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A case for conservation farming

Funded by the Australian Government's Caring for Our Country

Al Payne

CARING FOR OUR COUNTRY

West Wyalong, South West, NSW
Total area farmed: 2,120 ha
Area cropped: 1,300 ha
Conservation farming since 1994

Working as an agronomist with Landmark, as well as running a farm 44 kilometres west of West Wyalong in partnership with his wife, Lisa and their children, Tommy, Kate and Lucy, Al Payne's mates and associates often joke that his farm is a research centre.

As a regional finalist in the 2011 Conservation Farmer of the Year Award (joint finalist for the Lachlan with Charlie Arnott), Alan was recognised for the work he has done over the past 17 years on "Hilltop", in the Yalgogrin North district.

Working with gradational grey to brown clay red loams and duplex gravelly loams on an average rainfall of 425mm, Al and Lisa crop around 1,300 hectares of canola, wheat and barley, as well as running 800-1,100 Merino ewes bought in to join to terminal sires for prime lambs. They stopped breeding replacement sheep in 1999.

Today, the Payne family lot feed stock and sell sheep when necessary to maintain groundcover in pasture paddocks.

The switch to conservation farming practices began following severe erosion events in the early 1990s.

"You cannot farm without soil. Soil health became a priority in driving the farm's profitability," said Al.

"Our main goal here is to convert rainfall into a saleable commodity in a sustainable and efficient production system, while improving soil health and maintaining sufficient diversity too avoid herbicide resistance," he explained.

This year the growing season rainfall (April to October) was 183mm. Al said crops and pastures have performed well, utilising the stored moisture captured over the wet summer.

It was noted by the judges of the Conservation Farmer of the Year Award that Al's passion for soil health and herbicide management was demonstrated by very soft friable soils and weed free crops.

As with many farmers, pest, disease, weeds and moisture retention are challenges the Paynes face from season to season. However, Al said one of the biggest challenges he has faced in his conservation farming operation has been handling stubble residue.

"Modifications to old machinery is time consuming and often unrewarding with the end result not really satisfactory," said Al. "We've found purchasing seeding machinery closer to what is required and then adjusting it for farm system enhances progress in this area rapidly.

"Two centimetre GPS is necessary for inter-row sowing, but small frame wheels can cause seeder movement into previous furrow lines, with cross flow of stubble residue and excessive soil movement.

"Harvest management of stubble is critical but timeliness of grain removal and maximising efficiencies can make that difficult. The segregation of farming land from grazing is important. Livestock exclusion can be difficult to manage, but

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complete residue retention is paramount for optimising moisture conservation.

Al considers sound crop rotations to be essential for minimising problem diseases and pests. However, mice are one pest that caused some concerns during the 2011 sowing.

“The 2010 wet harvest provided massive quantities of residue for shelter and food. A baiting program was required to protect emerging crops and yet some damage still occurred due to severe populations.

When it comes to weed control, it is all in the timing. “Weed control should be implemented early for maximising herbicide efficacy and to protect stored moisture profiles and subsequent mineralisation.”

“The dynamics or botanical composition of weed spectrums continually change depending on what chemistry is applied. Glyphosate-tolerant weeds such as Fleabane, Sow thistle and Prickly lettuce can quickly invade conservation farming paddocks,” explained Al.

“We use alternative chemistry controls. We implemented the “Double Knock” approach on Fleabane four years ago with tremendous results. It involves the application of Glyphosate and additional compatible products followed by a Gramoxone spray 14-28 days later. This approach is also used prior to sowing on a percentage of area each year with Sprayseed often substituted for Gramoxone and the second spray application implemented 7-14 days later.

“It’s been invaluable in minimising weed invasions our crops,” said Al.

“We have found the key to weed management in conservation farming systems, where weed control is totally dependent on herbicides and crop competition, is to continually change the chemistry groups and monitor the weed species present. Flexibility in the cropping rotation is important for the ability to adjust crop paddock selection if required due to weed population changes.”

When it comes to plant, the Payne’s boomspray is considered the most important machine in the system due to the total reliance upon it for removing weeds.

“We’re currently running a 7036 Hardi and will definitely move into a self-propelled unit in our next trade. Having a specific machine will enable spraying to be undertaken during times when the tractor is being utilised for other things, such as during harvest.”

It is Al’s agronomy networks, combined with a range of on-farm variety and chemistry trials that assist his ability to flex to meet the challenges of conservation farming systems and what the seasons serve up each year. He also taps into groups and networks such as the Kondinin Group, Landcare, NSW Farmers and CANFA.

“The best learning platforms are industry groups. Being part of these groups helps to identify where the problems might be and hopefully then avoid them!”

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Lisa & Al Payne receive the finalist award for the 2011 Conservation Farmer of the Year Award from Lachlan CMA’s Ian Packer

Al Payne

Nuts & bolts

Prior to 1990: Farm not segmented into production enterprises. Ley period such as under sowing Barley with legume based pasture species was utilised to avoid stubble burning.

1990: Stubble retention implemented in cropping paddocks. Grizzly disc used to incorporate residue and facilitate sowing operation.

1994: Initial direct drill on some key cropping paddocks. 511 combine converted to 175mm row spacing. Headaches! Why so hard? Penetration and residue flow. Very dry year only harvestable crop was stubble country with profile moisture.

1995: Implemented better fallow management with ground cover and moisture retention prioritized. ”Double Knock” used prior to sowing for Ryegrass control.

1997: Connor Shea seeder purchased and converted to 300mm. A little better! Farm segregated into production zones.Total stock exclusion on best soil types. Mixed farming paddocks and improved pastures given more emphasis for groundcover retention.

1999: Merino breeding discontinued

2004: Purchased 12m Bourgault seeder with Simplicity 12,000 litre triple box bin. Seeder on 250mm row spacings. Light bar used for spraying.

2005: Introduction of pasture establishment without cover crops. Exclude the use of Glyphosate 2-3 years prior to pasture sowing to promote regeneration of perennial native grass species.

2007: Seeder converted to 385mm row spacings. Upgrade to mapping on boomspray.

2008: Autosteer on Boomspray tractor. ”Double Knock” used on Fleabane.

2009: 2cm Autosteer on seeding tractor.

2010:Utilise GM canola for non-selective nature of weed control. Particularly targeting grasses such as Ryegrass and Wild Oats. Inter-row sowing incorporated into operation.