

Inter Row Sowing - Part of a CTF System

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ABSTRACT

Inter row sowing is part of our CT system where each crop is sown using +/- 2cm GPS auto steer between the previous year's stubble. Stubble has been fully retained for 5 years with the aim of leaving it standing following harvesting, when residue is spread evenly and stubble cut to 300mm. The combination of reduced compaction, full stubble retention and minimum tillage has led to improved soil structure and overall soil health.

INTRODUCTION

I manage crop production on a 3700 ha family farming operation located at Lockhart in Southern NSW 70 km south west of WaggaWagga. I farm with my wife, 2 brothers and parents. Our farm consists of Red Brown earths of loamy clay to clay loams with a pH of 4.8-6.0(CaCl₂) over a clay based sub-soil. We have a growing season rainfall between 200-300mm. We grow canola, wheat, barley, faba beans, green manure crops of vetch or peas and have grown triticale.

The move to inter row sowing was a direct relationship with Control Traffic farming which we started 6 years ago when GPS –Ag Auto farm was fitted to our tractors and spaced machinery to 3 m centres and machine working widths matched to a 2:1 ratio. We had never aimed to be seeding between rows in 2002 when we were refining our production system, but saw it as a possibility when I saw it accidentally done at Phil Kerr's and also in our own system previously. The introduction of RTK and +/- 2cm guidance systems was possibly the single most important investment we made, as it gave us the ability to begin the process, thus paying for the investment immediately.

THE PROCESS

We needed a system to drive our productivity and long term sustainability. It was also important to have repeatability for each operation with different operators and to manage input costs at the same time.

Utilising our resources, i.e. land and water, labour and finances more effectively was our initial goal. We aimed to work together as a family business, maximise machinery use to its full efficiency, improve soil health and nutrient cycling, and reduce inputs per hectare.

Achieved goals by:

1. block farming
2. improved paddock layout
3. matching wheels and implement width
4. having a simple robust plan and sticking to it
5. strong family goals and regular meetings
6. using good agronomy
7. doing things on time

Benefits that have followed:

The benefits of developing a farming system has lead to many improvements

1. timeliness of sowing (soil softer and sowing by the date with a lower risk of failure)
2. improved soil condition leading to better water holding capacity and germination
3. application and adoption was simple
4. improved grain quality, yield
5. enjoyment and fulfilment through reduced fatigue (no burning) and knowing we are improving land management and doing something about climate change (increasing soil carbon and microbial activity)
6. reduced labour input into operation and increased efficiency (doing more)

Our machinery:

- JCB 3220 with tasweld 3m axles
- 5000ltr 27m goldacres dual boom (offset nozzles)
- TJ 325 on 710/42R Singles
- 13.5m Janke Bar, 300mm tyne spacing, narrow points and press wheels
- 9000 ltr Simplicity AirCart
- All on 3 metre centres
- Sowing 5000ha (2000ha contract)
- Mark Points prior to sowing (once only)

Importance of good agronomy

Improved crop performance does not happen overnight. It comes from a continual build up in:-

- soil condition
- nutrient balance
- moisture retention (as well as the following...)
- crop management
- weed management
- sowing rate, sowing date
- seed/ fertiliser placement,
- soil compaction
- disease control

Inter row sowing requirements

The success of inter row sowing requires a plan, setting up your machines, getting the right RTK guidance system complete with hydraulic block, managing the residue and leaving the stubble standing, sowing in the same direction each year. Stubble is not disturbed, therefore seeding rates are getting lower, with better germination.

The future

A CTF system allows us to implement and investigate further precision techniques. Variable rate applications shielded spraying as well as inter row nutrition or double cropping has potential; however research needs to keep up with the high adoption of changing farm systems in order to assess the full benefits.

CONCLUSION

The quicker you start farming a CTF system the earlier the benefits, but remember every part in the system from agronomy, machinery, labour must be done to its potential and capacity to achieve its maximum benefit.