

case studies

Jack & Dione Carter

Acknowledgements

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Innaminna, Nyngan, NSW

Jack and Dione Carter live on 'Innaminna', approximately 5km west of Nyngan. The 6000ha property is relatively flat. The predominant soil is red loam, with slightly heavier soils closer to the river and lighter textured soils on the western side. Rainfall is low (440mm average) and erratic with no clear winter or summer influence.

Jack and Dione started managing 'Innaminna' in 1993. At the time they only used in-crop herbicides, relying on cultivation to remove fallow weeds and to prepare paddocks for planting. Their operations are predominantly cropping, growing cereals, canola, chickpeas, lupins and field peas.

Motivating factors

Several factors influenced the conversion to minimal tillage in 1998. The conventional system was leading to problems with weeds, timeliness of sowing and ability to establish break crops like canola. It was also limiting the crop area that could be managed effectively because it was labour intensive. Dust and soil crusting had become issues.

Benefits

One of the important benefits for the Carters has been the ability to increase the scale of their cropping operation to twice what it was.

The second major advantage has been the retention of more fallow moisture and reduction of fallow and in-crop evaporation (by retaining stubble). This has increased the moisture available for crop growth with subsequent effects on yield. There are also benefits for sowing. The Carter's have often had enough moisture to start sowing in April even in the absence of opening rains. Retaining stubble and minimising soil disturbance has reduced surface crusting, given more options for crop rotation and reduced the need for re-sowing.

Unforeseen problems

Stubble handling is often a problem. Their seeder's stubble handling was improved by increasing row spacing then changing from a tyne seeder to a home-manufactured disc seeder. A guidance system allows for inter-row seeding. Along with reducing cultivation, this has helped reduce compaction. The purchase of an auto-steer system in 2001 limits ongoing compaction to wheel lines. The Carter's have adapted their machinery to a standard wheel width that works within their 12m tramline.

There have also been problems trying to retain stubble due to the low stubble persistence of the legume rotation.

Plans for the future

The next major priority is putting headers onto the controlled traffic system. Changing the direction in which paddocks are sown (which has stubble shading issues), purchasing weed seeking technology to address woody weed issues and minimising chemical use in fallow are other ideas that they are considering.



The effect of navigation can be seen here.



Carter's seeder now has a 38cm row spacing.