

BMP adoption: what's the economic impact?

Adrian Darveniza has implemented a range of new practices as part of Smartcane BMP adoption, with these the subject of a recent economic analysis.

An economic analysis of BMP adoption has shown Adrian Darveniza the impact of improved farm practices to his bottom line.

Like many farmers, Adrian had read the magazine articles, been to field days, and spoken to extension officers about the benefits of practices such as fallowing, widening wheel spacings, and fine-tuning nutrient and herbicide applications.

From that experience, he knew the benefits were real, and over the years the family has always sought out best practice and innovation. The family farm, which is located on the footstep of the South Johnstone mill with about 240 hectares of sugarcane, has been familiar with seeing new technology and ideas adopted quickly.

Adrian returned to the farm in 2003, and took over as manager in 2010. Building on the previous work of his father, Adrian has implemented a range of best management practices that have seen the farm gain Smartcane BMP accreditation.

The changes included moving from a 1.5m to 1.8m wheel spacing, moving from plough-out/replant to include a bare fallow at the end of the crop cycle, following the SIX EASY STEPS for determining nutrient requirements,

and working with the Department of Agriculture and Fisheries (DAF), Queensland, on constructing a dual-herbicide sprayer.

The transition of sugarcane growers towards BMP adoption was the subject of a project funded by SRA and investigated by DAF (and Lifecycles) to evaluate the economic (and environmental) implications of Smartcane BMP adoption. The project examined six farms in different areas to provide a snapshot of the economic impact of BMP adoption.

Analysis of the Darveniza farm showed an annual improvement in farm operating return of \$160/ha, or about \$38,000/year, as a result of lower operating costs and productivity increases after BMP adoption.

The economic analysis indicated that the biggest contributing factors to the farm's operating costs were:

- Fertiliser costs down by \$103/ha (a 64 percent contribution to the overall change in operating costs);
- Fuel, oil, and labour down by \$19/ha (12 percent contribution);
- Herbicides down by \$19/ha (12 percent); and
- Planting and harvesting down by \$14/ha (9 percent).

While making various BMP changes, Adrian also shifted to wider row spacings. "For us, it wasn't a big expense shifting to wider row spacings," Adrian said. "We already had a high-rise tractor that was on 1.8 metres, so everything else was easy to widen."

Between the wide rows and the dual herbicide sprayer (which is now a triple herbicide sprayer) he is spending less time driving back to the shed.

"Previously, I was probably getting about 4 hectares of spraying done at a time, while now it is 7ha, so I know I have to take something to eat or I'll be getting hungry," he said.

"The economic analysis showed me the sprayer is saving me money and time, and giving a better kill with the weeds. The glyphosate in the middle of the row kills everything and does a magic job on weeds like Singapore daisy and sedges, as it floods regularly here and we have a relentless problem with weeds.

"The glyphosate is killing the weeds that normally laugh at the normal Gramoxone / diuron mix."

Adrian has converted the sprayer to three tanks: one spraying the inter-row, one

The case study at the Darveniza farm also included an environmental analysis, conducted by Lifecycles, finding that BMP adoption can result in economic and environmental outcomes and can add value to farming businesses.

The environmental analysis indicated that following the BMP changes, fossil fuel use decreased by 28 tonnes over the crop cycle, mostly off-farm due to less fertiliser being produced at the factory and supplied to the farm. The analysis also indicated that carbon footprint was reduced by 23 percent overall. In addition, after BMP adoption the risks of nutrients and chemicals potentially entering waterways reduced by 17 percent and 48 percent respectively.

Caleb Connolly, an agricultural economist from DAF, said: "I encourage growers who are considering BMP changes to make a start and seek expert advice. Adrian's journey shows that ongoing changes may become more manageable as you get the ball rolling and build on your existing knowledge and connections with advisors.

"Sometimes the degree of economic and environmental benefits after transitioning to BMP can be sensitive to changes in cane yield, so it's important to consider unique farming business circumstances and find what works for you.

"DAF's Farm Economic Analysis Tool (FEAT) is one tool that's available to help you consider the economics of your farming business."

To access FEAT and explanatory resources, visit www.daf.qld.gov.au/plants/field-crops-and-pastures/sugar/farm-economic-analysis-tool. The six project case studies can be downloaded from www.publications.qld.gov.au/dataset/best-management-practices-for-sugarcane.

spraying the row, and one over the top of everything.

"We have some vines and weeds that grow very fast and germinate before the grasses. To catch them with the Irvine legs we would have to spray early – but then the grasses haven't germinated, which would mean a second pass or returning later with the boom.

"This way we can wait for the grasses to germinate, and clean up the weeds that are too high. We just switch on the over-the-top tank as we need it."

Modifications to machinery were necessary to enable the practice changes on Adrian's farm. The cost of implementation for Adrian's particular circumstances were only \$2200 or about \$9/ha.

Research has indicated that cane yields can increase considerably in response to a well-managed fallow period. Adrian has progressively improved his fallow management and is now trialling legumes as a break crop. He has had good results with mill mud, which he said was easier with the mill being almost on his doorstep and reduced his fertiliser costs overall.

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(Over Page) Adrian Darveniza has seen the positive impact of Smartcane BMP Adoption at his farm, backed up by an economic analysis through DAF Queensland. (Below) Adrian with his tri-herbicide sprayer.

