

# MAINTAINING PROFITABLE FARMING SYSTEMS WITH RETAINED STUBBLE

Jason & Stacey Coleman



The Colemans have a stubble retention philosophy but will manage stubble according to seasonal conditions and pest pressure, burning if they think it's necessary.

## A flexible approach

**Decisions on stubble management are informed by seasonal conditions on Jason and Stacey Coleman's Temora property.**

Farming requires a balance between forward planning and being flexible and responsive to the seasonal conditions, and sometimes this requires that philosophy take a backseat to pragmatism.

This is something that Jason Coleman knows only too well. Although the Colemans support the practice of stubble retention, in recent years they have returned to strategic burning of their stubbles, when pests, weeds and even frost have threatened to impact crop yield and profitability.

Jason and his wife Stacey, with Jason's parents Peter & Lyn farm at Temora, growing wheat, canola and barley in a 100 per cent cropping operation. Jason is active in research and extension activities in the area, both as a member of the Temora Ag Bureau, a local grower group, and as hosts of FarmLink trials on the property as part of the GRDC Stubble Initiative Project.

Jason began farming in the 1990s, and back then the property ran sheep in addition to the cropping operations. Stubble management practices in those days involved running the sheep over the crop stubble during the summer, before burning the stubble just prior to sowing.



PHOTOS: SARAH CLARRY

Stacey and Jason Coleman

### SNAPSHOT

**Property:** Moascar

**Owners:** Jason and Stacey Coleman, Peter & Lyn Coleman

**Location:** Temora, New South Wales

**Farm size:** 4320ha

**Annual rainfall:** 525mm

**Soils:** Red loam, red brown through to red clay

**Soil pH:** 5.0-5.5

**Enterprises:** 100 per cent cropping: wheat, barley, canola.

**Equipment:** Case 450 Rowtrac Steiger®, Case 340 Magnum, Horward Bagshaw Scaribar, 2 x Case 7230 Header with 12m front, Hayes 36m boomsprayer, Macdon M205 Windrower

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PHOTO: SARAH CLARRY

A Case 450 Rowtrac Steiger® has provided more versatility and better flotation in wet conditions.

The millennium drought was a turning point for many in how they thought about moisture retention in their cropping systems, and the Colemans were no different. Throughout the dry years in the 2000s, they began keeping sheep off the stubble over the summer months with regular summer spraying and moved away from burning with a view to conserving moisture. From 2009 onwards, the Colemans transitioned away from stock moving towards a 100 per cent controlled traffic cropping operation.

"A proper controlled traffic stubble retention system is much easier without stock," Jason says, "because running stock over your stubble and smashing that straw into the ground makes inter-row sowing nearly impossible with high stubble loads."

## CONTROLLED TRAFFIC

Following the decision to concentrate on cropping, in 2009, the Colemans took the further step of moving to a full controlled traffic system, to provide better moisture retention and water infiltration.

"It just made a lot of sense to have fewer compacted wheel tracks through our paddocks," he says. "We now have solid wheel tracks making it easier to drive in wet conditions and providing better

infiltration for the rest of the paddock."

To change the system over, Jason modified their existing machinery out to three meters. They bought a new tractor, and shifted out axles on their spreaders and wheel spaces to put all the wheels out to three meters.

"It didn't really take a lot of modifying," Jason says.

He sees no disadvantages with a controlled traffic system, apart from some minor issues with sunken wheel tracks. To manage this, the Colemans dry hire a Kelly chain to level off the paddocks and renovate the wheel tracks.

Their most recent major equipment purchase was a Case 450 Rowtrac Steiger®, last year.

"We wanted a tractor that was a lot more versatile and one that we could use all year 'round. We can pull the seeder with it, and it's got linkage and PTO. We can use a linkage spreader for spreading urea and a PTO for the chaser bins at harvest," Jason says.

"The tracks provide much better flotation for the wetter conditions we get in winter and they do less crop damage as well. With a track that's two metres long, it spreads the weight evenly over the whole two metres, compared to the small imprint that a tyre track makes."

## MANAGING PESTS

Although Jason acknowledges that insect pressures can occur in dry years when crops are stressed, the Colemans have observed that the recent run of wetter years has made the problem much worse, with slug and slater numbers increasing. They also had issues with mice in 2010, following a wet summer that resulted in a lot of summer weeds. Jason realised that heavy stubble loads were providing the habitat the pests required to complete their life cycles.

"For the first few years we were retaining stubble, there wasn't a noticeable increase in pests, but after five or six years, the numbers really started building up."

Heavy stubble loads were also making seeding difficult.

"We had a lot of trouble at sowing, which reduced our efficiency and became a logistical and timing issue. We tried disc coulters on our tine machine to cut through the straw and a few other different techniques," he says.

"It made us realise how diligent we have to be with summer weed control. Summer spraying has to be up-to-date and on time, and we can't let the weeds get too big or too rank. Little things like that will make a big difference."

## WEED CONTROL

While retaining stubble provided positive outcomes for the Colemans during the latter years of the drought, they have found that it has impacted their herbicide flexibility.

"We've seen a lot of benefits with stubble retention, but also some negatives," Jason says. "One of the big drawbacks is that we are unable to use trifluralin to its maximum ability because there is no soil contact. You need to have bare soil and mix it in with tines, so that's been a disadvantage in our efforts to control weeds."

"Trifluralin is a chemical that has been around a long time but it still works for

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us. It's a shame to take that out of the system," he says.

"Having stubble also means I question some of our herbicide applications, such as Roundup® or Gramoxone®. In a stubble system with some shading effects, the chemical may be missing some of the plants. Without full spray coverage, I worry about resistance developing."

Ryegrass, wild oats, prickly lettuce, sow thistle and fleabane are the main weeds he is contending with.

Just as they are now comfortable with using occasional burning to deal with heavy stubbles, the Colemans will include tillage when necessary, to provide another weed control measure to their toolkit and take some pressure off the chemicals.

"Twenty years ago we were on a path to a no-till system," Jason says. "But now we will occasionally till if it's going to help with weeds."

### STRATEGIC BURNING

Rather than applying a one-size-fits-all philosophy to their farming approach, the Colemans now look at their stubble on a year-by-year basis and manage it according to the seasonal conditions.

"If we have a good harvest and we have good stubble, will probably burn it. If it's a lean harvest and the stubble load is a lot less, we will usually harvest the straw lower, leave it and inter-row sow," he says.

The appeal of occasional burning the stubbles for Jason is that if there are weed seeds carried over through harvest, the heat will destroy them.

"Burning provides a relatively cheap form of weed control compared to herbicides," he says.

### FROST MITIGATION

The Colemans experienced bad frosts in 2012 and 2013 and noticed that the damage was worse in the areas where stubble was retained. So in 2014, they burnt half the stubble on the farm, concentrating on the frost-prone areas.



PHOTOS: SARAH CLARRY

For Jason, moisture retention and weed control are the most critical aspects of his farming operation.

As a by-product of that operation, he found that the following winter, slug numbers were down in those areas where the stubble had been burnt.

"It didn't eradicate the problem altogether, but it was a lot better," Jason says. "So we've now burned for the past two years. When we get back to a lean harvest, we will keep our stubble and inter-row sow again."

He factors frost risk into his decisions about crop rotations. Currently he is growing barley on the heavy clay frost-prone country, where the canola was badly



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Following leaner harvests, the Colemans harvest the straw lower and inter-row sow.

frosted a couple of years ago.

"Barley has better frost tolerance than wheat. At some stage canola-wheat will have to be planted there, but we try to put barley in the frost-prone areas where possible," he says.

## CANOPY MANAGEMENT

For the past 10 years, Jason has been on a 300mm row spacing, up from 230mm previously, because he says it is a better fit for inter-row sowing.

He uses a MAP-Zinc blend for a starter fertiliser at 60kg/ha, with no upfront urea, opting instead to topdress the canola at four to six weeks and the wheat at 10 to 12 weeks.

His rationale is to manage the early biomass growth and feed the plant nitrogen when it is most needed, at stem elongation or flag leaf stage in the case of wheat.

"We try not to bulk the crop up too much early on. We time our nitrogen application to keep them healthy but not so big and robust that they run out of nitrogen and moisture in spring."

## FARMING APPROACH

Jason's approach to farming is one of constantly revisiting the prevailing

wisdom, and questioning the best way to achieve consistent, profitable and sustainable results. In so doing, he doesn't limit himself to a particular farming philosophy. The success of his approach can be measured in the continuing expansion and refinement of the family enterprise.

"Every year we're always doing something different on the farm. They're just little things; not a lot of money is involved," he says. "This year, for example, we tried two paired boots on our air seeder, just to see how a paired row compared to a narrow row. Or we might compare varieties and sow them in different locations. We just like doing our own trials."

"One thing we have learned over the past 10 years is to try something different all the time, whether that be changing crops, varieties or herbicide groups," he says. "And it's critical to have a management rotation as well: burning, non-burning; tillage, no tillage. For me that is probably just as critical as changing varieties and time of sowing."

"The whole operation is based on timing and moisture really. Timing, moisture and weeds. Everything works around that."

## MORE INFORMATION

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