

ctf PROFILES

Case Study 2



Producer: Hayden Wass

Location: Nyngan, NSW

Soil type: Red sandy loam (80%),
Gilgai country (20%)

Average annual rainfall (mm): 450

Growing season rainfall (mm): 170



Current farming enterprises

Hayden's business is 100% cropping. The total cropped area is 4500 ha and usually consists of equal area of wheat, canola and either chickpea or lupins.

When did you commence CTF and why?

Hayden commenced CTF in 2001 with the whole cropping area converted to CTF by 2003. Soil across the farm was run-down and dealing with these soil issues was requiring the use of larger tractors in order to drag implements through the soil. The decision to move fully to zero-till and full stubble retention was made concurrently.

The decision to convert to CTF and zero-till was made to ameliorate soil issues, reduce costs (particularly the size of tractors required and fuel for cultivation), to enable greater precision (less overlap and gaps) and because high precision GPS units were becoming more affordable.

Were there any issues that you encountered with the conversion to CTF?

Isolated trees had to be removed. At that stage, the total cropping area was much larger (family partnership)

and this application was the first of its kind that was approved.

Has your farming system changed since converting to CTF?

Hayden adopted CTF, zero-till and stubble retention simultaneously, so changes in the farming system have been a result of all of these factors in combination. Water infiltration and moisture retention has been a significant benefit of the change in farming practice. Hayden grows canola following a twelve month fallow and as a result moisture conditions at sowing are generally very good. Retaining stubble has increased frost risk. However, prudent variety selection for sowing dates has assisted in alleviating this problem and the benefits of increased moisture retention outweigh the increase in frost risk.

Describe your machinery set-up and any changes you had to make to convert to CTF

A major part of the change to CTF was the reduction in size of tractors required, Hayden sold off 300 and 400 horsepower tractors and these were replaced with 250 horsepower tractors. This meant there was very little actual cost in terms of machinery for the change to CTF.

All tramlines are 3 m spacings. The seeder is 12 m wide with the sprayer and spreader working 36 m widths. Auto steer GPS has 2 cm accuracy.

Describe any changes you have seen in terms of fuel costs and work rate

There has definitely been a reduction in fuel costs associated with change to CTF though this has not been calculated. Certainly the reduced tractor size and the switch to zero till has meant less fuel is required in all sowing operations and the packed nature of the tramlines reduces rolling resistance in all operations, resulting in less fuel usage.

Describe any impacts CTF has had on soil characteristics

There has been a considerable reduction in water run-off and an increase in infiltration since adoption of CTF, zero-till and stubble retention. Gypsum has also been applied on heavy country to improve soil structure, with deep ripping on 660 mm spacings to retain tramlines undertaken fifteen years ago which has greatly improved soil health and productivity.

Hayden's country is relatively flat and there have been no issues with erosion along tramlines even under very wet conditions in 2016.

How has CTF impacted weed control and the weed spectrum encountered?

The weed spectrum has changed with the conversion to zero till with windmill grass and fleabane two of the more common weeds now found.

There has been little issue with weeds in tramlines. Hayden attributes this to zero soil throw as a result of using a disc seeder. This creates little opportunity for creation of 'micro seedbeds' in the tramlines.

Double knocks are commonly used on problem weeds such as fleabane. Are you using this tactic?

Hayden attempts to spray all weeds as early as possible in their life-cycle. Fleabane has a very broad germination window, particularly in areas where there can be significant summer rainfall events so the double-knock strategy is commonly used on weeds such as fleabane to minimise escapes and the build-up of resistance.

Describe the impact CTF has on your crop yields

Hayden believes that the combined benefit of CTF, zero-till and stubble retention are most apparent in drier than average years where the benefit of increased moisture retention is more fully expressed compared to a conventional farming system. In wet years, he feels there is probably little difference. One major advantage of CTF is the ability to be

timely in cropping practices. Under conventional farming systems, rainfall events of less than 5 mm are enough to prevent sowing due to the ground becoming non-trafficable. With CTF, sowing can continue under these conditions.

Similarly, spraying can occur under conditions where soil moisture conditions may prevent access to paddocks. This means weeds can be targeted at their ideal growth stage rather than when soil conditions allow access to the paddock. Similarly, under wet harvest conditions, there is less likelihood of harvest needing to be stopped due to paddocks being non-trafficable.

Are there any issues that producers considering adopting CTF should be mindful of?

Hayden feels that producers should consider establishing tramlines of 4 m owing to the increasing size of machinery. He further suggests 15 m planter and 45 m sprayers. Hayden also cites that with the increase in use of proprietary GPS systems with in-built firewalls, producers should be mindful of possible issues when changing machinery plant brands.



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