Grower Story

Cotton: Yield Up, Inputs Down

Grower: Geoff & Jeremy Brown

Location: Spring Ridge, NSW

Soil Health Boosts Cotton Crop

Geoff and Jeremy Brown are an innovative father-son team who are utilising the best of technology to produce outstanding crops, that are also sustainable. This years cotton crop, grown on improved soil, with reduced nitrogen costs, produced great returns. Quality and yield up and inputs down.

This was their first year growing cotton. With market prices driving the decision, they decided to switch from corn to cotton on their irrigated country. And the results have been extremely positive.

Yield & Quality up

Their cotton crop averaged 11 bales with sections of the farm producing up to 12.5 bales/ha. A fantastic return in this region where all parameters are set up conventionally to achieve 10 bales per hectare yield.

Jeremy was pleased with the quality grading with the gin turnouts at 40.

Their improved soil health and improved water holding capacity were fundamental in achieving this yield and quality, with a season lacking rain.

Reduced Nitrogen Rates

With soil health core to their practice, improved nutrient availability is one of the direct benefits — with nitrogen availability being standout in the system. This meant substantial savings as they used only 1/3 of the industry standard Nitrogen rate. And at no time did the crop look nitrogen deficient according to Jeremy.

This is because the nitrogen is accessed through biological activity. When soil is healthy it is teaming with microbial activity, and Nitrogen becomes plant driven and is accessed by the plant as it requires it.

The Browns applied two doses of nitrogen (as urea) — 68 kg/ha of N before planting and another 68 kg of N halfway through. With most irrigated cotton crops using 400-500 kg/ha of N this equates to just under 1/3 of industry standard.

The Browns were not surprised that they could grow such a good crop on this input level, as they have been using this integrated and sustainable approach for many years.

Moisture Gains

Even though they irrigate, according to Jeremy, the lack of rain was a yield-limiting factor. With the very dry season they did battle to keep up to the crops water demand with their irrigation infrastructure limiting water delivery. Jeremy believes a little timely rain may have even given them another bale/ha.

Moisture is everything. Soil that is well structured with vital humus gives growers the moisture benefits they need — especially in dryland cropping.

Jeremy went on to say "Not everyone irrigates. With the shorter growing period in their region, more people will be looking at soil health for the moisture gains and production benefits."

Grower Story

Cotton: Yield Up, Inputs Down

Grower: Geoff & Jeremy Brown

Location: Spring Ridge, NSW

Post Harvest Gains

Jeremy commented that the gains were seen post harvest too. "Our soil is looking great. With cotton you have to deep rip it at the end of the season — and because we have been treating our soil with Petrik biology for a few years now, it had beautiful til even after the crop and ripping. It still formed up nicely in structure and health."

After harvesting this year, in late April 2016, they then put in a barley crop behind it. Once again they applied soil inoculants to set up the crop for the season ahead.

Water Use Efficiency

The Browns also grew a dryland Sorghum crop and it is now the third year since they began using the soil inoculant Evergreen, its activator and Headstart the seed stimulant that also helps rooting depth in new plants.
The Sorghum crop was also grown on reduced conventional inputs.

In the dryland system, water use efficiency (WUE) is the factor that determines yield in most seasons. The build up of humus in the system lifts the WUE in three ways.

1. **Improved infiltration:** The better soil structure improves the infiltration rate meaning less run off and more in the soil.
2. **Deeper rooting depth:** The plants roots are able to penetrate deeper.
3. **Greater water holding capacity:** Humus has higher a water holding capacity than organic matter, therefore more water can be stored in the soil profile.

With very little rainfall this season they were happy with the 5 tonne/ha produced with no urea input. The improved WUE is a fundamental factor in Australian agriculture with its fluctuating seasons.

In A Nutshell

- Increased nutrient availability means less inputs and dollar savings.
- Boosting the plant soil interface increases Nitrogen and Phosphorus availability.
- Building soil humus improves the moisture holding capacity and rooting depth.
- Soil quality is maintained post harvest.
- Each crop helps the subsequent crops.
- Soil inoculants boost quality and yield.

KEY COTTON INPUTS

- **Digestor** (microbial soil inoculant)
- **Green Carbon Activate** (the activator)
- **Headstart** (the seed and root bio-stimulant)
- **Setbest ATP Energy** (foliar bio-stimulant)
- **Hydro TL** (ultra-penetrant)

TOTAL GROWER SERVICES

metagen AUSTRALIA

www.metagen.com.au
info@metagen.com.au