

## Precision Agriculture in the paddock – grower experience

### Tim Gersbach, 'Kurrajong' Capella, Queensland

**Farming area:** 4000 hectares (ha) over three blocks at Capella, with Kurrajong making up 1600ha.

**Crops:** Main crops include sorghum, wheat and chickpeas. Very occasionally and opportunity allowing, sunflowers or mungbeans may be planted.

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#### What changes have been made?

Previously, Tim used an 18-metre Multi Farming Systems Tyne planter, coupled with a Simplicity Aircart. After seeing the results of various Pacific Seeds and Department of Primary Industries (DPI) trial work, Tim believed that investing in a precision planter was the next step forward for their business.

The resulting purchase was a second-hand John Deere 27-metre DB 90 Precision planter. The planter includes three 9-metre sections for section control. The DB 90 includes eSet meters, hydraulically driven Central Commodity System (CCS) tanks, which feeds seed to mini hoppers on the row units. The mid rows are offset with Bourgault Mid Row Banders.

Tim only uses his planter in summer crops where it allows him to plant sorghum on 1-metre rows.

'Having the offset banders allows us to place our urea down in 0.5m inter rows between our sorghum at planting. By placing urea in the inter rows, it keeps it from burning the seed and allows the plant to access the nitrogen later in their growth cycle.'

'We are also able to place a granular starter next to our seed.'

Tim said the take home message from inspecting the various trials planted with similar planters was that the possible benefits were overwhelming.

Central Queensland Grower Solutions' PA in the paddock, Queensland Government, 2020

'We attended a DPI led field day where we were given the opportunity to look at different precision planters,' Tim said. 'It was good to get a first-hand look at the different options out there as it helped our decision to invest.'



Figure 1: Tim's DB90 in action. Photo: Tim Gersbach

#### Benefits

Tim said that the biggest benefit is the uniformity and yield benefits they are now seeing.

'When we were planting with the airseeder our seed rate was much too high to give the uniformity that benefits summer crops. By precisely placing the seed we have reduced our rate by 17,000 seeds/ha and you can definitely see the plants responding to not being overcrowded anymore,' Tim said.

Due to the reduction in seed Tim was able to save approximately \$12/ha.

By accessing section control Tim has reduced his overplant on his point rows and headlands. Reducing their planting rate by approximately 24% is proof both the precision placement of seed and the section control provide major benefits.

'By having a disc planter we are conserving moisture in paddocks because we are no

longer running a tyne and disturbing large amounts of soil.'

By not disturbing the soil, Tim is giving his summer crop the opportunity to use all the moisture available.

'When our summer crops weren't getting the in-crop rain you could see them folding over at the end. Especially when we used the airseeder and the plant population was very staggered. We've now noticed we are growing better crops even without the in-crop rain and we believe this is on the back of the precision seed placement.'

Tim said that one benefit they did not anticipate was improved grain quality due to fewer screenings, allowing them to sell at a higher grade.

'Having fewer plants, more evenly spaced seems to have reduced competition and allows for the plants to put more effort into grain fill,' Tim said. 'Prior to this we were getting a lot of small grain, so it is nice to have higher grades now.'

### Issues

The main issue that Tim faced was setting up the double disc openers. It was not something they had experience with prior to purchasing the DB90 with Tim stating that they are still having issues with it now.

Another issue they were having was the trashwipers were digging too deep, exposing the moisture and causing the gauge wheels to clog up with mud.

Tim said that they have also faced some issues with the section control when first trying to implement it.

'We found it was switching the sections off 1.5 metres earlier than it was meant to, even with all of the correct measurements entered into the screen. Luckily, staff from our local dealership were quite helpful through all of these teething problems,' he said.

### Future opportunities

There are a couple of upgrades Tim would like to look at in the future.

'I would really like to upgrade to electric drive on my seed meters from hydraulic drive,' he said, 'We are now pulling it with a John Deere 9520RX so hydraulic power is no longer a problem, but I would still like to upgrade.'

'Moving to electric drive lowers the hydraulic flow requirements from the tractor,' he commented, 'It also offers turn compensation, allowing for further accurate seed placement.'

'After seeing the benefits of the section control, I want to take steps to upgrade to individual row control too.'

'Since we have owned it, we have changed the gauge wheels from a solid configuration to spoked wheels,' Tim said. 'This allows the dirt, mud and stubble to flow through the wheels without us having to worry about clogging the wheels up.'

### Recommendations

Tim said his biggest recommendation is to have a lot of patience and be ready to put the work into maintaining the planter.

'During planting my ute is full of spare parts from bearings to gauge wheels,' Tim said. 'It's not a problem, you just need to be ready to do the extra work. And pre-season work is a must to make sure everything is running smoothly.'



Figure 2: Tim's John Deere DB 90 Precision Planter with Simplicity Bin. Photo: Tim Gersbach

Even with extra work, Tim is very glad they made the decision to invest in a precision planter.