New focus on managing native perennial pastures

ABOVE: Dr Jim Virgona explains the intricacies of native grass identification to a field day participant. (Photo: Simmone Heather)

LEFT: Native grass species such as wallaby grass (Austrodanthonia caespitosa) can provide valuable production and environmental benefits with careful management. (Photo: Meredith MItchell)

By Gill Fry
EverGraze

Finding out how native pastures can be managed to improve farm productivity while helping the environment is the focus of a new *EverGraze*® research site located near Holbrook, New South Wales.

The *EverGraze* Proof Site, 15 kilometres north of Holbrook, is providing producers and advisers with valuable insight into integrating native perennial pastures with introduced perennial pastures, along with high-performance meat and wool production systems, to achieve ambitious profit and natural resource outcomes.

key points

- With careful management native pastures can contribute to productivity while providing a range of environmental benefits including salinity and erosion control and increased groundcover
- A combination of fertiliser and rotational grazing will boost productivity while maintaining native perennials
- Managing grazing to maximise seed bank reserves is critical to native pasture success.

Research agronomist Dr Jim Virgona, Charles Sturt University (CSU), said the research undertaken at Holbrook is investigating management strategies that can be adopted on-farm to improve the contribution of native perennial grasses to pastures.

"A native pasture is any pasture where native grasses are the dominant perennial species," Dr Virgona explained.

"Native grasses are normally the only perennials in these pastures, and are important for reducing salinity, preventing erosion, providing groundcover and increasing stock performance."

While a large proportion of the higher rainfall zone is nominally native pasture, much of the area is dominated by annual grasses and weeds, with only a small proportion of perennials.

"The challenge is that native pastures in northern Victoria and southern NSW are usually dominated by annual species," Dr Virgona said.

"They occupy a considerable proportion of the landscape, but are generally of low productivity, used in wool production, and provide low returns per hectare.

"Productivity of native pastures can be increased by using fertiliser, but this nearly always reduces the proportion of the native perennial grasses."

However, Dr Virgona suggested a combination of fertiliser inputs and rotational grazing should increase productivity while maintaining native perennials.

Researchers selected the Holbrook site because it had native pastures on the non-arable upslope and improved (phalaris and cocksfoot based) pastures on the lower arable country.

"This site will examine the gains to be made from implementing integrated grazing across improved and native pastures," Dr Virgona said.

The improved pasture base is phalaris under rotational grazing. The native pastures (based on wallaby grass, spear grass, weeping grass and red grass) are tactically grazed depending on the degree of integration with the improved pasture.

Experiments will investigate the effects of grazing management and fertiliser inputs on pasture and animal productivity and natural resource management outcomes such as groundcover, perenniality and groundwater recharge.

Positive results down south

Also evaluating the potential of native pastures is the Albury/Wodonga *EverGraze* Proof Site at Chiltern, south of Holbrook. In line with current best management practices, this Proof Site is measuring the economic benefits of native pasture treatments to a prime lamb enterprise.

The conception rates of CentrePlus Merino ewes grazing native pastures at the Chiltern experiment were surprisingly

Meredith Mitchell examines the native perennials at the Chiltern EverGraze *Proof Site. (Photo: Gill Fry)*

good given low rainfall during summer (45 millimetres), and low pasture availability (580 kg/ha) leading up to joining.

The overall conception rate is 141 per cent, similar to that achieved during 2008. The average condition score of ewes at joining was 2.6 and current condition score is 2.7.

This site has no sown pastures and the ewes were not supplementary fed until joining started, highlighting it is possible to achieve high conception rates on native pastures with high fecundity ewes.

Across the mob, 83% of ewes were pregnant within the first three weeks compared with only 61% for 2008. Of 134 ewes, scanning showed 55% with single lambs, 41% with twin lambs and 2% triplets.

The ewes are currently being fed 0.5kg/hd/day of pellets with a metabolisable energy (ME) of 12.6 MJ/kg to ensure energy requirements are met as there is limited pasture available on the plots (average feed on offer is 899 kg DM/ha).

The ewes will be split into two management groups (singles and multiples) for better management of feed requirements.

Boosting the natives

Meredith Mitchell, Proof Site Leader for the Albury/Wodonga Proof Site has three rules for native pasture seeding recruitment:

- Grazing management to increase seed in the seed bank
- Open spaces and soil moisture for the seeds to germinate
- Reduced competition from resident plants to ensure seedlings persist.

"Increased grazing pressure during spring reduces competition from annuals such as barley grass and silver grass," Meredith said.

"This encourages early growth of summer -active perennials and reduces competition from germinating annuals during autumn.

"Increased sub-clover is an added bonus of this strategy."

LEFT: Federal Agriculture Minister Tony Burke (left) talks with EverGraze National Advisory Committee Chair, Chris Mirams at Hamilton.

Profitable perennials — a users guide

During late May, the Federal Minister for Agriculture Hon. Tony Burke received a first-hand briefing on the *EverGraze* project by visiting the project's Hamilton Proof Site and touring an on-farm supporting site in the company of *EverGraze's* National Advisory Committee and the *EverGraze* Regional Group.

At the Proof Site, the Minister heard about the research underway at Hamilton from Ralph Behrendt who emphasised that productivity gains experienced at the site were superior to district best practice (see story pages 12-13).

The Minister made the most of his opportunity to talk with farmers during the trip and conducted interviews with some of them for his website. He gained a sense of the power of good science-farmer collaboration supported by the passion of farmers in the region for *EverGraze*.

Perennial prospects

The highlight for the CRC was the launching of the *Prospects for perennials* publication where Minister Burke acknowledged the important role the FFI CRC played as a credible joint venture and spoke of the importance of research and development and technological change to improve productivity and adaptation to climatic variability. He also identified the need for greater production efficiency to reduce greenhouse gases.

The attention that Hon. Tony Burke showed during the visit will go a long way in making others aware of the valuable research being done by *EverGraze* and the FFI CRC.

More information

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Native grasses set seed after rainfall during late spring and early summer. Removing stock from the pastures when seed set occurs is critical to increase the seed bank.

Meredith advises producers to graze native pastures during mid-summer, when the seeds mature, to create spaces for germination during autumn.

"If germination and follow-up rainfall occurs, producers can reduce or defer grazing for about six weeks to allow new seedlings to establish," she said.

Many producers want to know how to increase livestock production while maintaining native pasture content.

"We know that fertiliser alone will increase pasture production and feed quality, particularly through increased growth of clover," Meredith said.

"However, when set stocked, fertilised native grasses are out-competed by annuals such as barley grass and capeweed."

EverGraze experiments at Albury/Wodonga and Orange are testing fertiliser application combined with rotational grazing to increase production and maintain native grasses. Early results from the Orange, NSW Proof Site show that dry matter production on a weeping grass, wallaby grass and red grass native pasture was substantially increased using rotational grazing.

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

For more information about *EverGraze* visit: www.evergraze.com.au.

More information

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> The benefits of native pastures are being enjoyed by producers across Australia *(see Matt Carter's northern New South Wales case study in the FFI CRC's* Future Farm *magazine, Issue 3)* <