

Grazing new grasses for quality meat: Subtropical perennial grasses in southern regions

A group of NSW farmers is researching pasture mixes designed to produce quality beef and lamb with a low carbon footprint. Their efforts will help provide consumers with a consistent, good quality red meat experience and the knowledge that standards for tenderness, juiciness and flavour are being met in an environmentally friendly way. The Cook's Myalls Landcare Group is trialling a range of subtropical perennial grasses, supported by a Woolworths Fresh Food Future grant administered by Landcare Australia. Between them, the 21 group members operate 15,000 hectares of mixed farming country just west of Parkes. Their pastures are traditionally based on clover and lucerne mixes.

Recent extended dry periods and summer storms have prompted group members to seek new grass species that provide good ground cover, catch and respond to storm rain, and contribute to year-round quality feed for livestock.

In the Parkes district of central west NSW, a group of farmers is looking to use perennial pasture species to improve the profitability and sustainability of their mixed farming operations.

The 21 farming families in the Cook's Myalls Landcare Group have collaborated for more than 20 years to meet the challenges of changing climatic conditions, and to accelerate grazing and livestock productivity.

Their properties, spanning 15,000 hectares, are in the upper reaches of the Gunningbland and Milpose Creek catchments, which have the potential to cause problems with dryland salinity as summer rainfalls increasingly arrive as storm events.

The average property size among group members is 850ha, and all have a mixture of cropping and livestock.

Cook's Myalls Landcare Group member Christopher Cole says mixed farming systems in the region are evolving to incorporate dedicated paddocks for grazing and – with increasingly tight margins – these need to be highly productive.

“We need pastures that harvest storm water, respond quickly to rainfall events and provide a reliable bulk of feed, adequate groundcover and competition to avoid broadleaf weed establishment,” he says.

In 2009, a Woolworths Fresh Food Future grant of \$11,000, administered by Landcare Australia, provided seed funding for the group. They set up a perennial pasture trial of 20-hectare plots on eight properties across the catchment. Three years on and the performance of grass species Katambora Rhodes, Premier digit and Bambatsi panic continue to be assessed at each site.

The species mix is matched to soil type. On heavier soils, farmers use a 50 per cent digit and 50 per cent panic grass mix. On lighter soils, they switch to an 80 per cent digit, 15 per cent Rhodes and five per cent panic grass mix. Species selection, mix and the fertiliser regimen are based on soil tests. Seeding rates are four kilograms per hectare.

The group is finding that establishment of perennial species relies on good pre-seeding weed control, a maximum sowing depth of 6mm, and sowing along with fertiliser and before early summer rains.

“The persistence, plant density and ground cover of the perennials in the trials are far exceeding our expectations,” Christopher says. “These pastures are providing high-quality summer feed, good ground cover and bulk dry feed to fill a winter feed gap, when supported by undersown clovers.”

Christopher says a plant density of about six plants per square metre is needed to achieve the goal of constant minimum ground cover of 80 per cent, pasture lengths higher than 3cm, and 50 per cent more pasture availability than with volunteer grasses and clovers. He says indications to date suggest this goal is achievable, but whether this level of cover will continue as plants mature remains to be tested.

The use of perennials in the system allows lucerne paddocks to be deferred from grazing to recover and this provides additional ground cover across whole farms throughout the year. Christopher says the next step is to evaluate mixing the subtropical perennials with winter-active lucernes to see if they can be compatibly established, paving the way for year-round green pasture grazing. A more reliable and sustainable feed base could increase livestock carrying capacity by as much as 30 per cent.

On his own 640 ha beef and cereal cropping property, Christopher has sown 80 ha with a mix of Katambora Rhodes, Premier digit and Bambatsi panic grasses.

“We are using pasture mixes of lucerne/clover and subtropical/clover on areas that have the potential to become saline,” he says. “The perennials use water efficiently before it rises to the surface, turning a possible problem into productive pastures for livestock.”

During winter, the subtropical pastures have a high proportion of litter at ground level which, coupled with legumes in the mix, should help build soil microbial activity and nitrogen content. In the longer term, the grazing system should produce more quality feed but take fewer nutrients out of the soil. This will lead to more sustainable meat and wool production.

Garry O'Brien, who runs a 2430ha mixed wool and cropping property with his parents Tim and Judy and brother Tim, has 32ha of perennials providing valuable carry-over feed in the winter months.

The family's mix of 45 per cent Bambatsi panic, 45 per cent Premier digit and 10 per cent Katambora Rhodes grass sown three years ago has persisted well and thickened up.

This winter the perennials, undersown with clover, will support 400 lambing ewes for up to three months. This provides extended green feed and fixes soil nitrogen for the grasses to access during the next summer.

"Over summer the perennials respond really well to soil nitrogen and storm rain events and are left ungrazed and allowed to bulk-up," Garry says.

"They then act as a standing hay stack of dry feed during winter... The system works well and using clover in the mix cuts our urea inputs and costs."

Garry says there has been a slight increase in lambing percentages and survival rates because of the wind protection offered in winter by the perennials, which can stand at more than one metre high.

Brett and Tina Jones are also enjoying success with perennials on their wheat and sheep property. In the first year of their 20ha trial plot, it supported 500 lambs for two months just two months after sowing. After two months grazing by the lambs, the perennials were still producing five tonnes per hectare of quality dry matter for stock feed.

This year Brett is sowing clover into the paddock of perennial grasses and will set up a cell grazing system to increase pasture utilisation.

Cook's Myalls Landcare Group members will monitor grazing productivity at the eight trial plots in the district this winter and, for the first time, will measure levels of carbon sequestration by the subtropical and legume plant mixes.

"If we can continue to develop high-quality, year-round sustainable pastures, consumers will benefit by being able to buy a higher-quality red meat product that has a low carbon footprint," Christopher says.