

Lifting cotton yields with a zone focus

St George grower, Cleave Rogan, took a big step forward in his precision agriculture journey last year by applying Big N at variable rates on 500 hectares prepared for irrigated cotton.

Cleave has been collecting yield map and soil test information for about five years, to register where paddocks are yielding the most cotton and where they could be improved.

He has used this information to make sure paddocks are level and to fine tune management techniques like the timing of irrigation — and to bring average yields up by fixing any area-specific problems.

Applying Big N at variable rates takes his program to another level.

Cleave said setting up the technology to apply Big N at variable rates was easy.

He left the technical side of things to his local dealer, Queensland Cotton in St George, SciAg in Dalby and Incitec Pivot. They set up a yield monitor with variable rate capabilities (the Ag Leader PF 3000), a Raven flow

controller (the SC700) and a Trangie Rotaflow.

The maps were created by SciAg, using their SST powered information lab, one of only two in Australia.

“They helped us create zones within our paddocks, develop a variable rate map and set up the necessary equipment,” Cleave said.

“In the end, all we had to do was drive the tractor.”

Cleave created between two and four zones in each paddock, with each zone being at least 40 hectares in size.

“We wanted to start off fairly slowly, not split the country up into 25 different zones all with different rates,” he said.

Rates varied by about 30 kg per hectare of nitrogen. For example, on some double-cropped country, the rates varied from 160 kg per hectare of nitrogen to 190 kg per hectare of nitrogen.

Cleave described the magnitude of variation in their cotton yields as “just enough to continue tweaking”.

“Some areas are probably 20 to 30 per cent lower than the highest yielding areas,” he said.

“Our ultimate goal is to achieve the highest yields possible.”

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Cleave Rogan found moving to variable rate Big N easy, with help from Queensland Cotton, SciAg and Incitec Pivot and his extensive bank of paddock information.



Cleave applied Big N at several rates in his irrigated cotton country, based on paddock history and his records of yield performance.

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sible across the paddock and get a higher return on our investment in fertilisers.”

He is already achieving yields up to 10–11 bales per hectare on fully irrigated country.

“I know where the high yielding parts of the paddock are — now I’m just hoping to bring the others up to the

similar standard,” he said.

“The extra nitrogen will probably bring it up about 70 per cent of the way, then we’ll look at varying the rates of starter fertilisers or other management changes to further improve.”

Cleave already has the technology to apply Granulock ST-Z at variable rates. Last year he used it to apply his starter fertiliser evenly across the paddock at one rate. 🌱