final report

Project code: **B.PRS.0405 / PIRD.04.Q01**

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Date published: **March 2007**

ISBN: **9781741918700**

PUBLISHED BY
Meat & Livestock Australia Limited
Locked Bag 991
NORTH SYDNEY NSW 2059

Herd Productivity

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.

Contents

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Duration: 2004 – 2006

Project Aims

- To lift herd productivity in the North Queensland Dry Tropics using economically viable and environmentally sustainable management and feeding practices.
- Measure the supplementation costs and performance of cattle on producer group properties.
- Improve weight for age of sale cattle

Background

The typical North Queensland property runs a breeding herd to produce sale cattle for selling into a diverse market place. The more fertile the country the better weight for age animals are at turnoff.

Supplementation with phosphorus over the wet season is widely used across northern Australia's tropics where needed to enhance animal performance. Protein based supplements are commonly used during the dry season.

The main profit drivers of the northern breeding herd in order of importance is the branding rate, death rate and growth rate of sale cattle. Good herd and nutritional management is required if all profit drivers are to be addressed. To maintain a good branding rate and maximise weaner weights, most calves must be born before Christmas, which means that cows will often be calving during the October – December period when pasture conditions are extremely dry, and standard dry season protein supplements will not prevent serious weight loss for the cow and poor performance for the new calf.

Over the last 10 years high energy molasses supplements have become more popular first as a weaner feed and now for breeders during the dry season, especially when calving starts during October - December. This PIRD project aims to record the cost benefit of feeding molasses mixtures to specific groups of cattle and the impact on herd performance and profitability.

Main Outcomes

- Molasses based energy-protein mixtures will improve breeder performance and weaner live weight gain during the dry season.
- Good management should be used to feed these high cost supplements to specific groups of cattle to maximise economic returns.
- Cattle being fed these high energy-protein mixtures will consume more grass per day so stocking rates must be adjusted to available feed.
- Poor supply of paddock feed will dramatically lift molasses mixture feed intake levels and costs.
- Property needs good infructure and station service roads to enable molasses and other feed inputs to be mixed and distributed cost effectively.
- Adequate trough space is an important issue especially with young cattle.

Feeding Results

Springfield Station

Molasses mixtures were first fed to the herd in the 2002 dry season. It is usual to begin feeding the mixtures in August and continue until the break of the season in November-December.

Mixtures used

Weaners under 150kg – M3U

Molasses
3% Urea
9% Copra meal
1% Salt
1% Kynofos 21
0.05% Rumensin 100

Breeders and weaners over 150kg – M8U

Molasses
8% Urea
1% Kynofos 21
0.05% Rumensin 100

Intake Levels

Cows	1.5kg/day	M8U
Weaners over 150kg	2.5kg/day	M8U
Weaners under 150kg	2 kg/day	M3U

Performance:

	2003	2004
Branding rate for herd	62%	70%
Branding rate for 1st calf heifers	44%	60%

Weaner LWG/day	Dry season	0.14kg
Weaner LWG/day	Wet season	0.6kg

Herd Performance

	Previous	With M8U feeding
Cattle numbers	8746	8795
Branding rate	62%	70%
Death rate	6%	3%
Female sales % total sales	42%	47%
Female sale price	$460	$471
Steer sale price	$696	$698
Gross margin/adult equivalent	$89	$117

In large northern herds where it's hard to keep tabs on cattle deaths, a good benchmark is to calculate the female sales as a percentage of total sales. As the table below indicates if this figure falls below 40% then the death rate is getting too high.

Female Sales %	Death Rate
48%	2-4%
44%	4-7%
38%	8-10%
32%	10-12%

An important message that is coming through on Springfield and other properties feeding molasses mixtures, is that cattle performance is being lifted but animals are eating more grass per day. So that paddocks that safely carried 500 cows and calves, is now being eaten out as animals are eating more forage per day and stock numbers must be matched to available grass

The Springfield management team is satisfied with the molasses feeding programme so far, as branding rates and weight for age of sale cattle have continued to improve despite the run of poor seasons. They have constructed a large molasses storage facility which will improve feeding efficiency into the future.

Meadowbank Station

Large areas of Leucaena have been established through native pasture on this property. Sale cattle grazing Leucaena have double the annual live weight gain plus heavier stocking rates.

	Native Pasture	Native Pasture plus Leucaena at 10m rows
Stocking rate per adult equivalent	1-5/ha	1-3/ha
Annual LWG	100-120kg	240-280kg

This pasture system showed great promise in this district but with the new tree clearing restrictions across Queensland no new areas will be established because the native trees must be removed for the Leucaena to establish successfully.

Molasses mixtures are used on this property every year for young weaners, but the owner was interested in maximising wet season live weight gain with his Leucaena pasture system. The steers averaged 378kg in September and all received a compudose 200 day. Both groups were on Leucaena-native pasture and the feeding went from October to March.

	LWG/day
Plus molasses mix	1.1kg
No supplement	0.93kg

The extra weight gain, 0.17kg/day, only just paid for the extra supplement cost – 22cents/head/day.

Rocky Springs

This station uses molasses mixtures for all weaners every year and for breeders who calve late in the wet season. The calves are usually under 60kg when the last muster is done in June. These cows and calves are drafted off into a separate paddock and fed molasses and 12% Urea (M12U) until December. The cow calf unit eats approximately 2.4kg of mix per day. In December the calf is weaned and the cow goes back into calf over the following wet season and has the next calf at the right time of the year.

Glen Harding

Some interesting figures from a mob of weaners which were weighed at branding and averaged 105kg. They stayed on the cow for another 180 days gaining 0.69kg per day and were 229kg average weight at weaning. The weaners were fed good hay and M3U mixture in the yards and lost an average of 1.38kg per day for 10 days. Weaners were then put into a good pasture and fed ad lib M4U and when they were weighed 49 days later they were back up to 266kg a 1.04kg per day LWG.

Yammanie

Sale cattle were grazed in a good paddock and fed a brew of Molasses + 8% Urea + 1% Kynofos all year. This mixture in 2004 cost $205/t

	LWG/day	Feed cost/head/day
November 2003 – April 2004	0.62kg	$0.13
May 2004 – July 2004	0.69kg	$0.14
August 2004 – September 2004	0.33kg	$0.18
October 2004 – November 2004	0.24kg	$0.20

Fat cattle were sold in November 2004 when finished cattle are in short supply and prices usually at their best.

Blancourt

The Manager had been feeding molasses-urea mixtures to his weaners for many years and averaging approximately 0.25kg/day live weight gain. The weaners were fed over the usual northern dry season of June to December.

For this last season sorghum silage has been home grown for feeding to weaners and sale cattle. The feed mixture has been whole cotton seed, molasses and silage and animal performance is over 1kg /day weight gain. This extra weight gain has allowed this owner to sell better weight for age cattle and access new marketing outlets, and he plans to continue his silage feeding programme.

Forest Home

This property has also grown sorghum silage at home for feeding to young cattle. The ration was also based on silage and whole cotton seed, costing approximately $190/t (dry matter basis).

Steer Weight	Ration daily intake D.M.	Cost feed head/day	LWG/day	Cost/kg gain
200kg	4.4kg	$0.836	0.8kg	$1.04
400kg	8.8kg	$1.672	1.1kg	$1.52

As the figures above show, the lighter animal uses the feed more efficiently and has a cheaper cost per kg gain, but final selling price per kg will determine the profitability of the exercise.