

## Next Gen Innovator – Phil Deguara

The future of Project Catalyst initiatives is secure, with the next generation of growers, like Phil Deguara, whose family have been farming in the Mackay area for decades, fully committed.

A fourth generation sugarcane grower, Phil was working with Reef Catchments when he was introduced to trials with Farmacist through a cousin who invited the Deguaras to join Project Catalyst in its second year.

Adopting new processes hasn't been an issue thanks to his father. "Dad's always been progressive – as new things come in he's always trying them and he was well on the way of changing our farming systems before I came onto the farm."

It was in the early 2000's when research and a concerted focus on Best Management Practices on farms to improve water quality, was adopted by government and industry. Project Catalyst growers like Phil aren't overly concerned by regulation compliance. "There is a fair bit of pressure, but I think here, with our farming system and what we've developed over the years we're pretty well ahead of the regulations, well we're trying to keep ahead of anything the government wants to introduce, so we try to improve everything we do here so those regulations won't worry us as much."

Since 2009 the Deguara family has trialled insecticide application methods to treat cane grubs and reduce costs (unsuccessfully), as well as the successful trial of the block yield potential fertilising system, which has now been adopted across the whole farm. "That started as a trial through the district, we weren't just using our data so it was verified (by several growers) as working so that's our fertilising regime. Other things we've seen include different types of (spraying) nozzles, chemicals etc. and as we see stuff like that we adopt what we can."

With more than 300ha under cane across several farms, most of the trials are conducted on the home farm where everything can be closely monitored, then if successful it's adopted more broadly. Technology innovation has played a big role in that process. "Innovation is making things easier to do, we're doing a lot more with less people, less tractors, less inputs. That's the line innovation is pushing, which we need to stay viable. We've had GPS on one tractor for 10 years, but now we've got 3 tractors set up and the harvester.... all our major infield work is all done on GPS and we're using variable rate controllers on our spray rig and our fertiliser applicators, so we've adopted all that. We're also doing infield monitoring of moisture for irrigation, with sensors in the ground and then they come back to the computer so we can monitor when to irrigate and how much to use."

Water remains a critical factor to not only BMP for water quality but the future of farming. Deguara's have also incorporated sediment traps where the first 30mm of a rain event or irrigation overflow will be captured for storage and re-use before reaching nearby creeks, saving not only fertiliser and nutrients but also water.

The latest trial now seeks to circumvent the loss of valuable fertiliser through sub surface application. Based on trials with mill mud and compost in Maryborough.

“We don’t have compost here, we’ve got a lot of mill mud, mill ash and bigass, which we were originally putting on top of the stool in a band, after seeing the results of the sub surface application we thought we’d give it a go and see how deep we could get the mill mud under the cane, especially in our sodic areas where we have dramas growing cane. We’re trying to put the mill mud about 350mm under the ground, due to the rocks and our clay layers being pretty shallow. We’re up to our first ratoon in some blocks now and well the yield and cane quality is a lot better than it used to be in those areas, we just want to wait and see if we get a wet year and see what happens we’ve had a couple of pretty good dry years and in the sodic soils it doesn’t really show up, there’s not enough water to push of the salts and that out of the ground so we’ve got to wait until we have a wet year and see if it’s still going to maintain a crop.”

Anecdotally Phil’s seen greater water penetration and holding capacity in those areas which have been worked with adapted equipment. It seems necessity is the mother of all invention.

“We made a ripper and a furrower, and it basically just puts a furrow where the canes going to grow, then go along with the spreader to put the mill mud in and just cover it over. We’ve done a fair few hectares now, we’re up to our second year so I’d say a third of the farms been done that way and where we’ve got plant cane this year which we treated last year the cane looks healthy and it was easy to get up, the ground was easier to work and it seems to hold a lot more moisture, everything was just easier but we need a bit more work to do it more broadly. We started another trial which is plant cane this year, so last year I did strips of putting mill mud and ash and just straight ash on top of the ground, under the ground and then we had some with nothing so we’ve got controls, some we’ve just deep ripped and covered in, just to make sure it’s not the deep ripping or busting up the soil. We’ve just fertilised all that now, so next year we should be able to cut some replicated trials off there to see what difference it’s making. At the end of this year we’re going to do some trials in our really poor soils that have a lot of sodic issues, we’ll do another lot of strips there, but we’re probably, I think we’re going to put gypsum and lime under the soil as well. Trying a few different things and see what makes the biggest difference.”