



EverGraze® – right plant, right place, right purpose

By **Catriona Nicholls**
Kondinin Group

ABOVE: EverGraze trials have revealed the importance of summer-active perennials to boost livestock systems and utilise out-of-season rainfall. (Photo: EverGraze)

National EverGraze – More livestock from perennials project aims to develop adaptive and productive pasture based livestock grazing systems that are 50 per cent more profitable than current systems, while significantly improving catchment health through improved groundcover, soil health and reduced recharge. These systems are also increasing resilience to climate change and variability.

EverGraze is using modern perennial pasture species and cultivars matched to different parts of the landscape to extend the growing season and increase profit from livestock production.

“The project looks at the science and the practical application of new grazing systems using more perennial pastures,” National EverGraze Coordinator, Geoff Saul, said.

Proof Sites

EverGraze has established six research (Proof) Sites where new farming systems that increase profits and improve the environment are being tested.

Recently, the EverGraze National Advisory Committee and Regional Group visited the project’s Hamilton Proof Site, which is assessing summer-active species such as lucerne, tall fescue, chicory and kikuyu.

Plant for place

Researchers have established three trial pasture systems at the Proof Site (see Figure 1) that match the site’s distinct landscape types – free-draining gravelly crests, slightly heavier soils on the slopes and a valley floor typified by heavier soils with a higher water holding capacity and subject to more frequent waterlogging.”

Species have been selected to best match these landscape features.

Perennial ryegrass system – Fitzroy perennial ryegrass on the crests, Avalon perennial ryegrass on the slopes, and Banquet perennial ryegrass in the valleys.

Triple pasture system – SARDI 7 lucerne on the crests, Avalon perennial ryegrass on the slopes and Quantum tall fescue in the valleys.

Novel pasture system – Puna chicory on the crests, a mixed pasture of Crusader and Feast II Italian ryegrass and Banquet II perennial ryegrass on the slopes, and Whittet kikuyu in the valleys.

All pastures were sown with a clover mix of subclover (Leura and Gosse) and white clover (Mink).






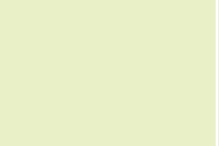


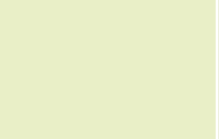
Modelling the results

Improvements in profit per hectare by adopting the perennial ryegrass system or triple pasture systems (lucerne, ryegrass, and tall fescue) were modelled using MIDAS.

key points

- EverGraze systems are achieving productivity close to 50 per cent greater than performance indicators for the top 20% of other local producers
- Drought conditions have highlighted the important role of summer-active species in responding to summer rain and reduce supplementary feeding
- Trial results highlight the need to match pasture species to the landscape to increase production and persistence, and growing season to the purpose.

FIGURE 1. Livestock production systems under elevation at EverGraze’s Hamilton Proof Site (Victoria) during 2006-07

	Perennial ryegrass system	Triple pasture system	Novel pasture system
Single lambing ewes*			
Twin lambing ewes			
Steer cattle backgrounding**			

*Single and twin lambing ewes were derived from Toland and Centreplus Merinos and mated to a terminal sire, lambing during September either into paddocks or tall wheatgrass shelters.

**Steers were stocked during March and sold to feedlots during the following January.

Under MIDAS modelling, running a prime lamb enterprise using terminal sires over Merino ewes on the pasture systems being trialled by *EverGraze* increased whole farm profit from \$172/ha to around \$400/ha.

The challenge was whether the productivity that underpinned these theoretical increases in profit could be achieved in practice.

On-the-ground results

During the past three years the *EverGraze* Hamilton site has experienced weather conditions similar to those predicted under climate change for both 2030 and 2070.

"There has been decreased winter/spring rainfall, increased temperatures and days over 35°C, increased summer rainfall events and drought conditions during 2006, where rainfall was only 72% of the long-term average," Site Leader Dr Ralph Berehndt said.

But even under these tough conditions the pasture systems have performed well growing between 7 tonnes of dry matter/ha and 15 t DM/ha. This includes winter growth rates exceeding 50 kg DM/ha/day and 1-2 t DM/ha of summer feed from some of the pastures (see Figure 2).

"The *EverGraze* site has demonstrated improvements in productivity that are 50% greater than the performance of the top 20% of lamb, beef and wool enterprises as benchmarked in the South West Farm Monitor Project (FMP)," Dr Berehndt said.

When compared with the FMP top 20%:

- Lamb production during 2006, 2007 and 2008 ranged from 351 to 774 kg liveweight/ha compared with 215 kg-300 kg liveweight/ha
- Wool production during 2006/07 ranged from 52-64 kg clean wool/ha compared with 34.9 kg clean/ha
- Beef liveweight production per hectare of 868 to 928 kg/ha during 2006 compared with 710 kg/ha.

These results suggest *EverGraze* has the potential to boost stocking rate by 30 to 40%.

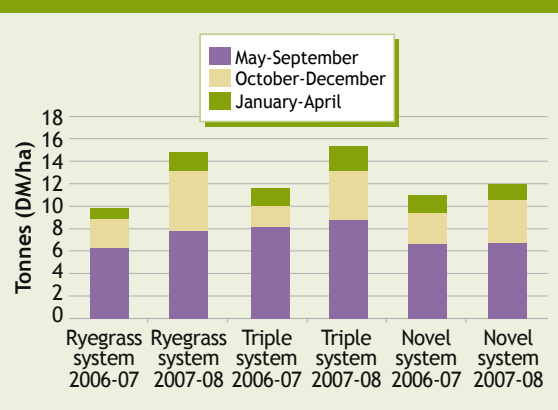
"As stocking rate is a key driver of productivity and profitability, previous calculations of industry benefits for this level of change suggests a potential \$30 million return for the sheep and lamb industries in Victoria alone," Dr Berehndt said.

Furthermore, two innovative farming systems using summer-active pastures have saved up to \$20/head in feeding costs compared with the perennial ryegrass system.

"The perennial ryegrass system could not respond sufficiently to summer rainfall, requiring destocking and containment feeding," Dr Berehndt explained.

The productivity improvements have occurred while reducing groundwater recharge, maintaining groundcover above critical levels and maintaining plant densities for some pasture species.

FIGURE 2. Dry matter production in pasture systems for 2006-7 and 2007-08 (t DM/ha)



"In terms of productivity, under-utilised pasture is wasted pasture, but producers need to remember that overgrazed pasture becomes a short-term investment."

Industry engagement

Since establishment of the project during 2004-05, more than 3500 producers have been engaged in *EverGraze* activities associated with the Hamilton site. There are also 2000 producers on the database receiving regular project updates through the *EverGraze* newsletter, a local Supporting Site network, fact sheets and comprehensive website information at www.evergraze.com.au

Key messages for producers include matching pasture species to both the landscape and the growing season to the potential purpose.

"Producers will maximise the benefits from pastures if they plan according to livestock needs," Dr Berehndt explained.

"For example, prime lamb producers looking to fatten lambs over spring summer, could benefit significantly from a triple pasture approach.

EverGraze – More livestock from perennials is a FFI CRC, AWI and MLA research and delivery partnership. ↘

More information

Dr Ralph Behrendt, *EverGraze* Site Leader

T: (03) 5573 0979

E: ralph.behrendt@dpi.vic.gov.au

Tall fescue find a place in perennial pastures

CSU PhD student Maggie Raeside is investigating the potential role of tall fescue in perennial pasture systems as part of the *EverGraze* Proof Site trials at Hamilton, Victoria.

"We are looking at summer-active cultivars of tall fescue as part of our overall search for pasture species that will extend the growing season to fill the summer-autumn feed gap," Maggie said.

"Our recent research into modern tall fescue cultivars has highlighted their efficient conversion of available moisture into high-dry matter production over summer – they use out-of-season rainfall and moisture in the soil to keep going over summer."

Maggie has been carrying out experiments at the Hamilton Proof Site during the past three years and, with two full years of data under her belt, believes she is at the stage where she can draw some firm management conclusions.

"I'm now pulling together some management guidelines for tall fescue and will make these available to producers in the form of key messages," Maggie said.

Maggie's hope is that by providing producers with some easy-to-understand advice about how and when to incorporate tall fescues, they will be encouraged to adopt it more widely into their overall perennial production systems. ↘

More information

Maggie Raeside, DPI Victoria

T: (03) 5573 0752

E: margaret.raeside@dpi.vic.gov.au

