

A 'wider' view of farming

By Rob Taylor¹, Stew Cannon² and Tim Neale³

Our first step into controlled traffic at "Curraweena", on the Darling Downs, was to allow easier spraying of wheat and barley fallows. We shifted planting tynes to leave gaps for the boom spray to follow and we extended the boom spray to match the winter crop planter.

The advent of cotton growing — with its susceptibility to 2,4-D — led to night spraying because of the lower temperature, lower wind speed and higher humidity. This also gave greater efficacy of the chemicals. It is very easy to follow the tram tracks at night, negating the use of foam markers. And with the use of the right nozzles and common sense, drift is virtually eliminated allowing the use of 2,4-D right next to cotton crops.

Machinery matching

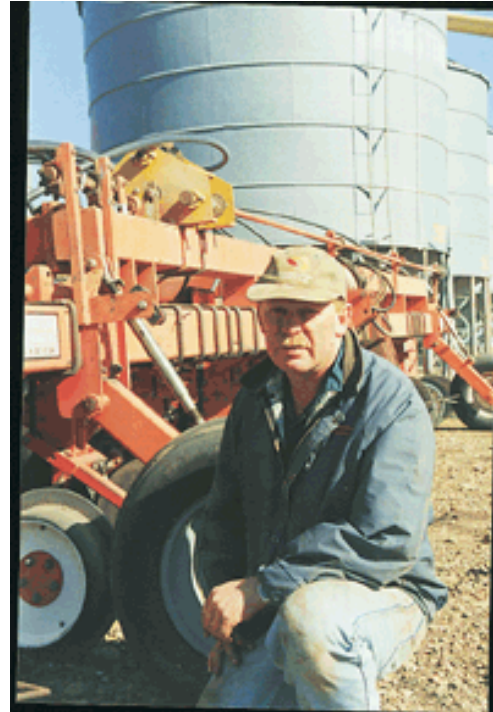
As we reduced our cultivations to zero we found planting into random wheel tracks a major problem. This led us to plan for our farming system and where we wanted to be with regards to machinery matching. We adopted a two year time frame — at the end of this time most of our machinery was up for replacement.

We decided to base our machinery widths off our 30 foot front header. We ended up with a 30 foot planter and a 60 foot boom spray.

As for wheel tracks we had the Toyota spraying on 60 inch tracks; the tractor on 60 inch; the chaser bin on 120 inch; and, the header on duals at 120 and 180 inches. The duals allowed us to pass a sorghum row between the tyres which stopped a lot of problems at planting.

Paddocks were marked out using marker arms on the planter at either planting or fertilising.

This all seemed to be working well until we started growing corn. Our corn crops had great height variance around the tram tracks. Also,



Rob Taylor.



We were initially encouraged into controlled traffic to make wheat and barley fallow-spraying easier.

when we double-cropped the rows around the tram tracks, it caused a lot of headaches with establishment. The Queensland Department of Primary Industries did some research with single row harvesting. It showed large yield decline in the rows next to the tracks.

The current set-up

From this we changed to where we are now, still based on 30 feet but with one set of tracks at 120 inches. To do this we changed header tyres and rims and added spacers to the tractor front ends. We now use a tractor for spraying and we also changed the axle widths on the boom spray and air seeder bin.

A problem with 120 inch tracks is that machinery manufacturers will not give warranty on the front ends. We also have some problems with king pin bearings and front final drive bearings. We have adopted a tighter maintenance program which has reduced bearing failures.

Machinery manufacturers seem reluctant to manufacture and offer a choice of different length front ends.

The benefits

Improvements in yields and cropping frequency were apparent from the start but maximum benefits kicked in at year five. The benefits of this system have allowed us to grow higher value crops, higher more consistent yields with a greater cropping frequency.

We have found management efficiencies from:

- Reduced over lapping (for example, at harvest the header front is always full);
- Spraying when the conditions are right (no foam markers); and,
- Greater cropping frequencies.

We are also finding benefits from better natural resource management including improved soil structure (less compaction), greater water infiltration, better plant extraction of water, better drainage, less erosion, improved flood management and improved soil biology (for example, there is an increase in earthworm and ant numbers).

In summary



You can do your own modifications and they don't have to be expensive.

What is controlled traffic farming?

Controlled traffic is a component of a sustainable management system where there is a system of permanent traffic lanes (tramlines) in a paddock that separates planted areas from wheeled areas.

Controlled traffic is a whole farm system incorporating farm layout (drainage and maximising overland flow), soil structure, agronomic issues, ease of management (timing, flexibility and efficiencies) and machinery matching where all tyres are restricted to permanent tracks.

Controlled traffic is not precision agriculture. Precision agriculture, as described by Sydney University, is the "observation, identification and optimal treatment of variability in agricultural production processes in a timely manner".

- Controlled traffic requires a systems approach with a whole of farm plan.
- You need to plan where you want to be in five years time.
- You can do your own machinery modifications and it doesn't have to be costly — but be prepared to make some compromises.
- It's very worthwhile to talk to other farmers and advisers to help nut out the problems.
- Use simple marking out first then progress to guidance later on.

So my advice is to “keep on track” and have a go.

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This process leads to site specific management. Controlled traffic greatly enhances — and can be an integral part of — precision agriculture.