CENTRE PIVOT INVESTMENT DELIVERING YIELD & COST SAVINGS

FOR TONY BUGEJA, GROWING THE BEST CROP POSSIBLE IS ESSENTIAL FOR PROFITABILITY, AND HE IS MAKING THE MOST OF OVERHEAD IRRIGATION TO ACHIEVE PRODUCTIVITY GAINS AND IMPROVE EFFICIENCY. *BY BRAD PFEFFER*

Irrigation has been one of the last things on Tony Bugeja's mind for most of this year.

Throughout late summer and early Autumn, his ground has been mostly saturated from rain and there has been very little need to put any water on.

It was a different story for the latter months of 2018, though, when drought gripped the region and triggered some of the worst bushfires on record.

For Tony, who farms with his son Mark and brother John, it meant that the family had their irrigation infrastructure running flat out.

Growing cane on about 350 hectares near Homebush, the Bugejas have invested in five centre pivots starting in 2011. The pivots range from 250 metres to 405 metres.

"When the heat was on, and the time of the fires in the Pioneer Valley, we had some of the pivots putting on up to 40 millimetres for each circle. The crop was sucking it up and our g-dot moisture sensors were showing us that the crop needed it," Tony said. "The evaporation rate was incredible, but we could still see the growth in the cane."

Six months later, and even with a turn in the wet season, he can still see that this year's crop is in a good position thanks to the investment in irrigation in the closing months of 2018.

Beyond the visual estimate, he also has confidence in the irrigation based on past on-farm trials that have given him numbers on yield and cost.

"We did a full analysis comparing pivots to water winches about six years ago, comparing labour and energy. Through that we found the water winch was costing us roughly $33 per hectare more than the pivot."

He followed this up with weigh trials to assess yield, assisted by Farmacist, and also saw a productivity gain under the pivots.

"This was in a block of Q240$^{(t)}$ plant cane and we could see the difference under the circle, compared to the triangle corners under water winch," Tony said. "I thought it would be in the range of 25 tonnes per hectare, but it ended up being 42 tonnes per hectare with the same amount of nutrients.

"We're not saying that we'll see that all the time, every year, but those results were an eye-opener to us.

"Centre pivots aren't cheap, but you don't buy them for one year. When you look at the cost saving in operating expenses, and even if you estimate 20 tonne per hectare in increased production, and look at that over a 10-year period, I reckon we're on the right track."

The Bugejas have two pivots on electricity, two on diesel, and one on both.

Tony said he didn't see much cost difference between the electricity and diesel. While the diesel has the benefit of being variable speed, they had chosen diesel for those sites because there was no existing power and it would have been uneconomic to run lines there.

He said the one pivot with both diesel and electricity is generally run at diesel during the day and electricity at night to take advantage of night time electricity tariffs.

"We also find the pivots deliver benefits to other parts of the farming operation," he said. "So if you need to put on 15mm or 20mm after a chemical application, you can know the chemical is in place and manage your farming practices more easily."

Water is sourced from bores, re-use water from the Mackay city, and their own 300 megalitre on-farm storage, which has also delivered major environmental benefits in capturing run-off water.

Harvesting their own cane, they also cut farms in halves or quarters to allow them to run the pivots on a half or quarter circle. Nutrients are applied straight after harvest and the crop irrigated as soon as possible.

"The quicker we can get the cane to uptake nutrients, the more time it has for making sugar.

"We have a variable nutrient rate program in place with our agronomist, Farmacist, and are reducing nutrients outside the circle of the pivot, into the corners. We still irrigate the corners with water winches, but we are seeing smaller cane outside the circle.

"We are always looking for ways to improve our input efficiency."

He is the first to admit that the price of electricity and water has put pressure on margins, even with the investment in overhead irrigation. Despite the expense, though, when he looks at the yield numbers and costs he also reckons that irrigating and growing the best possible crop is essential for profitability.

"The increase in power in the last 10 years is absolutely phenomenal, but it has made us look for efficiencies," he said. "We don't benchmark ourselves against other farmers, but with our accountant benchmarking ourselves against last year's figures.

"The sugar price is beyond our control, so we are focused on growing the best crop possible." ■

(Over page) *Central Region grower Tony Bugeja says the investment in centre pivot irrigators is helping to reduce costs and drive productivity improvements.* ***(Above)*** *One of the Bugeja family centre pivots.*

For more information on irrigation systems and efficiency, you can access the SRA Irrigation Manual under 'growers and millers' on *sugarresearch.com.au.*