

IRRIGATION OPTIMIZATION: THE SECRET TO SUCCESS FOR GREENSILL FARMING GROUP

By Wayne Griffin

If yield is the measure of a good cane grower, then the Bundaberg/Isis region's Greensill Farming Group must be up there with the best. In a area that typically averages 80-90 tonnes of cane per hectare, Greensill Farming is cutting almost double that figure, achieving up to 150 tonnes.

What's the secret? According to Peter Greensill, who co-owns the family business with his brothers Andrew and Lex, it's a simple matter of chemistry and arithmetic.

"It's not rocket science - sunshine, water, reasonable nutrition - done! It's a pretty simple formula to follow," Peter said, when *Australian Canegrower* visited

the family's newest farm in Wallaville recently.

"As farmers we sometimes like to think it's all a bit magical, but it's just chemistry and a bit of mathematics really."

Of course, the reality is a little more complicated. In fact, when it comes to farming, the Greensill family definitely



do things differently to many of their neighbours.

For a start, they do things on a much bigger scale, farming around 2,000 hectares across four farms in the Bundaberg/Isis region.

As well as being one of the district's biggest growers, cutting up to 120,000 tonnes of cane a year, they are also a significant part of Australia's sweet potato supply, exporting throughout the Asia-Pacific region and supplying supermarkets and green grocers nationally.

And that's not all.

Unlike many local growers, who favour legumes like chickpea or peanut as fallow crops, Greensill farms go with watermelons for their rotation, and are a major supplier to supermarkets nationally across the summer months.





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It’s a massive operation, employing over 100 full-time staff and 40 seasonal workers.

There’s even a full workshop to service the businesses fleet of farm machinery.

The brothers have their own specific talents. Peter, as CEO of Greensill Farming Group, heads up the family farming operation, while Lex, operating out of the UK, is CEO and founder of the international supply chain finance provider, Greensill Capital.

Andrew Greensill, working alongside Peter in the farming operation, is focused on the earth moving and land development side of the business and continual improvement of the family’s farming systems.

But the biggest difference between Greensill farms and their neighbours is not size, crop choice, or even tonnage - it’s the farm’s irrigation system.

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Pictured: Peter Greensill, who co-owns the Greensill Farming Group with his brothers Lex and Andrew, is a big believer in restoring uncultivated land to its natural state and providing wildlife corridors for native species.

Greensill farms operates a high efficiency furrow irrigation system.

The Greensill brothers believe in supporting the local economy, so as well as employing over 100 locals, they have also purchased an Australian made Canetec harvester and Greaves ACE Transporter.



Greensill farms operates a high efficiency furrow irrigation system, something quite uncommon in the Isis district, focused on reticulation, reduction of chemical and nutrient run-off and overall water efficiency.

The family's Stuarts Farm at Wallaville, 40 minutes west of Bundaberg, is a perfect example.

"This is a new property for us, we only bought it in February," Peter said. "It's a 565 ha block and we'll end up with just under 300 ha of cultivation.

"We put a lot of time into designing the farm to maximise efficiencies now and into the future. We start out with aerial height data, known as LIDAR data, which gives a snapshot of height variations across the farm. From here, we do the sums on maximising cultivation area and what that looks like, which then leads us to the final land development plan.

"At that point we start to layer that data up and create the surface that we're going to finish with in terms of drainage, soil types and managing run-off including flood water.

"Once we've got that, we overlay a complete irrigation system. We design all our own pumps and pipeline infrastructure - looking at best practice and reducing losses around both energy and water.

"A lot of the region runs with 6 or 8 inch pipe, but we're using 12 and 15 inch. We've basically just upsized everything to get those losses out and try to get our energy costs down."

It's a system that has already resulted in massive savings on the family's other cane farms, Peter said.

"When we bought the Lagoon Park farm, which is one of the first ones we did out here, it was costing us \$180 a megalitre to lift water out of the river.

"But through switching to flood irrigation and changing pipes and pumps, and getting everything sized correctly, we've now got that cost down to \$43 per M/L. So there's a massive difference there between start and finish, and that's all down to having the right pipelines and pumps."

The brothers use high pressure irrigators for germinating the crop and irrigating pre-emergence, but from that point on it's furrow irrigation all the way.

When pressed on the secret of their cane growing success, Peter admits the ability to get large quantities of water to the cane when required plays a massive part in the farm's impressive yields.

"The district average is around 80 – 95 tonnes per hectare, but this year, and it's been a pretty dry season, we've been cutting 130 tonnes to the hectare. Last year was even better, we were getting around 150, so that's almost double the average," Peter said.

"It's the ability to put the right amount of water at the right time that really allows us to improve yield. Without flood irrigation this would be extremely difficult to achieve.

"The key is trying to match crop demand with water application. If you lose 8 mm a day from the soil, you need to put 8 mm back on, it's that's simple.

"Your soil will have a certain amount of buffering capability, depending on the quality of the soil. A good soil like we have

here might hold 100 mm, but a poorer soil might only hold 40 mm.

"So, if you're losing 8 mm and you're only putting 3 mm on, it goes backwards every day. Your soil only had 40 mm to start with so in eight days, or probably even less, you're in trouble.

"Basically, we want to make sure we can apply water as fast as it's coming off the field. If you can do that the crop is very capable of 150+ tonnes to the hectare."

Like all growers, good yields and lower costs factor highly in the family's thinking when planning their farming operations.

But they are also big believers stewardship of the land and reducing the farm's environmental footprint as much as possible.

For this reason Greensill Farming is well advanced in the Smartcane BMP process, with marketing manager, **Robert Doyle**, expecting the company to achieve accreditation in 2018.

"As a significant Australian cane growing business, Greensill Sugar is committed to implementing the Smartcane BMP program," Robert said.

"Many of the program requirements, including metered irrigation pumps, tail water recycling, farm maps, nutrient management plans, fertiliser, spray and harvest diaries, are already in place.

"The BMP framework and checklist has been established with assistance from the extension officers at Isis Productivity Limited and an on-farm audit is planned for the 2018 autumn, ahead of the crushing season."

The business also sticks to a strict nutrient management plan, ensuring as



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little nitrogen as possible is lost to the environment, Peter said.

"We apply mill mud quite religiously, particularly on these development blocks, once we've finished our earthworks and improvements.

"Isis Mill delivers a large volume of mill mud on a regular basis. We've got a manure spreader that we brought over from the UK that we use to spread it each day, broadcasting to improve the moisture holding capabilities of the soil. It also has a broad range of nutritional values which we find is a helpful amendment for the ongoing health of the soil.

"We do soil testing across all the farms every year and we'll apply nutrients to the soil test, so we're not just shoving it on because that's what we've always done it.

"And even where we're using mill mud, that will be part of the nutrient budget. Say there's 35 units of N in the mill mud and 100 units of P, we will then obviously subtract that from whatever we would have put on."

The company's farms are also completely controlled traffic, with the entire Greensill farming fleet fitted out with GPS. And, despite being flood irrigated, they don't burn.

"All of our cane is harvested green and we maintain the trash blanket too," Peter said.

"We rake every second row so that we can get water down the row, but still hold onto the trash."

At the Stuart Farm, Greensill has earth moving equipment working 24 hours a day, levelling land, digging drainage and ensuring the 300 ha of cultivation land matches the brothers' vision.

However, work is also ongoing on the remaining 250+ ha of uncultivated land, where the business is engaging in the regeneration of natural vegetation and riparian work.

"It was something we wanted to do off our own bat," Peter said.

"Since purchasing our new farms we've done a large amount of earthworks and land development, but there's also large areas we're not going to farm. The intention is to replant and create a number of wildlife corridors in these areas to support the environment.

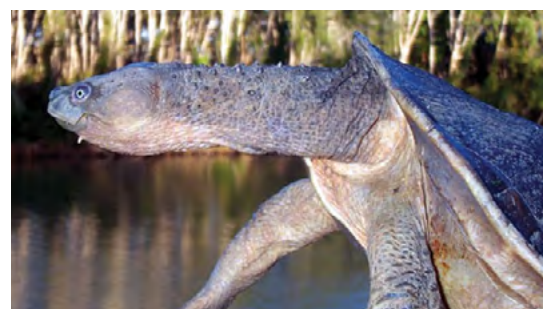
"It's a fact of life that you have to clear some land for farming, but as legal as it is to do, it's not something we just do for sport. Where we can regenerate and support the land and environment that supports our business, we will always do that.

"I believe it's a bit of a circular process, the good we can do for the land and environment will hopefully come back and pay off in the end."

The regeneration project has also led to an unexpected discovery at the Wallaville property.

After teaming up with Landcare to carry out some riparian revegetation work on the creek banks, workers discovered the critically endangered White Throated Snapping Turtle living in the Laufer's Bend Creek, a tributary of the Burnett River which runs alongside the property.

"It was a bit of a surprise to be honest," Peter said. "But it has just strengthened our resolve to carry out that revegetation and restoration work and make sure we continue to do our bit to care for the land as much as possible."



Pictured: Greensill Farming imported a manure spreader from the UK specifically to spread mill mud.

Earthmoving equipment operates 24hrs a day at the Wallaville farm.

The critically endangered White Throated Snapping Turtle has been discovered at the company's Wallaville property.