

EverGraze: grazing systems for native pastures in Central-West New South Wales

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Abstract. *New research into grazing systems for native pastures has recently begun at Orange, New South Wales as part of the EverGraze national research program. The research aims to improve the management of perennial pastures, and will examine the roles of grazing system, soil nutrition, the position in the landscape and livestock enterprise in enhancing profit and natural resource management outcomes.*

Introduction

Native pastures occupy a greater area than introduced pastures on the Central Tablelands of New South Wales (NSW) (Garden *et al.* 2000), but their management is often given a lower priority because they are frequently located on less productive and highly variable parts of the landscape. They are generally fenced into large paddocks that are set-stocked (or have short rest periods) causing degradation in over-utilised patches. Changes are needed to management to improve the profitability and sustainability of these areas.

High-intensity short-duration ('cell') grazing systems have been widely promoted as a means of simultaneously improving profit, natural resource management (NRM) outcomes and lifestyle. However, there is little objective data available to support such claims for native pastures. Previous research has focussed on pasture composition (Dowling *et al.* 2005) rather than the entire system, or lower intensity rotations (Lodge *et al.* 2003; Michalk *et al.* 2003). Nevertheless, these systems are increasingly being adopted by producers due to anecdotal observations of their success.

EverGraze (www.evergraze.com.au) is a nationwide research program seeking to increase the profitability of livestock enterprises by 50 per cent while simultaneously

enhancing NRM outcomes. Research at the Orange EverGraze 'Proof Site' is investigating whether high-intensity short-duration grazing of native pastures can improve perenniality, lift animal production, increase farm profitability, enhance soil structure, reduce erosion or improve biodiversity.

Methods

Two experiments at different locations will focus on grazing systems and some additional issues.

Experiment 1: Livestock production and landscape variability

The site is located at Panuara, 25 km south-west of Orange. There are three grazing management treatments: continuous grazing (one paddock), medium intensity (four paddock rotation) and high intensity (20 paddock rotation). Each treatment will cover an area of 3.5 ha and is replicated three times. Measurements of pasture production and composition, soil fertility, soil water-use and biodiversity will be located at set points throughout the landscape (eg. ridge tops, mid- and lower slopes) to account for the marked spatial heterogeneity of the site. The livestock production system examined will be a prime lamb enterprise based on merino ewes joined to elite terminal sires.

Experiment 2: Fertiliser and grazing system

This site is located at Belgravia, 25 km north of Orange where three levels of grazing intensity: low (continuously grazed at 5 dry sheep equivalents (DSE)/ha), medium (grazed 25 per cent of the time at 20 DSE/ha stocking) and high (grazed 5 per cent of the time at 100 DSE/ha) are studied. There will be only partial implementation of a multi-paddock high and medium intensity rotations. Each plot is 1 ha in size and is replicated three times. Superphosphate fertiliser is applied at 250 kg/ha to 50 per cent of each grazing treatment in a split-plot design. A small plot experiment will compare differences between the standard fertiliser treatment used in the larger experiment, and either new and novel fertiliser products or different rates of application.

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