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Ninth edition

PROGRAZE™

Profitable, sustainable grazing

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FOREWORD

PROGRAZE was initiated by the former NSW Agriculture and was a collaborative project between NSW Agriculture and Meat and Livestock Australia Limited as part of the Sustainable Grazing Systems Key Program.

PROGRAZE is based on a model for working with producer groups developed by Bob Marchant and Michael Duncan, former departmental officers at Armidale, NSW.

PROGRAZE aims to develop beef cattle and sheep producers', and those who service these industries, skills in pasture and animal assessment and assist them identify ways to use these skills to improve their grazing management decisions.

PROGRAZE deals specifically with the interaction of pasture and livestock and the impact each can have on the other. It deals with the management issues associated with this interaction. Due to the importance of environmental sustainability PROGRAZE also emphasises the role pastures and pasture management have in addressing these problems.

PROGRAZE does not formally address issues such as pasture establishment, pasture nutrition, livestock genetics, marketing, or drought feeding. Although topics such as these are discussed through PROGRAZE, it is up to the group to raise issues relevant to them.

It is often asked why economics do not receive greater prominence in PROGRAZE. It is mainly because the course aims to increase participant's skills and knowledge of pasture and grazing management to place them in a position to make better decisions. That is not to say we do not believe an economic evaluation, particularly for the more important decisions, should not occur and maybe some training is required to undertake this process effectively.

Also, PROGRAZE does not recommend a recipe for grazing management; in fact it encourages participants to be flexible in their management based on prevailing circumstances. The course covers a broad range of skills and technology which individual participants will implement in widely varying ways depending on their priorities, farm and prevailing conditions.

In these circumstances, it is difficult to undertake economic assessments that are going to be meaningful for the group. However, those who have completed PROGRAZE do recognise its importance in a financial sense to their farms, with about 90% indicating the course had resulted in increased profits.

Alan Bell, former Technical Specialist (Grazing Systems) was responsible for compiling the first six editions of this manual, as well as managing the project across NSW from 1993 to 2005. His work is acknowledged by all staff.

Phil Graham, Technical Specialist (Grazing Systems), Yass compiled the 7, 8th and 9th editions with support from staff in NSW DPI, especially:

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CONTENTS

GLOSSARY

Botanical composition	Mixture of plant species in a pasture.
Carrying capacity	A measure of a paddock or farm's capacity to carry livestock. Usually measured in DSE's/hectare.
Deferred grazing	Delay grazing a paddock for a strategic purpose such as after germination.
Digestibility	A measure of the proportion of pasture or feed which, once consumed, can be utilised by the animal. Higher digestibility usually means higher livestock production.
Dry matter	Plant material without water (i.e. dried).
DSE	Dry sheep equivalents (see Segment 8).
Fat score	A measure of fat cover on livestock.
Herbage mass	Amount of pasture/fodder crop available to grazing livestock. Measured in kg DM/ha.
Intake	Amount of feed eaten by an animal, measured in kg DM/head/day.
kg DM/ha	Kilograms of dry matter per hectare (includes green and dead pasture or fodder crop).
kg green DM/ha	Kilograms of green dry matter per hectare (includes only the green component of pasture or fodder crop).
Livestock class	Animals of the same type e.g. aged, dry, pregnant, lactating.
Nutritive value	A measure of the nutrient status (energy, protein, minerals and vitamins) of a feed.
Over stocked	Indicates when the stocking rate exceeds carrying capacity.
Pasture density	The concentration of plants in a pasture, usually measured as plants per square metre.
Pasture utilisation	The amount of pasture consumed by livestock compared with that produced usually on a 12-month basis.
Rotational grazing	Stock are rotated across several paddocks with timeliness of moves based on a fixed time period or regrowth of the pasture.
Rotation length	Period since animals finished grazing a paddock before they re-enter that paddock.
Selective grazing	Preference of grazing stock for particular pasture species and parts of a plant in a pasture mix.
Set stocking	Fixed number of animals graze a paddock for an extended period.
Spray-grazing	Weed control using a low level of herbicide followed by grazing at a high paddock density to eat out the growing point.
Stage of pasture growth	An indication of pasture maturity, e.g. early vegetative, late vegetative, flowering, in head or setting seed.
Stocking density	Number of stock on a paddock or part paddock (strip grazing). Usually described as head/hectare.
Stocking rate	Number of stock on a paddock or farm. Usually described in DSE's/hectare; but also head/hectare particularly when describing stocking rate at the paddock level.
Strip grazing	When parts of paddocks are subdivided (usually with electric fencing) to increase stocking density for reasons which can relate to pasture and/or livestock management.
Time controlled grazing	A modified form of rotational grazing (also called cell grazing).
Under stocked	Indicates when stocking rate is below carrying capacity.

INTRODUCTION

All sectors of Australian agriculture are under increasing pressure to lift efficiency while at the same time maintain or, in many cases, improve the environment and resources employed for production.

The pressure to lift farm efficiency comes from what economists might term the cost/price squeeze or the decreasing terms of trade (a trend faced by primary producers for as long as most can remember). Those directly involved recognise the trend through their farming business not generating the financial returns it once did.

To offset this decline primary producers have improved production efficiency. Unfortunately, this has often been coupled with a rundown in farm resources such as soils, pastures, improvements to fencing, machinery and yards. As cost/price pressures are not going to disappear, there is a continuing need to improve production methods for increasingly competitive markets while maintaining or improving the resource base.

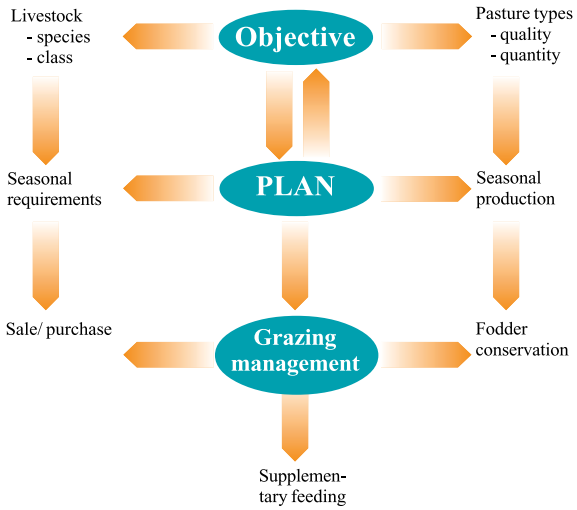
For the livestock producer, the key issues are the efficient conversion of pasture to animal products, which are capable of competing effectively on domestic and international markets. This conversion must originate in a production system capable of maintaining pasture stability and productivity.

To achieve this many variables must be considered in grazing management, with each pathway interlinked (see Figure 1).

The interaction that occurs when livestock graze pasture is complex. Technology exists to help managers more effectively achieve production objectives from livestock on pasture. This technology will allow livestock managers to better control production systems through more effective and sustainable use of pasture. In addition, production and marketing targets for livestock would be more consistently met.

The economic impact of improving grazing management decisions is difficult to assess because the nature of such decisions can vary greatly. From say, more effective decisions relating to paddock selection for sheep or cattle and timing their moves from paddocks to more effectively achieve production or

Figure 1. Pathways of grazing management decision making.



market outcomes; to quite complex control grazing systems which take into account the grazing management requirements of both livestock and pasture, involving feed profiling and fodder budgeting and due to the complexity of the system will probably require a formal planning process. It is not difficult, even at what might be considered the lower levels of more effective decision making, to envisage such decisions will result in improved financial returns. This is particularly so when many of these decisions have no, or little, cost.

PROGRAZE participants were surveyed 10–12 months after completing the course. Eighty nine percent of those replying to the survey indicated their participation led to increased returns from their farms and 91% believed their participation had led or would lead to more stable pastures.

PROGRAZE addresses the issue of pasture and livestock interaction to provide a basis for more efficient and effective grazing systems. It will involve the development of skills namely in pasture assessment, livestock assessment and plant species recognition, and will explore how these skills can be used in daily decision making.