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Producer Research Report

Improved Lambing and Weaning Rates

Lower Murchison Pastoral Bestprac Group

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The project did not achieve its primary objective of improving lambing and weaning rates in the Lower Murchison region, although it was successful in developing a user-friendly monitoring system that has been presented as a Pastoral Profits Guide, to be published by May 2008.

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The project

The Lower Murchison Pastoral Bestprac Group aimed to improve both lambing and weaning rates of the partnering station flocks in the Lower Murchison by effectively aligning stocking rate with seasonal carrying capacity.

An increase in the average lambing rate from 49% to 80% was estimated to generate an additional $17.7M revenue for the region, while a reduction in average mortality rates of weaners from 22% to 10% would translate to direct savings of $35,000 per annum for each sheep station in the region.

Objectives

1. Increase the average lambing rate in the Gascoyne Murchison region from 49% to 80%;
2. Reduce average mortality rates of weaners in the Gascoyne Murchison region from 22% to 10%;
3. Develop a prototype of a user-friendly monitoring system by having two members measuring animal performance against carrying capacity estimates; and
4. Develop a set of photo standards that will assist producers to estimate carrying capacity and calculate appropriate stocking rates.

What was done

Participating stations set their animal production, financial and rangeland condition objectives for each paddock.

Two stations employed a monitoring system to reduce the lag time of direct feedback concerning the effectiveness of their stocking rate decisions.

The monitoring system involved:

1. Ewe live weight records and body condition scores;
2. Lamb live weight gains;
3. Carrying capacity estimates (estimations of available grazing days);
4. Rainfall and production records (marking and weaning percentages); and
5. Rangeland condition sites.

Rangeland monitoring sites already existed in the trial paddocks on one of the stations. A minimum of two rangeland monitoring sites were installed in each trial paddock (about 5000ha) with a maximum of four in individual paddocks.

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Key Points

- Lamb liveweight gains in the semi arid pastoral region during dry times can be restricted to less than 25% of their potential.
- Damaras and goats can maintain performance in limited feed situations – but only when intermediary browse plants are providing the bulk of the diet.
- The rapid reproductive rate of Damaras can be an issue for aligning stocking rate and carrying capacity; a greater level of attention needs to be paid as the grazing pressure in a paddock in these enterprises can be very fluid.
- Meat enterprises in the semi arid pastoral region are likely to be impacted more that wool enterprises during dry times.
- Merinos can tolerate limited feed conditions, but reproductive performance may be impacted more heavily than Damaras or goats, although returns are buoyed by continual wool production.
- Herding instinct of Damaras is strong.

Assessments of feed supply were made at the same time the livestock were mustered and drafted. This assessment was conducted according to the methodology outlined in the *Livestock Productivity* workshop manual (DAFWA). A minimum of two assessments were made.

Participating stations had self-mustering yards and these enabled stocking rate adjustments to be made in response to the information from the monitoring system. These adjustments were guided by the objectives defined.

A *Pastoral Profits Guide* was developed. The guide is a practical tool able to assist producers in the WA southern rangelands through to align stocking rate to carrying capacity in order to achieve their objectives.

In April 2007, a producer forum, *Taking rangeland goat industry to the next level,* was attended by more than 40 people. Preliminary results of the Nalbarra project and related issues of goat production the Southern Rangelands were discussed, stimulating discussion about the opportunity for managed goat enterprises.

In October 2007, a field day attended by 40 people was held to present the results, general conclusions and recommendations of the project.

Project outcomes have also been delivered through a WA Livestock Update Forum presentation and paper in the proceedings; regular project updates in the Pastoral Memo; and an article in the state-wide Countryman Newspaper.

What happened?

Individual business considerations in conjunction with the extreme dry seasons led to the break-down of the membership of the project group early in the trial. Of the five original members, three sold their businesses and the remaining two were sourcing a significant proportion of their income from non-pastoral enterprises. Despite this, the project provided insights into how best to align stocking rate to carrying capacity – particularly during dry seasons.

Below average seasonal conditions meant that defensive tactics were employed to reduce the impact of the diminishing feed supply. Although stocking rates were reduced, the condition of the livestock and feed supply deteriorated at a much faster rate, which impacted the ability of management to reach their objectives.

Major adjustments of stock numbers were made throughout the course of the project and there were severe time constraints on the participating pastoralists. Results reporting on individual stations is therefore quite fragmented.

Dwindling feed supplies had a chronic effect on ewe flock performance at Meka Station between December 2006 and September 2007. In December 2006, Damara ewes (ages 2-4 years old) were body condition scored (BCS) (average 2.5) and their lactation status (wet or dry) noted (lambing occurs all year round with a peak period between June to September). Lambs were weighed (average 15kg), sexed and tagged.

Feed estimates in the Meka Station paddocks indicated that there would only be sufficient feed for 66 days in one paddock and 38 days in the other before animal performance would be compromised and/or range condition would be adversely impacted. Minor rainfall events over the summer period provided additional forage which extended the date for a further 20 days and 14 days, however the average BCS of the ewes

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had slipped marginally. By May 2007, there was no palatable, nutritious feed remaining. A reduction in stock numbers occurred at this point. In September, the remaining ewes were reassessed as healthy, although they had lost substantial condition and a significant proportion were unlikely to survive the summer of 2008 as no effective rain was recorded. A proportion of these ewes and their lambs were sold and those remaining were transported to another paddock.

The average daily weight gains from February to September 2007 (Male: 41.03g and Female: 25.5g) highlight a challenge for meat production system in the pastoral zone during dry times. Assuming an average birth weight of 5kg, and using these daily weight gains, it could take over 18 months for a ram lamb to reach a sale weight of 35kg. Presently the station weans at 30kg and feedlots to put on the final 5kg. Ewe lambs may take at least double this time, which would impact the age that maiden ewes are capable of joining. This could exacerbate the tight stocking rate situation, as non-productive sheep need to be carried for extended periods. Meat producers in the WA southern rangelands therefore need to plan and budget.

Although clear objectives were developed at the start of the project, the reality of rangeland conditions means that decisions that which may result in a financial loss in the short-term are often required. The following conditions severely impacted the ability of participating producers to achieve their objectives:

1. Low domestic demand for fat-tail ewes combined with capacity constraints at the abattoirs (significant destocking occurred across WA in autumn and winter) resulted in substantial discounts ($15-20/hd) and made the sale of ewes difficult;
2. The strong Australian dollar reduced the export demand for ram lambs, and tempted management to retain them until prices improved;
3. Year-round matings caused difficulty selling even lines of ewes – many either had young lambs at foot or were heavily pregnant causing transport issues;
4. Agistment options were scarce and expensive; and
5. Purchasing additional supplementary feed coupled with transport costs was too expensive to be economically viable (Meka station does regularly purchase pellets and hay to finalise sale stock condition and were fortunate to have reasonable reserves).

At Nalbarra Station in November 2006, a total of 217 Damara ewes were weighed and body condition scored, their progeny tagged and weighed, and the flock put into a 4500ha paddock. It was estimated there were 48 grazing days before the feed would become limiting and the grazing pressure would have a negative impact on rangeland condition and/or sustain livestock performance.

In February 2007, the flock was moved into a new paddock, however the body condition of the ewes had already declined due to the available feed being of low nutritional value. Livestock condition continued to deteriorate until May, when the paddock was completely destocked and the majority of the ewes were either sold or moved to other areas of the station.

The average daily live weight gains of the Nalbarra lambs (Male: 82.8g and Female: 60.9g) were sub-optimal as a result of poor feed conditions. The Damara ewes appeared to be drawing on their fat-tail reserves in order to maintain milk production. The technique used to assess feed

estimates was still being refined, and although selective grazing could have occurred on preferred sites it was not utilised, which substantially reduced the estimated grazing days.

Nalbarra was also faced with having to offload large numbers of sheep across the station as seasonal conditions deteriorated.

A 16,300ha paddock on Nalbarra, with its perimeter fence of prefabricated netting is used specifically to manage goats. The herd of goats in the paddock are predominantly rangeland goats with Boer goat infusion. Boer billies were purchased in the mid-1990s and since then selection has taken place with an emphasis towards Boer traits. The trial sought to collect some data on the performance of these goats in relation to the feed conditions. Unfortunately, only one data collection was possible because a lack of feed resulted in the complete destocking of the paddock.

In February 2007, 50 does and 25 kids – out of a herd of 200 – were weighed, tagged and scored. Of the does, 46% were dry with an average weight of 36.2kg (BCS 2.5) and 54% were wet with an average weight of 49.5kg (BCS 2.3). The male and female kids weighed 13.6kg and 17.8kg, respectively. Continuous mating occurs in the paddock so the kids were mixed aged classes; which possibly explains why the average female weight was heavier than the male weight. In May 2007, when these goats were re-inspected during the full muster, their condition had deteriorated and the feed was limited to only intermediary browse species. The majority of the goats were subsequently sold.

Management of this goat paddock has been sporadic. Only large billies (>50kg) are removed and sold for live export and at other times for slaughter. There is a growing emphasis towards heavier framed goats (particularly for the Malaysian market) and with increasing market demand, the costs related to managing these goats in a much more strategic manner may be justified. Further investigation into the environmental impact and management issues related to goat production in the semi arid pastoral region is continuing to be discussed.

Discussion

The project did not achieve its primary objective of improving lambing and weaning rates in the Lower Murchison region, although it was successful in developing a user-friendly monitoring system that has been presented as a *Pastoral Profits Guide,* to be published by May 2008.

Clear indicators were used to advise in the reduction of stock numbers prior to the severe effects of stock impact observed. This ensured that the distribution, density and diversity of the key pasture plants in the

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landscape were not affected. In some areas stock pressure did result in the over-utilisation of perennial species. It is suggested that these impacts were not terminal, and that provided paddocks can be rested following the break in the dry period, the pasture will recover and new plants will be recruited.

The use of key grass and shrub indicator species and their relative utilisation rates were found to be a great tool for assisting producers to monitor the level of available feed in a paddock. Body condition scoring is also a useful tool for calibrating initial feed estimates and a quick and simple way to monitor flock performance.

The use of landscape photo-standards were not found to be a useful tool in assisting with the estimate of carrying capacity in semi arid shrublands – the use of photo-standards of utilisation of individual shrubs and grasses were found to be a much better alternative.

Traditional management in the region has been to hold onto all stock in the hope of rain. This leaves producers with few options during an extended dry period. The lesson learned from the project is that while selling early may incur a cost, it is preferable to the cost of holding stock too long in the vain hope of rain.

Next steps

Given the buoyant market and growing focus on goat production there is interest in work that explores the specific issues related to these enterprises in more detail. Very little information is available on the role that goats may have in the regeneration of degraded semi arid rangelands and the associated increase in carrying capacity. Further detailed information is required into the grazing strategies, production system and supply chains suitable to achieve regeneration and profitable returns.

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