Challenges to implementing Controlled Traffic practices in peanut – sugarcane farming systems

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Background

There have been dramatic changes in the sugarcane farming systems of the coastal Burnett in the last 10 years, with many producers attempting to implement outcomes from research conducted in the Sugar Yield Decline Joint Venture (SYDJV). This suggested grain legume rotations, reduced tillage and controlled traffic improved the sustainability of the Australian sugar industry (Bell *et al*. 2003). Braunack *et al*. (1999) argued that significant time and fuel savings were achieved through Strategic/Zonal tillage techniques and Halpin *et al*. (2008) demonstrated that Precision Controlled Traffic Farming (PCTF) using RTK auto-steer was essential to implement reduced tillage. Further, the latter study highlighted that coupling PCTF and reduced tillage improved whole of farm gross margin by 12%, reduced tractor hours by 39% and fuel use by 58%, compared to systems with the old row configuration and full tillage.

The Bundaberg/Childers region produces 25% of the irrigated peanut production in Australia. The current industry standard peanut thresher is a high throughput, self-propelled machine that unfortunately traffics two out of every three peanut/sugarcane "bed zones". The r compaction represents a constraint to the implementation of controlled traffic. Whilst there are other threshers that better match the sugarcane row configuration, they lack the large threshing capacity of the industry standard machine. This capacity is essential in this coastal sub-tropical environment where wet weather represents a major risk of harvest losses in a potentially very high value crop.

Peanut Thresher Modification Project

Three major modifications are needed to make the standard peanut thresher match the sugarcane row configuration: a) extending the pick-up front to gather eight peanut rows (the equivalent of four cane 'beds') rather than the current six; b) extending the front interferes with the unloading mechanism, so the potential to retrofit an unload-on-the-go mechanism had to be explored; and c) wheel rim modifications.

The Burnett Mary Regional Group (BMRG) has made significant investment from its *Sustainable Landscapes Program* to facilitate the modifications. The manufacturers of the

thresher were concerned about the project outcomes and the producer was reluctant to alter his thresher without investigating the modifications more closely. To address these concerns, the Sugar Research and Development Corporation (SRDC) funded a capacity building project to allow a face-to-face meeting with the manufacturer and the grower in the USA to talk though the feasibility of the project. This tour coincided with peanut harvest in Georgia and allowed inspection of the unload-on-the-go mechanism and consultations with thresher operators on the feasibility of this new concept. We are currently at the implementation phase.

Conclusion

Initially making PCTF work in the peanut-sugarcane system seemed a huge task. However, this project has showcased how a range of people with unique skill sets, in combination with funding support from various organisations, can work symbiotically to achieve sustainable farming system outcomes.

References

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