



Soil health the key to reducing fertiliser rates

Ask Herbert River cane grower Robert Bonassi how he's slashed fertiliser rates without affecting yield and he has two words – soil health.

SUPPLIED BY WTSIP

The third-generation farmer is focused on fallow crops, mill by-products and soil tests in his transition to cane that is less reliant on artificial fertilisers, and he says the journey has been both challenging and rewarding.

Robert is one of 39 Wet Tropics growers to take advantage of the Australian Government's Reef Trust IV tender program, delivered through the Wet Tropics Sugar Industry Partnership.

The program is helping to finance changes that enable growers to reduce fertiliser inputs without negatively impacting their productivity.

The Ingham grower cut his fertiliser rates by up to 20% over four years – moving

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from 160kg of nitrogen per hectare to 120–130kg for plant cane and 145kg for ratoons.

This reduction in artificial fertilisers, combined with the use of mill mud and ash, means Robert is now following SIX EASY STEPS recommendations for his farm.

The take-home message was simple, he said – you need to maintain healthy soils.

"I've learned you can't drop the ball, you've got to keep the soil healthy when you're reducing nitrogen and phosphorous," Robert said.

"We'd always taken soil samples but now we target every block we fallow on a yearly basis."

“Within five years we’ll have gone across the whole farm with 80 to 100 tonnes per ha of mud and ash and we should start seeing results. Then we’ll look at halving that and see if we can still meet the nitrogen levels.”

The Bonassi family grows cane on 180 ha over four parcels of land, with 25 of those hectares under fallow crops at any given time.

They moved to mounded rows and zonal tillage to solve waterlogging issues in the wet season, manufactured a zonal ripper and moulder and bought a bean planter last year.

They are also sold on mill mud and mill ash for its nutrient and soil conditioner properties.

“We apply sub-surface mill mud and ash in the fallows. Slowly, slowly it is building our soils up and helping us with reducing our fertilisers,” Robert said.

“Living 35km from the mill, we needed to think about ways to reduce costs, so we get it bulk-delivered and we bought our own spreader.

“Now we can control the rate. We spread zonally at the end of every year, using about 80 tonnes per ha. We can target where we put it depending on the state of the ground.

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He said the regular soil tests also helped to maintain calcium and magnesium levels, with lime applied when needed.

“At this stage we’re not saving money but our yield hasn’t been affected and overall it feels like we are getting there,” he said.

“This is something I’ve always wanted to do – get the soils back up.”

Robert's farm is 6km from the ocean “as the crow flies”.

Two of the parcels of land have three creeks running through them and one shares a boundary with national park land.

The Bonassis constructed silt ponds a decade or so ago with the help of another Federal Government Reef grant and most of their drains run into them. They have spoon and grassed drains to slow the flow of water off the paddock.

“It’s all about getting a good balance – good returns on the soil while minimising run-off to the very best of our ability,” he said.

“I always remember visiting an older farmer on a trip in my late-20s as part of a Young Farmers group. That was more than 25 years ago and he had already moved to 1.8m rows.

“He told us if you’re making changes, give it 110%. That’s what I do now. What worked well last year doesn’t always work well this year, so it keeps you on your toes.”

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Pictured: Herbert River grower Robert Bonassi is using mill by-products and soil testing to improve soil health and reduce nitrogen inputs.





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Wet Tropics Sugar Industry Partnership extension officer **Jarrold Sartor** said incremental change was the way forward for growers.

“An important message when reducing fertiliser is not to drop it by too much too quickly or without fixing other constraints, or you risk losing productivity,” he said.

“By regular soil testing, ameliorating with mill by-products and lime and using legumes as a break crop, you can constantly improve the soil to better use the fertiliser being placed.”

Smartcane BMP

It isn't just through the Reef Trust Program that Robert is working to improve his farm's productivity and sustainability credentials.

He is also an accredited Smartcane BMP grower, having been an early adopter of the industry project back in 2016.

“I was pretty confident that I was doing the right thing, but I wanted to be sure and also have that accreditation to prove it,” Robert said.

“I didn't really need to make any changes to practices, with the exception of record-keeping where I needed to tweak a few things, but overall it was pretty painless and once the transaction was complete and we had that accreditation there haven't been any dramas with maintaining it.” ■



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