

Sheep a valuable complement

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Sheep can be a valuable complement to no-till cropping provided they can be managed so they are productive, profitable and don't hold up seeding or harvest.

Samuel Tiller and his father Michael, who farm in the Mid North, have been 'back in sheep' for almost a decade after a break of about the same length and have developed a livestock management system that is meeting all those objectives.

Keys to their system, which is quite different from the one Michael was using 25 years ago, include lambing down their Merino ewes in a feedlot during seeding and using header chaff as the basis of the feedlot ration.

The sheep are still used to clean up grain on the ground in crop paddocks after harvest, but stubble grazing is closely managed to minimise the risk of the stubble being knocked down and trodden onto the soil surface, where it could cause problems at seeding. This is achieved by using high stocking rates and leaving the sheep in each paddock for no more than a week or so.

Michael and Samuel are based at Balaklava, and farm 3,600 ha on five blocks spread from Salter Springs and Auburn in the north to Avon and Erith in the south. This geographic distribution reduces frost and other weather risks, but means they are farming diverse soil types from heavy red clays and chocolate loams through a variety of ironstone and sandstone country to deep non-wetting sands, with average annual rainfall ranging from 300 to 450 mm.

Michael moved out of sheep to concentrate on cropping in 1996, after selling a South-East property that carried most of the flock. Other factors influencing that decision included health issues, a shortage of labour, poor returns from wool and meat and a promising outlook for cropping. Ten years later, after a run of dry years and problems with herbicide-resistant weeds in the cropping program, he decided to return to running sheep in parallel with the cropping program.

The decision to begin running sheep again was prompted by cost pressures on the cropping program, problems with



SAMUEL TILLER CHECKS THE CONDITION OF A STUBBLE Paddock AFTER GRAZING.

herbicide-resistant ryegrass and a desire to spread the income base, Sam told members at the SANTFA conference.

Initially they ran the stock on pastures and stubbles as Michael had previously, but within a year or two they began to encounter the same issues and time pressures that prompted his decision to get rid of his sheep more than a decade earlier.

This time Sam and Michael decided to re-think what they wanted to achieve and what they were doing and look for methods that might fit better with their cropping system and available resources. The new approach, which they developed about six years ago, integrates the sheep with the cropping program, generating benefits for both.

One of the critical cross-over points between the livestock and cropping programs is the header chaff they collect in a chaff cart as part of their weed control program, with barley chaff the basis for the feedlot ration fed to their ewes in the lead up to and during seeding. Sam prefers to use barley chaff rather than wheat chaff because sheep do better on

barley than wheat, he said.

Sixty per cent of their 2,000 Merino ewes are mated to Merino rams to provide replacements for the ewe flock, with wether lambs and surplus ewes sold off. The other 40% of the flock is mated to White Suffolk and Dorset terminal sires to produce first-cross sucker lambs for the meat market.

Shearing is in late January or early February and the ewes go into the feedlot in about March, ahead of lambing. In most years they spend eight to 10 weeks in the feedlot.

Sam and Michael aim for 100% lambing, with each ewe pregnancy tested as it goes into the feedlot. Old ewes not in lamb are culled and sold. Young ewes are re-mated.

The feed lot comprises four yards each 100 metres by 70 metres. Each yard holds 500 ewes, so each animal has a space allocation of 14m². They started with a smaller space allocation and larger mobs, but ran into problems with maiden ewes and wet conditions. A change to their present set-up overcame those issues and has continued to work well.



TOP: CHAFF FOR THE SHEEP IS STORED IN HAY-BALE BUNKERS CLOSE TO THE FEEDLOT.

ABOVE: NOT FLASH BUT EFFICIENT. THE FEED-OUT TRAILER USED TO CART CHAFF FROM THE STORAGE BUNKERS TO THE FEEDLOT.

RIGHT: THE NEW CONVEYOR-FED CHAFF CART WILL IMPROVE HARVEST EFFICIENCY AND ENABLE SAM AND MICHAEL TO MAINTAIN THE PRESSURE ON WEED POPULATIONS.



“You need at least 10m²/ewe and need to pay attention to drainage.”

Lambing the ewes down in the feedlot means they can be fed and checked quickly,” Sam said. Chaff plus trail-fed grain or a straw-based mix is distributed every second day, and one man can feed and check the entire flock in about two hours.

Taking the stock out of the paddocks for most of autumn has the added advantage of letting the pastures get away early in the season without grazing pressure, Sam said.

They have the chaff tested for its feed value, which ironically is often higher in poor crop years because there is more nutrient left in the straw and a bit more shrivelled grain in the chaff stream, and use a computer program to design a cost-

efficient ration that meets the nutritional needs of their stock.

Feeding header chaff helps keep feedlot feed costs down. Sam has calculated the cost of header chaff at \$30/t, which is cheaper than straw, even though the chaff provides better nutritional value; often containing about 200 cereal grains per 20 litres.

Using a chaff cost of \$30/t, it costs 14c/head/day for the chaff ration fed when the ewes go into the feedlot. This increases to 28c/head/day for lactating ewes. Equivalent straw-based rations cost 19c/head/day for the entry ration and 43c/head/day for lactating ewes because more grain has to be feed in a straw-based ration.

Each 500-head mob also receives grain at a rate increasing from 400 kg/day at entry

to 700 kg a day at full lactation.

Feeding a chaff ration as well as grain has the additional benefits of improving the chances of shy feeders getting adequate nutrition and providing something for the lambs to start foraging through, resulting in faster lamb growth rates, Sam said.

Using header chaff for stock feed could also pen the way for the animals to spread weeds, something he is keen to avoid, so the ewes are fed straw for two or three days at the end of their time in the feedlot to ‘clean them out’ before they go back onto pasture, at stocking rates of five to 13 DSE/ha. The specific rate depends on the amount and quality of the pasture, which is grazed until it is about 30 mm high, at which stage the mob is moved to a fresh paddock

The transition from the feedlot ration to



STOCK BLOCKS READY FOR USE.

green pasture can cause a 'break' in the wool and Sam is considering feeding some chopped medic pasture for the last few days the stock spend in the feedlot in an effort to smooth the nutritional transition from the feedlot to the fresh legume pastures. This would improve wool quality by minimising the risk of a 'break' and keep the lambs growing steadily instead of weight gains stalling, as they often do at present.

Sam and Michael make their own stock blocks, which are provided all year round to ensure the sheep have the energy and protein they need to gain maximum nutritional value from the feed available.

The blocks contain salt, urea, dolomite (for manganese), vitamins and mineral concentrate, plus sulphur, molasses and a source of protein; usually crushed lupins, if they have a clean sample, or canola meal.

They place a high priority on making sure their stock have adequate water in

paddocks and the feedlot.

"It's important to have a good water supply with a flow rate high enough to supply water as quickly as it is needed by the stock," Sam said. "The feedlot has permanent troughs fed from rainwater tanks nearby and in the paddocks we use portable troughs fed from a tank on a trailer."

Having sheep as part of their enterprise influences every decision, even machinery-related decisions like seeder setup, Sam said.

Sam and Michael have been using a chaff cart at harvest since 2006 to remove weed seeds from their cropping paddocks as part of a concerted program to reduce weed populations and get on top of an emerging herbicide resistance issue.

However, this program, which has already resulted in a significant reduction in weed numbers and herbicide costs, struck a problem last year when they couldn't get the new, bigger chaff cart they had just bought set up in time.

This meant the chaff was spread back on the harvested paddocks behind the header.

Sam estimates that putting the chaff, and the weed seeds it must have contained, back on the paddock instead of removing it has set the weed seed reduction program back three years, and expects to have to spend more on pre-seeding weed control this year as a result.

The new Riteways chaff cart, which is fed by a conveyor, will replace their previous smaller cart that was fed by a blower system that did not operate well when moisture levels were high or there were snails in the crop. It also had three wheels, which increased power requirements for towing in sandy soils because the front wheel would turn sideways.



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The new cart requires less power to pull, and because the straw is carried from the header to the cart by a conveyor, not a blower, should pose fewer problems with blockages. It has only two wheels, making it easier to tow and more manoeuvrable, and can be fitted without the header modifications needed to fit a blower system.

Sam and Michael's main crop is wheat, with barley, canola, peas, lupins, oats for hay and self-regenerating medic pastures also part of the rotation.


The medic provides a disease 'break' for the cereal crops and opens the way for different weed control options including slashing, grazing and selective weed control by wick application of chemicals to tall weeds like radish.

The core of their cropping system is two years of cereals and one year of pulse or canola, with phases of one to two years of medic pasture, depending on weed populations and the need for sheep feed. The two years of cereal are either wheat then wheat or wheat then barley, depending on how clean the paddock is. Barley is better able to compete with weeds, so if weed numbers are high in the first cereal year, the second year is barley.

They catch the chaff in the second year of cereal and the following 'break' year so weed populations are low going into the wheat crop following the break.

Using a chaff cart slows harvest and increases header fuel consumption, Sam said, and dealing with the chaff after harvest involves something like three weeks' work. However, the combined seed-reduction effect of removing the header chaff and cutting hay has cleaned up their paddocks so they spend less money on herbicides and can safely sow dry in most paddocks if they wish. And as a bonus they have the chaff to feed to their sheep.

During harvest the chaff is dropped at the end of each paddock. After harvest it is picked up and trucked to two straw-bale storage bunkers, each about 10 by 30 metres with sides three metres. From the bunkers, located close to the feed lot, the chaff is carted to the feedlot and fed to the sheep.

Any chaff left in the paddocks because it is not needed for the sheep while they are in the feedlot is burnt before seeding to destroy the weed seeds it contains. 

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