trials on.

"We'll run our original fertilising system in one - so one shot of fertiliser, 160 units of N as a granular on top of the stool, as is our traditional farming method.

"We have a split application of 40 units and then 100 units using our new system. The third will be a full shot of liquid at the start point and on the last we'll go with no N at all.

"Because we can cover four complete rows, it gives us enough cane to get a good sample through the mill and receive whole range of information."

Unfortunately for Chris, the funding only covers one and a half growing seasons. But he's hoping to team up with another research body to continue the trials for the complete crop cycle.

"We've found it to be a cheaper and easier way to fertilise, hopefully the trials

prove it's also a more effective way than the traditional method," Chris said. ■



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