



Perennial pastures prove production worth

Changing to improved perennial pastures and rotational grazing is helping Mark Buckettt, Naracoorte, South Australia, increase lamb production and better use available feed. He recently shared some early results of his *EverGraze*® Supporting Site with Kylie Nicholls.

"I am a member of the South East Prime Livestock Achievers Group and each year members can nominate what they would like to trial on their property. I wanted to look at how increasing the perennial component would allow me to improve the kilograms of lamb produced per hectare," Mark said.

"I also thought that by rotating stock through paddocks more, I could better manage my pasture and ensure I had feed ahead of them.

Currently, we run stock on a slow rotation, about 3-6 weeks in each paddock, but I don't think we rest the pasture sufficiently.

Initial results show we have increased kilogram per hectare of lamb and the perennials, particularly phalaris, are proving their worth.

The *EverGraze* trial started early during 2008 and will run until mid-2010.

Pasture trial innovation

Our pastures are predominantly annuals, such as ryegrass, barley grass and brome grass, with small amounts of phalaris and sub-clover.

I've always been keen to increase the perennial content, it makes sense to look after something that will keep coming back year after year, although annuals certainly still play a part in our system.

When we get out-of-season rain, which seems to be happening more often, the perennials

respond and you get a green pick, while annuals just deteriorate even further.

During June 2004, I sowed 22 ha with a mix of perennial species, including a winter-active fescue, phalaris, cocksfoot and sub-clovers.

The paddock had been previously top spread with 100 kg/ha of single super. We sowed about 6 kg/ha of Rolute fescue with higher rates on the flats, 1 kg/ha of cocksfoot on the rises, 1 kg/ha of phalaris and 8 kg/ha of sub-clover. Sub-clover varieties Trikkala and Gosse were sown on the flats and Leura and Seaton Park on the rises.

Since then, we've applied a regular dose of single super at 100 kg/ha before the break-of-season.

In the initial year, I grazed the paddock lightly at a stocking rate of about nine dry sheep equivalents per hectare for short periods, about 7-10 days. Through summer we just took the tips off, I tried to make sure the paddock got an adequate spell to maintain persistence after establishment.

As part of the trial, I split the paddock into six smaller paddocks last year, just under 4 ha each in size, with a central watering point in the middle. I found we weren't grazing the whole 22 ha to its full potential. There were some bare patches where sheep had camped or grazed the pasture right down, while in other areas the grass became tall and rank.

Subdividing it using a three-wire electric fence has worked well and I am getting a more even graze across each paddock.

EverGraze researchers are measuring perennial persistence, soil, and condition, such as groundcover percentage, green pasture percentage, and feed-on-offer and paddock production.

farm info.

Case study: Mark Buckettt

Location: Naracoorte, South Australia

Property size: 2200 ha

Mean annual rainfall: 550 mm

Soils: Variable, ranging from loam over clay to deep sands and black loam flats

Enterprises: Self-replacing Merino flock, prime lambs, beef cattle



Photos: Kylie Nicholls

A switch to perennials and rotational grazing has seen Mark Buckettt boost lamb production per hectare by 30%.

The main thing we monitor is the perennial plants to make sure none are lost.

Flexible rotation

The trial is being grazed using a shorter rotation of about 3-10 days compared with our slow-rotation system. It is flexible depending on pasture condition and feed availability. During the slower-growing months, such as summer, it may get grazed for up to 7-10 days but during spring the rotation speeds up to about 2-3 days.

I measure feed-on-offer before the sheep go in and after they come out aiming to leave about 1500 kg of dry matter per hectare, which means enough light reaches the plant base keeping the pasture dense and ensuring there isn't bare ground.

key points

- A switch to perennials has better utilised out-of-season rain and feed availability
- Combined with a move to rotational grazing, this system is yielding increased lamb production per hectare
- Flexibility is the key to success – feed availability and pasture condition provide a guide for grazing management.



We started the first year of the trial with 11 DSE/ha, 2 DSE/ha above our average, and aim to increase it to 15 DSE/ha for the second year.

During spring it can be difficult to get on top of the feed, so last year we introduced about 62 cows and calves (equivalent to an extra 40 DSE/ha) for a couple of weeks to better use existing pasture.

Production boost

One of the trial's main aims is to increase the kg/ha of lamb through increased stocking rates. We run about 2500 first-cross ewes, mated to Poll Dorset rams, for a May-June lambing. Most of the lambs are sold at a carcass weight of about 20-22 kg. If they haven't reached this weight at weaning, we shear them during November and finish them on our dryland lucerne, aiming to sell them over the hooks at about 22-24 kg.

The initial results have been successful, with the trial paddock yielding \$94/ha better than the lambs produced under our current system.

The lambs run on other parts of our farm were probably slightly heavier overall, but the increased stocking rate produced more kg/ha.

Perennial performance

Phalaris has proven to be the most successful and persistent species. It is a good buffer,

persistent and it is just a matter of being educated about preventing any toxicity.

The fescue looks magnificent during winter, being winter active, but it doesn't seem to show up as much as the others.

Perennial ryegrass is a no-no, it just doesn't hang around for long enough, while the dryland lucerne works well.

Long-term investment

Although the perennials are expensive to establish, I think you have to spread the cost over the long term – I believe it is a valuable long-term investment.

Running the trial has given me a real feel for how this system would work across the whole farm, there is no better way of learning than actually gaining first-hand experience.

I will consider subdividing our existing paddocks using portable electric fencing, installing some lift-up gates along the fence lines so when ewes lamb, I can lift the fences and let them move themselves gradually into the next paddock.



Photo: Kylie Nicholls

A three-wire electric fence works well to move stock between paddocks with ease.

I was unsure of how the trial rotation would work when the ewes lambled and whether we would still be able to move them, but it has been fine. When lambs are a couple of days old, the ewes move into the fresh paddock by themselves. The three-wire electric fence works well.

The *EverGraze* trial has given me a different way of thinking about things – you can be more flexible and take advantage of the rain that falls throughout the year.”

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By Dr Nick Edwards, SARDI

science behind the story

- Historically, perennials have been used a lot in this region, but during the past 10-20 years their use has probably declined. Farmers have focused less on grazing and more on cropping. But, I think there is a swing back to perennials as farmers are seeing the benefits.

Recent dry springs and the chance of getting rain outside the normal growing season means perennials can kick along dry matter production.

But it is important to follow the *EverGraze* mantra – right plant, right place, right purpose.

Across most farms there is a variety of soil and landscape types, some are suited to phalaris, others to lucerne, tall fescue or other species. There are enough species to deliver one to suit each situation.

Phalaris is a success on Mark's trial site and it has responded well to rotational grazing.

I'm also involved in running a local 1000 ha mixed farming property and, like Mark, think we are better to have the extra production phalaris offers and manage any potential animal health issues, than have no feed with no animal health risks.

Perennials enable you to extend spring and, with rain, you can pick up some summer growth as well.

I think the biggest result for Mark has been increased production through increased stocking rates. Not only has the pasture improved but the more intensive system has lifted pasture utilisation and really boosted profitability.

At the Struan Research Centre in the south east, we have an intensive rotational grazing system running bull beef, moving small mobs every two days. During the past 3-5 years, production has been consistently better than set stocking.

It is just a matter of working out how rotational grazing will fit into your system.

Paddock set-up is important as is ensuring enough grazing lies ahead of the livestock. Also plan how many and what class of animals to run. For example, if you plan to finish lambs during summer on lucerne, ensure enough paddocks to allow a 4-6 week rest between grazings and enough lucerne in total to 'finish' them (say 12 weeks worth).

Rotational grazing does not have to mean spending a lot of money establishing new fences and infrastructure, such as watering points, but a plan will help maximize the benefits of intensifying your grazing.

- Dr Edwards is a *Grazing Production Systems Senior Research Scientist with SARDI and a farmer in his own right.*

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