

21st Century grazing at Guyra

Rob Kelly's quad bike may look like something out of *Mad Max*, but it plays a serious (and peaceful) real-life purpose in a system that has already more than doubled his gross margins.

'Mt William', the 570ha property east of Guyra, NSW, that Rob jointly runs with his parents, Ross and Wendy, sister Leanne and brother Matthew, is typical of Merino country in the NSW Northern Tablelands, with low-to-moderate fertility granite soils and naturalised pastures.

Until recently, the family was also typical of the region in that they ran sheep in a largely set-stocked system of about six ewes per hectare, with almost continuous grazing of the same paddock.

But unusually, 'Mt William' has, for the past 2½ years, achieved sustainable stocking rates of 10 ewes per hectare and gross margins of \$335 per hectare – a 69% increase on the property's set-stocked gross margins. And Rob is confidently aiming for better.

Key points

- Merino gross margins more than doubled through grazing management.
- Pre-lambing ewe fat score is an important factor in lamb rearing success.
- Supplementary nutrition before lambing can substantially improve weaning rates.
- Rotational grazing can have an adverse impact on lamb weights.
- Small, highly intensive rotational grazing systems may help relieve stocking pressure on the rest of a property.



On his kitted-out quad NSW producer Rob Kelly can dismantle and set up hot wire fences for the techno graze system on his Guyra property.

Techno Graze™

Central to this result is a highly intensive rotational grazing system, Techno Graze, which pushes the principles of rotational/cell grazing to the extreme (see box on opposite page).

Rotational grazing works on the principle of short graze/long rest, which allows pastures to recover from grazing and maintain optimum health of the vegetation.

In the two-year study that Rob conducted with Dr Lewis Kahn from the University of New England, a continuous 5-6 ewe/ha grazing system that mimicked traditional management on 'Mt William' was monitored alongside two intensive Techno Graze trials stocked at 6.8 and 9.7 ewes/ha.

The Techno Graze system was established over an area of only 75ha, partly to test its effectiveness, partly because of substantial set-up costs at \$495/ha.

Intensive rotations return more

Monitoring showed that continuous grazing was more effective in one respect – lamb weights at weaning – but when core productivity factors like gross margins, pasture health, number of lambs at weaning and worm burdens were calculated, the intensive rotations were a clear winner.

In fact, continuously grazed ewes stocked at five head per hectare returned \$29.65 a head over two years, producing a gross margin of \$148.26/ha.

Intensively rotationally grazed ewes stocked at 6.8/ha returned a per-head gross margin of \$30.81 and a per-hectare return of \$209.48. At 9.7 ewes per hectare under intensive rotational grazing, returns climbed even further to \$34.60/head and \$335.64/ha.

"The figures suggest that all of the Northern Tablelands is underperforming," Lewis said.

"Rob has been averaging a stocking rate of 15 DSE/ha on coarse granite and naturalised pastures growing on moderately fertile soils. On that basis, gross margins across much of the region could realistically be \$400-\$410 a hectare from stocking rates of 18-20 DSE."

Despite carrying substantially more animals, the long rest periods needed for on the rotationally-grazed country have ensured growing volumes of feed.

The trial started in May 2003. By April 2004 – the final flush of the New England growing season before the onset of winter – the rotationally grazed areas were carrying 3,500-4,000kg/ha of dry matter vegetation compared to about 1,000kg/ha for the set stocked portion.

Even with lower lamb weights, the rotational systems weaned an average of six per cent more lambs than the set-stocked system. Lamb weights in the rotations were initially an average 2.4kg lighter than their set-stocked counterparts, so their

better survival has proved something of a conundrum for the study.

Lower worm burdens

Lewis believes several favourable factors in the rotations are at play, including greater milk yield in early lactation, smaller paddocks leading to closer proximity of ewes and lambs, and lower worm burdens of lambs.

Other studies have demonstrated the advantages of rotations in breaking the worm cycle, and the 'Mt William' trial reaffirmed them.

Lambs under rotational grazing initially had tenfold less internal parasites than their set-stocked brethren; this dropped to five times less in the second year, as Rob slowed down rotations in an attempt to boost lamb weights.

The weight challenge

Matching lamb weights on the rotational system with those achieved under set stocking has proved one of the most challenging issues for the Techno Graze system.



Producer information

Producer: Rob Kelly

Location:
Guyra, New South Wales

Property area: 570ha

Enterprise:
Superfine Merino stud, self-replacing Merino flock and breeding cows for backgrounders/feedlots

Goals:
Maximise productivity of sheep enterprise

Pastures: naturalised pastures

Soil types: granite soils

Annual rainfall: 850-900mm

"It seems that the lambs' relative situation at lamb marking will hold true for 12 months later," Rob said. "If the Techno lambs are a kilo behind at marking that remains the same for the next year."

He's still not sure why the discrepancy occurs, but feels it might have something to do with the experienced ewes cleaning up the sweeter pasture before the lambs get to it.

"This year we've lowered the mob density and slowed down the rotation up to lamb marking," he said.

"Obviously that compromises the grazing system, but we're looking to work with a whole system, not just pastures. We try and counter that by giving the pastures that have had a longer graze a spell of 50-70 days, instead of 30-40 days."

While it's too early to tell, the strategy so far seems to be working.

Sustainable stocking of 15-16 DSE/ha

The results of the study, and his own observations, are so convincing that Rob is now working toward establishing a second Techno Graze system, this time with the benefit of hindsight.

"I'll be making it more permanent, with one hectare paddocks instead of the 0.4ha I'm using now to make it less intensive, easier to manage," Rob explained.

Along the way, he's aiming for a sustainable stocking rate of 15-16 DSE/ha – not an impossible aim, given that at 10 ewes per hectare he's running 14 DSE/ha.

"I'd now advise anyone setting up one of these systems to put it on their best, most productive country, and work it to be the driving force behind the rest of your enterprise. With one or two Technos taking up a small area of your best ground, you can run enough animals to take the pressure off the rest of your country so that you have an opportunity to develop it."

Techno Graze – what is it?

Techno Graze was developed in New Zealand by Harry Weir of KiwiTech International. It has become extremely popular for bull-beef operations, but the principles can be applied to all grazing enterprises.

Most rotational systems employ big mobs in small paddocks to provide a quick, hard graze followed by a long rest. Techno Graze differs in employing smaller mobs tightly packed on tiny paddocks – about 110-200 ewes on 0.6ha at 'Mt William' – within a system set up for maximum management efficiency.

On standard rotational grazing systems, one mob tends to move around asymmetrical paddocks. Techno Graze uses a system of similar-sized lanes that are progressively taped off to provide the same effect for up to six small mobs.

On 'Mt William', Rob Kelly has erected six lanes each about 100 metres wide and 1,500m long. He progressively moves hotwires down the lanes to provide a running succession of six adjacent paddocks, resulting in about 60 paddocks per lane over the course of a rotation.

This means that each small paddock gets about 3-4 days of blanket grazing followed by a 45-90 day rest. It also means that six small mobs can be managed individually side-by-side to allow management strategies like single-sire mating.

More information

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