

Surveys of grazing industry end-users in northern New South Wales

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Abstract: *Three groups of potential end-users in the EverGraze northern NSW project (graziers, leading graziers and advisors) were surveyed. Average property size was 1140 ha with 34% of respondent's properties being occupied by unimproved native grass and timbered country. Sixty eight percent of all graziers surveyed had both sheep and cattle; 7% had sheep only. About one-third of grazier respondents produced lambs (mainly from self-replacing Merino flocks) solely from native perennial grass-based pastures that did not receive any fertiliser or legume inputs with little or no supplementation provided. All of the leading graziers and advisors thought that such pastures were suitable only for wool production and store stock. The two least adopted yet widely recommended practices were objectively measuring pasture herbage mass and the use of fodder budgets, although practices such as fat scoring and using soil tests were also often rarely used on-farm. Differences in practices recommended by advisors and their perceived/actual adoption by graziers suggested that extension messages were not impacting as expected. This needs to be taken into account when designing and implementing future extension programs.*

Key words: sheep, cattle, pastures, pasture improvement, natural resource management, management practices

Introduction

Surveys were undertaken in 2008 and 2009 of grazier, leading grazier and advisor groups in northern inland New South Wales (NSW). While these groups were major potential end-users for information from the EverGraze northern NSW project (Lodge *et al.* 2008), little was documented about the regional demographics, pasture and animal production systems, current management practices, levels of animal production and pasture improvement, the use of fertilisers, forages and supplements and producers' attitudes and perceptions towards production, farm profitability and natural resource management (NRM) issues. Some of this information was being collected on a limited number of individual properties as part of an on-farm monitoring process within the EverGraze northern NSW project (Lodge *et al.* 2011), but a broader information base was required to be able to use such knowledge to plan and develop future key messages and extension programs. Where feasible, common questions were directed to the three groups to provide insights into current practices recommended by advisors and their actual and perceived levels of

adoption, and to highlight any potential barriers to the more widespread use of management practices to improve profitability and enhance NRM among graziers in northern NSW.

The survey area was primarily the eastern section of the Namoi Catchment and the south-eastern portion of the Border Rivers-Gwydir Catchment, which was also the main area of focus for the EverGraze Proof Site project in northern NSW (Lodge *et al.* 2008; Lodge *et al.* 2011). A large proportion of this area was previously surveyed in the mid 1980s by Lodge *et al.* (1991), but since that time anecdotal evidence indicated a marked decline in the regional forage base as a result of dry years (e.g. Lodge and McCormick 2010), a substantial increase in cattle numbers, a decline in wool production from sheep, and an increased use of summer-growing native perennial grass-based pastures for fattening and breeding enterprises rather than their traditional use of grazing store stock. A similar survey of sheep producers in the Mallee district of Victoria (Robertson and Wimalassuriya 2004) reported that recommended practices that could increase farm productivity were not being adopted and suggested that this was a nation-wide issue which needed to be addressed. These authors also highlighted a lack of regional benchmark values for pasture and livestock enterprises and

this was also addressed in the current EverGraze northern NSW project (Lodge 2011).

This paper aims to quantify the current level of activity and knowledge, document trends and attitudes in the grazing industries for pasture and livestock production, and to provide an assessment of the perceived importance of a range of environmental issues in northern NSW. It was intended that this information would then be of benefit when designing future key messages and extension programs within the EverGraze project in northern NSW.

Methods

Three separate surveys were developed for graziers, leading graziers and public and private sector advisors consisting of up to 62 questions with commonality among many of the questions. Questions covered not only the physical aspects of the property (areas of different pastures and forages, livestock types and numbers and enterprises), but also attitudes to pastures, forages, supplements and fertiliser use, current pasture/forage use, animal production (both sheep and cattle), and NRM. Numbers of survey respondents were 51 for the general grazier survey, 12 for the leading grazier group (as identified by peers and advisors) and eight for the advisor group.

Results and discussion

Analysis of all responses indicated that:

- Average property size was 1140 ha.
- Average producer age was 53 years (only 25% of respondents expected that one of their children may take over the running of the property).
- On average unimproved native grass and timbered country occupied 34% of respondent's properties.
- Proportions of different pastures and forages were: native pastures oversown with subterranean clover and superphosphate (15%), lucerne (5%), sown pastures (3.2% temperate grasses and 2.1% tropical grasses), grazing cereals (5%) and summer forages (1%).

- 68% of all graziers surveyed had both sheep and cattle; 7% had sheep only.
- 38% of sheep producers had self-replacing Merinos, mostly producing <21 micron wool.
- Average wool cut was 4.7 kg/head for wethers and 4.6 kg/head for ewes.
- 44% of respondents with sheep produced lambs for meat production (22% Merino ewes, 22% crossbred ewes).
- Most respondents with cattle (61%) had breeding cows, producing weaners (23%), yearlings (27%) or steers (32%).

About one-third of grazier respondents produced lambs (mainly from self-replacing Merino flocks) solely from native perennial grass-based pastures that did not receive any fertiliser or legume inputs with little or no supplementation provided. In contrast, all leading graziers and advisors thought that such unimproved native perennial grass-based pastures were suitable only for wool production and store stock. Leading grazier respondents also had higher proportions of lucerne, forage oats and native pastures oversown with subterranean clover than the grazier respondents and they also had up to 20% higher lambing and weaning percentages. A high proportion of grazier respondents (43%) indicated that they intended getting out of sheep production in the next five years, compared with only 16% of leading graziers.

Commonality of questions in the advisor, leading grazier and grazier surveys showed a marked divergence between what was recommended practice, adopted by leading graziers and undertaken by most graziers (Table 1). Soil testing, for example was recommended by all advisors, but used by only 57% of leading graziers and 50% of graziers surveyed, with about half of these only undertaking a soil test every 5-10 years. Similarly, although fat scoring was widely recommended, it had been adopted by only two-thirds of the leading graziers surveyed and 42% of the grazier respondents. Even simple practices such as providing ewes with a higher plane of nutrition at joining ('flushing') had been adopted by only about three-quarters of graziers surveyed (Table 2). Apparent high adoption

of the use of supplements and application of fertilisers was related to the widespread use of salt blocks as a pasture ‘supplement’ and the infrequent application (1 year in 5) of low rates of superphosphate to pastures. Most respondents indicated that they grazed strategically, moving stock based on pasture availability or animal requirements (28%), rotationally grazed or regularly moved stock to rest pastures (24%) or used a combination of set stocking (same mob of animals in the same paddock for most of the year) and strategic grazing (20%).

Table 1. Percentage responses by advisors, leading graziers and graziers to questions about profit motivation and feed quantity/quality limiting animal production.

	Advisors	Leading graziers (%)	Graziers
Motivated by profit	70	55	40
Production limited by feed quantity/quality	77	63	65 (36 ^A)

^A Graziers with sheep only.

The two least adopted yet widely recommended practices were objectively measuring pasture herbage mass (about one-third of all producer respondents) and the use of fodder budgets (<10% of all graziers). This is somewhat surprising given that more than 63% of graziers thought that feed supply or climate variability and drought were the main limitations to farm profit (Table 1). Decisions about stock movements were mostly based on visual assessments of herbage mass and height (45%) or ground cover (28%). Decisions

about when to graze a pasture were made mainly on visual assessments of pasture condition (49%) or quality (27%). Although 42% of the grazier respondents said that they regularly used fat scoring, only 4% indicated that it was a major factor in assessing the condition of their animals; 24% used a visual assessment of fat cover on the ribs, 20% used animal contentment and general appearance and 15% judged animal condition by looking at the condition of the pasture. While 33% of all grazier respondents said that they regularly assessed pasture herbage mass, only 5% indicated that they used it to decide when to graze a pasture. Low proportions of grazier respondents used fodder budgets (2.6%) or calendar-based systems (1.3%) to decide when to graze. These results occurred despite more than 70% of the grazier respondents having attended a ProGraze course and indicated that there was a strong preference for graziers to use experientially learnt visual guides applicable to their individual properties, rather than objective measurements and known regional benchmark values.

Major limitations to increasing farm profit were perceived to be lack of capital (21%), feed supply (23%), droughts (19%) and climate variability (21%). To improve profitability the most popular pasture management practices nominated were to increase legume content (22%), apply additional fertiliser (20%) and sow more perennial grasses (21%). The most popular animal management practices to improve profitability included improving genetics (16%),

Table 2. Percentage of advisors that recommended different management practices and the proportion of leading grazier and grazier respondents that have adopted these practices, together with advisor and leading grazing estimates of the perceived level of adoption.

Management practice	Advisors		Leading graziers		Graziers
	% recommended	Perceived % adoption	Assessed % adoption	Perceived % adoption	Assessed % adoption
Use supplements	100	50–70	85	50–70	79
Apply fertiliser to pastures	100	<30	100	<30	83
Use a soil test	100	–	57	–	51
Use fat scoring	85	<30	66	–	42
Flush ewes at joining	85	<50	88	<10	73
Objectively measure herbage mass	100	<10	33	<10	36
Use fodder budgets	85	<10	10	<10	9

increasing lambing/calving percentages (11%), increasing weaning percent (11%) and changing marketing methods (10%).

Most graziers thought that soil health (24%), water availability (14%), lack of perennial species (14%), soil erosion (13%) and global warming/climate change and biodiversity (both 13%) were the major environmental issues for the region. However, on-farm the major environmental issues were ground cover (26%), a lack of perennial species (15%), shrub and tree invasion (14%), tree cover (13%) and soil erosion (12%). Thirty nine percent of graziers indicated that they would tolerate up to a 5% loss of production to increase biodiversity, while 32% indicated that they would prefer no loss of production. Most grazer respondents (91%) expressed a strong conservation and land stewardship ethic, but many (80%) thought that the cost of looking after the environment should be more equitably shared by the non-rural sector.

Responses by advisors, leading graziers and graziers to questions on profit and the major factors limiting animal production were markedly different (Table 1). For example, while most advisors thought that all graziers were motivated by profit and that feed availability, feed quality and feed supply/demand limited animal production, a lower proportion of graziers thought similarly. Surprisingly, only 36% of sheep producers indicated that feed availability/quality or feed supply/demand limited animal production, with other responses being the high costs of production (11%), low wool prices (11%), labour constraints (14%), increasing producer age (5%) and the higher profitability of alternative livestock types (6%).

Differences in practices recommended by advisors and their perceived or actual adoption by graziers and the marked variation in responses to profit motivation and factors limiting animal production suggested that extension messages were not impacting as expected. This will need to be taken into account when designing and implementing future extension programs. Similarly, the contrasting differences in regional and on-farm environmental issues have implications for how future programs that impact on NRM are packaged.

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