

A system that delivers

Getting a good price per kilo is one way to make a profit in the wool business. Sustainably producing more wool from the same land area is another.

After working with intensive rotational grazing (IRG) for four years, and studying wool marketing on a Nuffield Scholarship, New England grazier Rob Kelly believes that getting greater productivity from his land is a more reliable route to increased profitability than waiting for higher wool prices.

The IRG process known as TechnoGraze has delivered him that result (see breakout). The carrying capacity on the Kelly family farm 'Mt William', east of Guyra, NSW, has delivered 40% better returns on the previous system of management, and gross margins per hectare have jumped away. Most importantly, monitoring is showing that IRG is steadily improving the productive capacity of the land.

For Rob, the combined effect is to give him greater control of his future as a woolgrower.

"The wool market pits individual wool growers against each other," he says. "There are also a lot of factors in the market outside the control of growers."

"But I'm in control of things on the farm. That's where I can be responsible for making a difference to my profitability."

Looking to generate a higher income from his existing land resources is a better bet than buying more land, Rob argues.

Land prices in high-rainfall areas like the New England are now disproportionately high relative to agricultural returns, making it difficult to pay back a land investment on farming revenues alone. Acquiring more land also means additional



Producer information

Producer: Rob Kelly

Location: Guyra, NSW

Property area: 620ha

Enterprise:

Commercial and stud Merinos; beef cattle

Goals:

To sustainably increase production and enable better management of breeding ewes, while reducing parasites

Livestock:

5,000 sheep, 200 cattle

Pastures:

Fertilised native pastures, clover

Soil types: granite

Annual rainfall: 850-900mm

outlay on areas like maintenance and fuel.

"The net effect I'm looking for is to increase income level from my current land with lower costs of production, and without increasing my overheads," Rob says.

IRG has delivered these outcomes, and other management benefits – among them the ability to accurately budget feed, vastly lower internal parasite burdens, and improving pastures, and the potential for much lower fertiliser bills once critical soil fertility levels have been established.

The initial cost of setting up the 74ha TechnoGraze trial on Mt William was about \$450 a hectare. Rob believes he will establish his next IRG area for significantly less, because of the knowledge gained over the past few years. All-inclusive payback on the \$400/ha operation took about three years.

The benefits of IRG, documented by Dr Lewis Kahn, are rolling on well



Through using TechnoGraze, New England grazier Rob Kelly has improved the productive capacity of his property.

after the establishment costs were written off.

"Over a three year period, the IRG trial was stocked at levels 50% higher than is typical in New England, including on sown pastures," Lewis says.

"At the same time, because IRG allows you to micro-manage stock and pastures, it gives you more options. The beauty of the system is that how you use it is only limited by your imagination."

So why isn't IRG taking off across the country?

"For a grazier, a management change is almost a lifestyle change," Lewis says. "You can't just pour it on, or put it in the water. It's a core change to how people see themselves. IRG is going to appeal to wool producers who are ready to change how they operate at a fundamental level."

Measuring differences between TechnoGraze and two control systems is outlined on page 18.

More information

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Using subtropical grasses successfully

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Table 1 Some subtropical grass species and varieties suitable for southern Australia

Farm conditions	Suitable subtropical grass
Very acid soil	Consol lovegrass Premier digit grass
Clay soil subject to flooding	Bambatsi panic grass
Very hot environments	Buffel grass
Deep sandy soils	Panic grass, Rhodes grass
Sandy duplex soils, deep sands in areas with mild summers	Kikuyu

“Depending on the environment and species, the subtropical grasses start growing actively after winter from mid-August to mid-September”

biomass production than the best commercial varieties. The panic grasses are often preferentially grazed which highlights their palatability, while the feed quality is on the upper end for tropical grasses and is suitable for growing animals.

The next phase in developing a new cultivar is to evaluate the persistence of the elite panic grasses under grazing and also to evaluate them across a wider range of environments.

Growth patterns differ between species and varieties but they do follow a general pattern.

Winter and beyond

The winter dormancy period depends on the environment and ranges from almost no dormancy for some species in warmer environments, such as north-west NSW, to several dormant months for colder districts. Some species, like Consol lovegrass and Premier digit grass, grow better in cooler conditions than other species.

Depending on the environment and species, the subtropical grasses start growing actively after winter from mid-August to mid-September. Depending on rainfall, growth potential is high from October through to April, and can reach 130kg DM/ha/day under ideal conditions. Growth

rates decrease as the days shorten and temperatures cool.

Subtropical pasture base

Many parts of southern Australia are semi- or non-arable and commonly the pasture base is native subtropical grasses. These behave the same way as introduced subtropical species, although most natives tend to have a longer winter dormancy. The same management is also required for productive native pastures, such as correcting soil deficiencies, including compatible annual legumes, and implementing rotational grazing.

In typical 500-600mm rainfall environments of central-west NSW, where long-term rainfall is about the same each month, subtropical pastures have persisted for more than 10 years despite an increased incidence of drought.

Features of subtropical grass based pastures include their ability to use rain throughout the year, to out-compete weeds, and they are generally highly productive.

More information

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Measuring differences

With the support of MLA, Dr Lewis Kahn has for four years been measuring the difference between a TechnoGraze trial and two control systems on Rob Kelly's farm.

The three groups involve ewes:

- rotationally-grazed at an annual average stocking rate of 9.5 ewes/ha. Seasonal stocking rates are determined by feed budgeting (IRG)
- continuously grazed at an annual average stocking rate of five ewes per hectare (CG low)
- continuously grazed at an annual average stocking rate of eight ewes per ha. Seasonal stocking rates are determined by feed budgeting (CG high)

Average stocking rates for the New England are about 6 ewes/ha, usually on a semi-set-stocked basis.

In 2006, one standout figure emerged: IRG earned Mt William a gross margin of \$328 per hectare, \$35 more than the CG high group and \$240 more than the CG low group.

In 2007, when a tough winter forced Rob to drop his IRG stocking rates to 7 ewes/ha, gross margins on IRG fell to \$180. Gross margins for the continually stocked groups plummeted disproportionately, to \$38 for CG high and \$37 for CG low.

A recent faecal worm egg count (FWEC) demonstrated another established advantage of rotational grazing. In the wet 2008 summer, continuously grazed lambs had FWEC counts averaging 11,000 eggs per gram. The IRG lambs averaged just 200.

Rainfall infiltration of the soil is better within the IRG area, and the gap appears to be widening as the continuously grazed land tightens up.

In several other production indicators – lambing marking rates, weaning weights (kg/ha), and ewe fleece value (\$/ha), IRG has also proved to have a significant advantage.