

ACHIEVING CHANGE
"It's the Package which counts"
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Introduction

At the 1995 Conference we reported that Controlled Traffic Farming (CTF) was established on four farms and covered an area of 2500 ha. Three years later, it is closer to forty farms and 35,000 ha with another sixty farms expected to adopt in eighteen months raising our total above 80,000 ha. In addition, there is approximately 250,000 ha of Controlled Traffic in Southern Queensland and Northern New South Wales that has been influenced by our Central Queensland experience

What factors have contributed to this "dryland revolution"? What conditions predisposed Central Queensland growers to consider CTF? What has allowed a small team of people to have such a significant impact, when other projects have resulted in little change to grower's attitudes and practices.

The First Step

This paper attempts to layout the processes and content behind the success of CTF.

CTF was developed by Dr Don Yule and Stewart Cannon as a "best bet" package solution to erosion and compaction. The combination of permanent wheeltracks for compaction control and downslope orientation of crop and wheel zones for erosion control, although based on sound scientific theory, had never been tested before. What were the impacts on-farm, was it possible at a farm scale? To assess the system, a number of growers were approached and asked to trial the package.

The co-operators "had a go", usually on one paddock of their farm. CTF delivered on resource management issues, facilitated the adoption of zero-till and dramatically improved the efficiency and effectiveness of operations. It seemed there were many benefits, no weaknesses and only some doubts. The work with co-operators' showed CTF delivered more than first thought, further enhancing the attractiveness of the system.

Table 1

1. Immediate and significant input cost savings¹
2. Little machinery modification needed as significant benefits from partial CTF, change was low cost²
3. Our co-operators moved from experimentation to enthusiastic advocacy, as a result of their experience which gave the promotion more credibility.³
4. They became committed to fence to fence adoption, itself a powerful message to their peers.
5. The package enabled them to innovate.
6. There was an attitude change, particularly to resource management.⁴
7. The close working relationship between the CTF team and co-operators established trust and credibility, this gave the team community credibility and recognition.⁵

Much credit for the success of CTF must go to these early pioneers later, advocates of CTF.

The trial of CTF on-farm, each paddock an experiment, in six different locations, led to rapid development. Indications were that the package was robust enough to take to the wider community. The package or content certainly worked, but how best to achieve adoption, what process would work? Were they aware of the problems, did they care? History shows much extension but little change.

Certainly they were aware of the problem of erosion. Major efforts had been made to control runoff, with the installation of contour banks and the adoption of stubble retention but there were still many difficulties. Zero-till had been tried by many but practised by few.

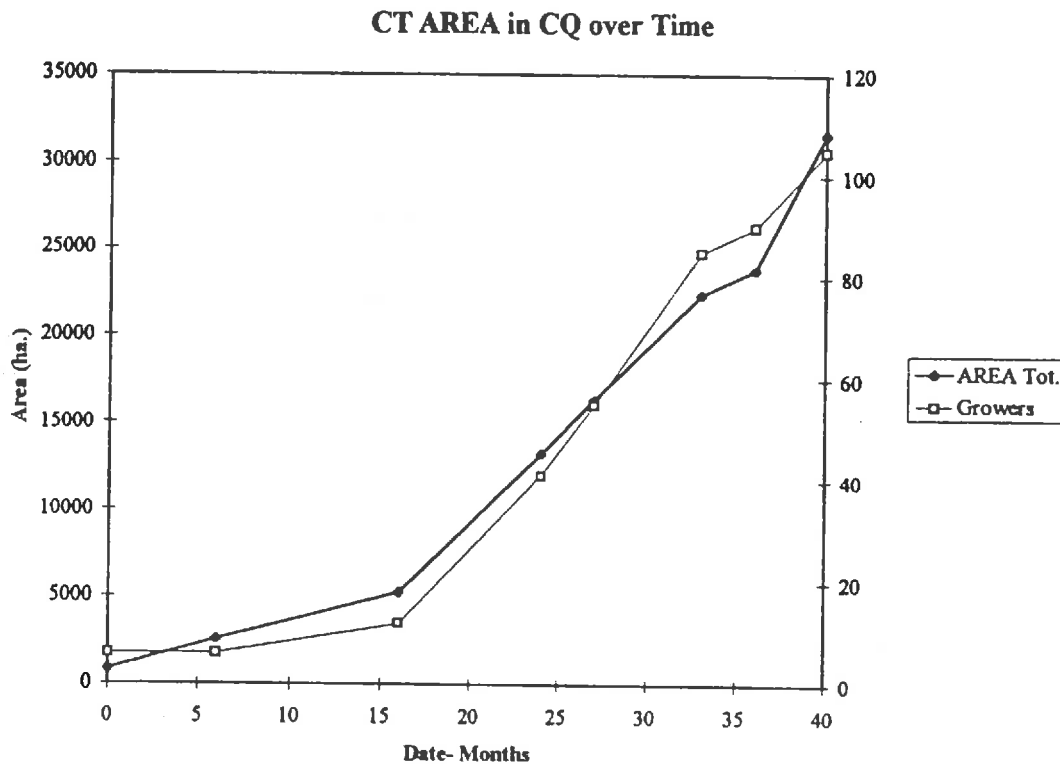
Compaction, on the other hand, was less widely recognised. Fortunately, it was easily exposed in the field and a few digs with a shovel soon challenged people to think about what was happening beneath the soil surface.

Could the adoption approach follow the same pathway as the work with the co-operators? Because CTF was a farming system, specific to each paddock, it had to be developed on-farm. Just as the co-operators were involved in co-learning and action research, so too would each new adopter.

This has defined our first step, which bought content and process together. We use this to give others the confidence to take their first step and lead to the catchcry, "Have a go, try a paddock."

That this strategy has worked beyond expectation is testified to by the exponential growth curve below.

Figure 1. Adoption areas and farms since March 1995.



The Second Step.

Professionals are currently fulfilling two roles. The first to provide necessary ongoing support for basic implementation of CTF, as the first step process repeats. Implementation on farm focuses on solutions - erosion, compaction, layout planning, machinery adaptations. In the development phase for each property this means one on one interactions between researchers, extension staff and farmers. This action learning builds relationships, credibility, acceptance and facilitates information interchange.

Secondly, to keep in front of the pack and challenge the future. As the saying goes, "You don't know what you don't know." There are a number of "glass ceilings" which need testing. Growers are never allowed to think they have "arrived". CTF as a system is evolving - as professionals our job is to push the system. We suggest outcomes which are impossible without CTF or something which is, as yet untried or just starting in CTF. "What are you going to go home and do differently." "If you have been doing something the same way for a number of years, look at it, is it the best way?"

This action learning environment has delivered innovations such as:-

- Furrow planting
- Directed Tillage
- Side dressing fertiliser in wheat
- Directed spraying

Conclusion

The “dryland revolution” is a result of :-

A sound package developed from a systems approach to a systems problem. Much previous work had focused on components within the farming system and each solution led to new problems somewhere else in the system.

CTF having enormous benefits for farmers and no negatives.

The previous system being so bad.

On-farm action research coupled with action learning.

A committed, motivated, multi-disciplinary team which continually challenged, motivated and encouraged farmers to do something differently

The combination of science and on-farm action research has developed a package which marries relevant, sustainable and robust content with a process which has delivered the goods.

Notes from Table 1.

1. Because CTF is an accurate guidance system there were immediate benefits. The reduction in area and hence inputs as a result of this accuracy reduced the cost of establishing a crop by around \$30/ha.
2. It was demonstrated there were substantial benefits to be had from partial adoption and highlighted the gross inefficiencies associated with farming between contour banks. This meant that producers could move towards CTF by adapting existing equipment, thereby reducing the need for capital expenditure. It didn't matter if the harvester wasn't on the same wheel spacing or operating width as the remaining equipment. The inclusion of an on-farm development person within the team facilitated the sharing of information amongst growers as well as provide suggestions and ideas for machinery modification.
3. Thanks to our co-operators, visiting farmers could see paddock scale working examples of CTF and talk through problems, perceived or otherwise with “practising” growers.
4. Adopting growers were changing their attitude to a number of issues very rapidly. One grower, two hours into laying out his first paddock said, “Why weren't we doing this twenty years ago, it makes everything so easy.” Attitude to erosion changed from it being considered a normal part of farming to “We will change the layout, tolerate shorter runs, hence field inefficiencies, in order to minimise the erosion potential.” Compaction suddenly became an issue, growers who had previously grazed cattle on crop residues, sold some of their herd, others locked then off the cultivation. Random traffic across cultivation became a thing of the past, machinery was modified, sometimes extensively to ensure minimum wheeling across a paddock.
5. For success the growers needed to have confidence in the technology and in the advocates of such technology. Through our involvement with the co-operators we developed a co-learning environment, involving farmers in action learning. We did not claim to have all the answers, we were interested to learn from their experiences. Through this we demonstrated we were prepared for a long term supporting role. Farmers could enter the system confident of continued support from the project. Farming is a multi-disciplinary amalgam of systems therefore a multi-disciplinary team was assembled to deliver CTF. It included soil scientists, hydrologists, machinery specialists, agronomists plus weed scientists, economists, specialists in crop nutrition, group facilitators and top interstate farmers.