



final report

Project code: MBFP.025
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Producers
Date published: January 2009
ISBN: 9781741917390

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

Demonstration of Rotational Grazing to Increase Production

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

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1.0 Executive Summary

1.1 Background

The Running Creek Beef Producer group (RCBP) consist of 5 farmers. The group members each have unique farming enterprises and varying expectations of rotational grazing benefits. Interest was generated when some funding was made available by MLA and RCBP decided to apply for \$15,000 worth of PIRD funding from MLA to trial rotational grazing on their properties.

In June 2007 RCBP applied for a 12 month extension, due to prolonged drought conditions not allowing any worthwhile measurements or observations to be made. No response was received from MLA until September 2008, when our request for an extension was granted. We decided that no further benefit would be gained by continuing for another 12 months so the decision was made to finalise the project. One of our members was diagnosed with a terminal illness shortly after the start of the project, and died before the completion of the project. Consequently there is no data from this property.

The properties are all in the one valley of Running Creek, located near the township of Rathdowney, which is 1.5 hours south of Brisbane and 1.5 hours inland from the Gold Coast. It has an average rainfall of 900mm, but the average in the top end has been as high as 1200 mm. The properties consist of forest country with large areas of floodplain in the lower section, and scrub country and smaller floodplains in the upper reaches.

1.2 Objectives

The group intended to demonstrate the benefits of rotational grazing by:

- improving weight gains and profitability by improving pasture density and quality
- better control and manage less desirable weed species
- increase stocking rate (dse/ha)

1.3 Methodology

We travelled as a group to Gympie (30th November 2004) to visit a property where rotational grazing had been practiced for many years. As a result of that, we decided our best course of action was to get some professional advice before we began so we enlisted the help of John McIvor from CSIRO, who spoke at the Gympie field day, and Mein Niemeyer from Beaudesert Shire Council who was experienced in rotational grazing overseas.

We held a planning meeting on 17th December 2004, and visited each others properties on 27th January 2005. During that visit we looked at each participants proposed project and sought feedback from the other participants. Each member was then left to decide what to do and how to achieve it.

We concluded that if possible, small clumps of trees should exist in each proposed paddock for shelter during storms, as the natural instincts of cattle are to “head for the hills” during this time, and we wanted to avoid putting them under unnecessary stress.

We also thought that fencing across larger gullies would be more advantageous than alongside, because one or more paddocks should have some good ground cover in the gully floor to slow water flow and prevent erosion, rather than having the whole gully bare if it had been managed as one paddock and eaten out just prior to damaging rainfall.

1.4 Summary of Project Management

Running Creek Beef Producers feel that PIRD's are a great way for members to demonstrate to themselves, and to other members, the pros and cons of alternative or new ideas, and that MLA is in the best position to disseminate new research information to its members.

Rotational grazing is hard to implement due to time and money constraints but relatively easy to run, although it is labour intensive where short duration rotations are required. It is challenging if you try to do the fencing work yourself, while still under pressure to do the normal farm jobs because fencing is not as urgent as other jobs (e.g. drought feeding stock) and it tends to get put off longer than it should.

If the results of the proposed project are not as favourable as predicted, then be prepared to alter the plan and try new options to optimise the benefits.

It would have been advantageous to have the final report guidelines presented at the start of the project so that our planning and measurements for a final report would have been easier.

The project could have been done better with improved communication from both sides. The group lost its technical contact at MLA very early in the project, and had almost no contact with MLA throughout the project which resulted in being lost for over 12 months. The group should have persisted with attempts to keep in contact with MLA after our letter for an extension was not responded to.

Below is a listing of the main facts from our project.

- Number of troughs installed: 7
- Amount of pipe installed: 2.25 km
- Amount of fences installed: 4.5 km
- Number of tanks installed: 4
- Labour hours: 112 hours of in kind labour valued at \$20/ hr = \$2240
- Total cash spent on infrastructure: \$25,641.62 + GST

1.5 Achievements

Below are some findings that RCBP will all use to improve our enterprises and the way that we rotationally graze our properties.

- Fencing across gullies enables better environmental outcomes as the whole gully if fenced separately will be barer after grazing.
- Clumps of trees in each paddock will be beneficial for animal welfare so that the natural instincts of cattle to protect themselves from inclement weather aren't obstructed.
- Grazing pressure in a paddock with two distinct land types was uneven and dividing the paddock at the change in conditions could help to alleviate this.
- Water infrastructure alone is not sufficient to change cattle grazing patterns and therefore does not bring about the full benefits of rotational grazing.
- Those who used contractors to construct fences were able to rotationally graze earlier than those who didn't. This is due to the fencing work being put off as less important and other more pressing jobs taking priority, especially in times of drought.
- Members used electric fencing when power was available, with variations ranging from 1-3 wires. If no power was available 4 barbed wires were preferred.

- Splitting a paddock in half is an easy way to get started.
- Rotational grazing can be used with cows/calves however there can be some mismothering issues.

1.6 Challenges

- Much of the trial was conducted in quite severe drought conditions.
- Availability of good quality maps and aerial photos whilst planning is especially important, so as some planning can be done, as the exercise does cost a lot in terms of time and money.
- Limited availability of fencing contractors due to volume of work in hand.

1.7 Key Benefits

- Rotational grazing has improved the control of Giant Rats Tail grass on one member's property. This grass has been established for 30 years, and various forms of control been tried for that time. Cattle are eating the GRT and helping to prevent it from seeding, and by not flogging the preferable species in a set stocking regime, they are able to compete better with the weed species. As the grass is not seeding as prolifically, cattle aren't transferring it to new paddocks via dung thus keeping larger portions of the property clean. Additional benefits have been achieved by kikuyu spreading over cattle tracks, resulting in increased ground cover making establishment of weeds less likely.
- Members on average have reported an increase in stocking rate, which in turns leads to an increase in profitability.
- One member who had planted improved pastures, and thought they did not establish due to drought was surprised to find them growing after the paddock had been included in the rotational grazing trial.
- Stocking rates were increased.
- Conception rates were better than set stocked systems.
- Suited on either dryland or irrigation areas.
- Cattle quieter and easier to handle.
- Due to regular movement of cattle, there is less pressure on the fencing and greater observation results in higher maintenance of fences.
- Most members preferred electric fencing where power was available.

1.8 Sharing Our Findings

Presentations have been made about the progress of the trial at Landcare and Integrated Catchment Management Group meetings.

The final report will be distributed to MLA, each of the 5 members, Beaudesert Landcare Group, Logan/Albert Rivers Catchment Association, Scenic Rim Regional Council and SEQ Catchments.

No field days open to the general public were held. We attended one put on in Gympie in November 2004 to aid in our planning, and we visited each others properties in January 2005. I held personal visits on a couple of local properties to discuss rotational grazing. A number of members have gone on to complete grazing land management and rotational grazing courses.

2.0 Leon Blank

2.1 Location

Address: 2177 Running Creek Rd, Rathdowney 4287

Total Property size: 530 ha

2.2 Background

A brief description of your farm and stock: The property is situated at the top end of Running Ck at the NSW/QLD border. It is used for breeding and fattening of Simmental, Brahman and Angus x cattle which are all EU accredited. There is a small area of irrigation flats, but it is mainly gentle to steep slopes with kikuyu the main grass species.

What did you think you would do prior to start of project: To take photos and plan the area for rotational grazing with fencing and watering points.

What did you decide to do after on farm discussions: To install the fences and water points to start the project.

2.3 Objectives

How do you manage your property: The property is EU accredited and used for breeding and fattening with the lease property used for growing enterprise. The home property is 530ha of which 40 ha is irrigated and the balance subdivided into 20 cells. The cells allow us better utilisation of pastures which leads to improved weight for age in the cattle.

2.4 Observations

Positive: Through improved pasture utilization derived from additional subdivision has given 10-20% extra stocking rate. The labour inputs for mustering and checking watering points are reduced. The livestock are observed regularly and helps improve animal husbandry. The rest period helps to break the cycle for internal parasites and allows weed poison withholding periods to be observed.

Negative: Increases mismothering at calving.

Do you have any plans for future infrastructure: With further planning for more cells and watering points I hope to split some larger cells into smaller paddocks, and separate the land types in another where the cattle are overgrazing the preferred species.

Will you continue to rotational graze: Yes

Would you do this again with the experience you now have? Yes

What type of fencing did you use: Where power is available, 2 wire electric, otherwise 4 barbed wires.

What do you most like about rotational grazing: improved pasture utilization, reduced labour inputs, increased stocking rate, and benefits of parasite control.

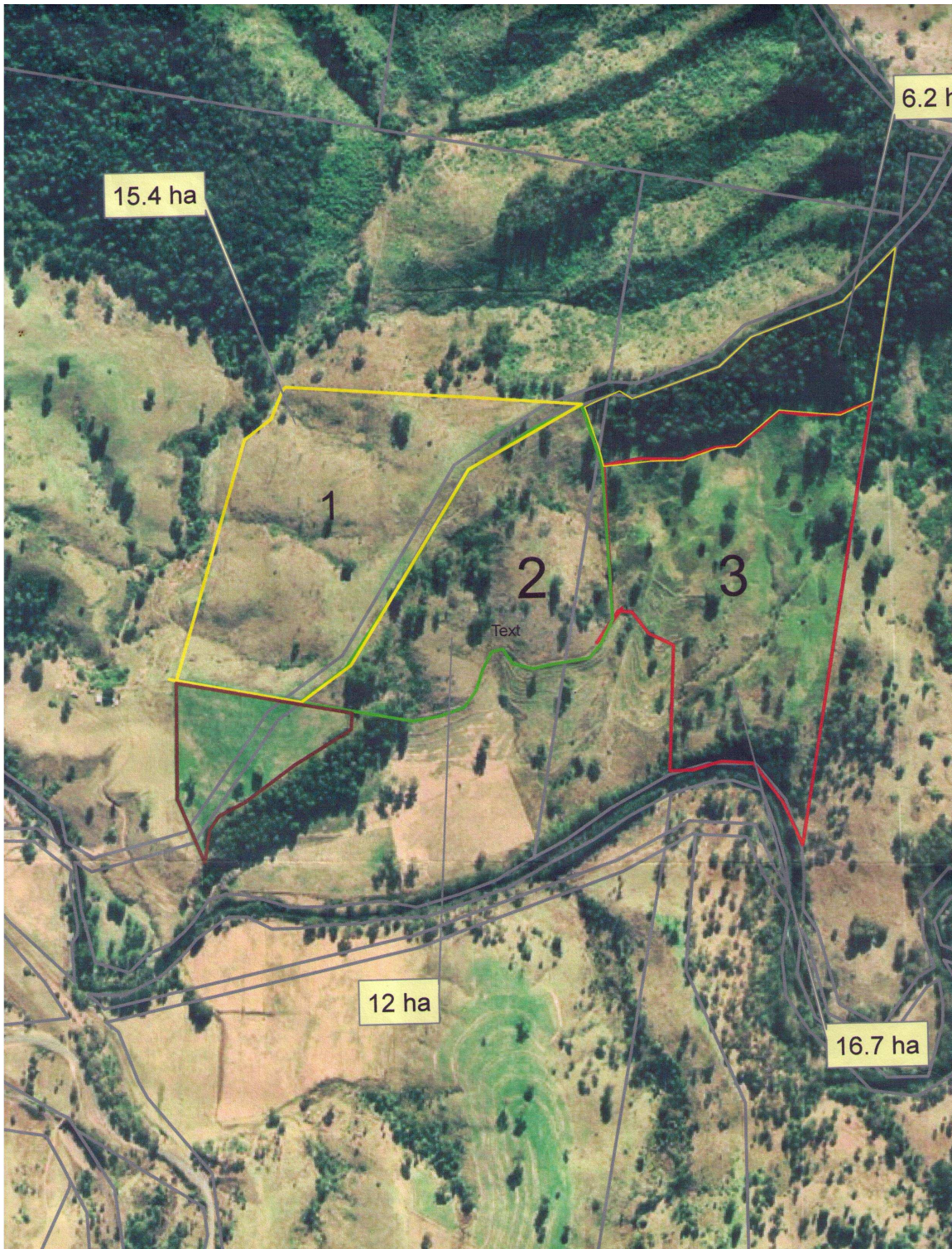
What do you like least about rotational grazing: more time spent in monitoring pasture, extra time for fencing maintenance and it increase mismothering of calves during calving periods.

2.5 Budget

All amounts exclude GST.

Budget item	Quantity	Cash cost	In kind	Total Project Cost
Fencing:				
Wire	5	327.00		327.00
Posts	116		1160.00	1160.00
Labour		1600.00	320.00	1920.00
Stays	4	72.00		72.00
Round posts	7		140.00	140.00
Gates 12'	3	261.00		261.00
Water:				
Pipe 1.25"	150 m	107.50		107.50
Troughs		300.00		300.00
Tanks				
Fittings		34.12		34.12
Labour		320.00	160.00	480.00
Other				
Mustering costs	6@ \$20		120.00	120.00
Monitoring costs	6@ \$20		120.00	120.00
Photos /emails etc				
	Totals:	3021.62	2020.00	5041.62

2.6 Progress Photos



Aerial photo showing proposed cells. The land is quite steep in parts.



Land condition prior to project commencement



Land condition after project completion



New dividing fence running up spur dividing cells 1 and 2



Paddock condition after project completion

3.0 Corine & Matthew Arkinstall

3.1 Location

Address: 479 Running Creek Rd, Rathdowney 4287

Total Property size: 165 ha

3.2 Background

A brief description of your farm and stock: Approximately 80 stud Blonde d'Aquitaine cows and crossbreeds with balance mixed, mainly Brahman x. 30ha of irrigation with a 50ML recently constructed off stream storage. Cut hay from paddocks to store for winter feeding.

What did you think you would do prior to start of project: Fence house paddock of approx 70 acres into 3 or 4 paddocks.

What did you decide to do after on farm discussions: The group pointed out that I was concentrating on the worst country that I have and it would be more beneficial to look at the better country first. They pointed out that the paddock (300 ac) around the existing water trough was overgrazed, and that by putting water further into the back paddock the cattle would graze the paddock more evenly. I put in about 1.3 km of 2" poly pipe (positioning a new trough 800m past the existing one), a mono pump with flooded suction to pump the water and 3x 5000 gal tanks and one new trough to implement those actions.

3.3 Objectives

How do you manage your property: It is set stocked in the back most of the time, with cattle down the front for strip grazing or rotational grazing depending on time of year and feed availability. Front paddocks are normally made into hay in summer.

3.4 Observations

Positive: The cows do use the second trough but not nearly as much as I expected. The tank is filled perhaps once every 2-3 months, compared to the other 2 tanks being filled about once per week. I do have good water infrastructure for future paddock division, in that I can put some troughs into individual paddocks once some fencing is completed.

Negative: It is still overgrazed around the existing trough and under grazed further away. Need fences to restrict stock access to get full benefit. I regret not discontinuing the trial with the water and putting in fences when it became apparent that water alone was not working.

Do you have any plans for future infrastructure: Yes, mainly fencing but a few more troughs in the front would be advantageous.

Will you continue to rotational graze? Yes

Would you do this again with the experience you now have? No, I would do the fencing first as water alone on a property of my size wasn't enough to change cattle behaviour. I would expect on larger properties that water alone can change the grazing pattern in a paddock.

What type of fencing did you use: I prefer 3 wire electric for laneways and single wire for internal fences.



What do you most like about rotational grazing: To be able to see feed available ahead in each paddock would be beneficial in making early decisions either to buy feed or sell cattle earlier. I know that there will also be benefits to soil structure and that it will eventually flow into cattle performance.

What do you like least about rotational grazing: That just putting more watering points in the paddock wasn't enough to bet the benefits of rotational grazing. It is also hard to change cattle behaviour.

3.5 Budget

All amounts exclude GST.

Budget item	Quantity	Cash cost	In kind	Total Project Cost
Fencing:				
Water:				
Pipe 2" poly	13@\$170	2210.00		2210.00
Troughs	1 conc. round	550.00	150.00	700.00
Tanks	3 x 5000 gal	6600.00		6600.00
Fittings		400.00		400.00
Labour			300.00	300.00
Other (list)				
Backhoe		800.00		800.00
Mono pump		500.00		500.00
Monitoring costs			50.00	
Photos /emails etc			50.00	
	Totals:	11060.00	550.00	11610.00

3.6 Progress Photos



Aerial photo showing location of new infrastructure



Installation of water pipe using a backhoe. Existing trough in the distance.



After pipe laying, preparation for tank location



Tank installation and trough in background to the left of tank.

4.0 Warren and Carolyn Drynan

4.1 Location

Address: 218 Camp Creek Rd, Rathdowney 4287

Total Property size: 360 ha

4.2 Background

A brief description of your farm and stock: A forest grazing block, well cleared with irrigation to 2 paddocks of 30ha. We run steers on the best grazing blocks and heifers on the lightest. The irrigated pasture is used for dairy heifers.

What did you think you would do prior to start of project: The problem we were confronted with was we had planted legumes into our lightest country but never got any results (poor seasonal conditions). The only way I could see this improving was to shut up the paddock but I couldn't afford the drop in cattle numbers.

What did you decide to do after on farm discussions: It was suggested to try a small rotational grazing system of 3 paddocks, possibly 4 on a 7 day rotation. This system was commenced but short lived as the property was in serious drought and cattle were being supplementary fed. I then used the same principles on the irrigated pasture area. As we were on very limited water for irrigation, and with stock water in Camp Ck dry, we put in a stock water system from Running Ck through the irrigated pasture area, made up of 5 feeding cells on a 7 day rotation.

4.3 Objectives

How do you manage your property: The property was always used for buying stores and fattening. Now we grow steers for feed, and run a small number of breeders. Our numbers of livestock are fairly static except for summer with the addition of calves. This increase should coincide with our growing season.

4.4 Observations

Positive: When things were very tough there didn't look to be anything gained. But now with some favourable weather there are some positive outcomes. Areas where improved pastures had been planted and hardly seen are actually becoming the main pasture base. These new grasses such as creeping bluegrass and Katambora Rhodes have now completely covered the ground, and rotational grazing aided in their establishment as they would have otherwise been heavily grazed due to dry conditions. The dry stock that used the initial area were put out on aggristment and we bought in 45 cows and calves onto the second area. Through the dry years with minimal supplementation these cows were the only group to hold up their calving %, just on 90%. Other cows groups fell down to as low as 50-60% (they did get poor). This year we actually had the reverse problem, as these cows calved with tight udder and we had scour problems in the calves.

Negative: The high cost of supplying water to the 5 blocks and making alterations to internal fencing. With rotational grazing there is always the problem of constant labour issue.

Do you have any plans for future infrastructure: More and better watering points as some of the first ones were very temporary. Now with a better season in front of us we will look to developing the first area proposed. With the result achieved to date if we can get weather with us there is no reason

why we can't achieve something similar, better ground cover and better quality grasses. We are now looking to the next step of applying chicken litter to boost growth and carrying capacity.

Will you continue to rotational graze: Yes

Would you do this again with the experience you now have? Yes

What type of fencing did you use: Split post and star pickets with barbed wire (not all new)

What do you most like about rotational grazing: The improvement in pasture stand

What do you like least about rotational grazing: cost of setting up the system and ongoing maintenance.

4.5 Budget

All amounts exclude GST.

Budget item	Quantity	Cash cost	In kind	Total Project Cost
Fencing:				
Wire	2km	550.00		550.00
Posts	80	720.00		720.00
Labour			600.00	600.00
Water:				
Pipe	800 m	620.00		620.00
Troughs	5	1500.00		1500.00
Tanks	1	2370.00		2370.00
Labour			300.00	300.00
Other				
	Totals:	5760.00	900.00	6660.00

4.6 Progress Photos



Satellite photo, courtesy of google.com, showing project area



Warren Drynan in a great looking stand of improved pasture ready for the stock to move into



Close up of improved pastures and legumes



Irrigated portion used for the trial

5.0 Jim Salisbury

5.1 Location

Address: 418 Running Creek Rd, Rathdowney 4287

Total Property size: 200 ha

5.2 Background

A brief description of your farm and stock: The property is run as a cattle and fodder producing property, made up of a commercial Braford and Droughtmaster breeding herd, with flood plain cultivation covering approximately 100 acres, which we have been rotational grazing for the past 3 years. The pastures consist of Lucerne and grass, irrigated in dry times as well as 2x 400t silage pits.

What did you think you would do prior to start of project: We planned to develop both the high and low country on the property and have to date completed stage 1 on the low country. We have undertaken steps towards splitting the high country to consist of rotational grazing and silage. We have developed 30 acres for silage and once the pits are full it will be converted back to pasture for rotational grazing. We have begun to develop another 40 acres of pastures to complete stage2 of our rotational grazing plan at which time we will split more high country to complete stage 3.

What did you decide to do after on farm discussions: Basically we have developed the country as per advice received from the on farm discussions, as well as including contour work for water diversion and rectification of uneven ground and washouts.

5.3 Objectives

How do you manage your property: Previously, there were two main paddocks set stocked with cattle. Hay was made from the better cultivation paddocks. Now, Cattle are given a certain amount to graze on and depending on what the pasture consists of a time limit is given and the cattle are removed from the pasture. This cattle move to the next area, and the cleaned area will be sprayed, fertilized and watered as required and left to rejuvenate until it is time to feed off again.

5.4 Observations

Positive: Ease of mustering and movement of cattle around the property. Weed control is easier due to concentration of grazing on an area until it is cleaned up, leaving only weeds which are easily sighted and sprayed. Temperament of the cattle improves due to constant handling.

Negative: More fencing around the property adds to clutter and expense, particularly when flooding occurs. More labour intensive due to movement of fences and cattle.

Do you have any plans for future infrastructure: More permanent water troughs in the high country for the rotational grazing paddocks of stage 2 and 3, and permanent development of an irrigation system for irrigation of pastures in dry times.

Will you continue to rotational graze: Yes

Would you do this again with the experience you now have? Yes

What type of fencing did you use: Star pickets and 2 strands of plain wire electrified.

What do you most like about rotational grazing: Ease of mustering, movement and control/handling of cattle.

What do you like least about rotational grazing: Mess made, labour to clean up and expense incurred after flood damage to fences.

5.5 Budget

All amounts exclude GST.

Budget item	Quantity	Cash cost	In kind	Total Project Cost
Fencing:				
Wire	2 km	480.00		480.00
Posts	80	560.00		560.00
Labour	2 ppl 24 hrs		600.00	600.00
other (list) gates	3	700.00		00.00
Round posts	13	260.00		260.00
Misc		300.00		300.00
Water				
Other				
Mustering costs	1 hr/day	Ongoing	25.00	25.00
Monitoring costs	Combined			
Photos /emails etc				
Contours/drainage		3500.00		3500.00
	Totals:	5800.00	625.00	6425.00

5.6 Progress Photos



Aerial photo showing the three stages and cell locations



Lablab crop planted as part of Stage 2 development



Stage 2, Lablab growing in bottom section, facing south west

Appendix A

Minutes from planning meeting held 17/12/04

Col McIntyre, Leon Blank, Matt Arkinstall, Mein Niemeyer, John McIvor:

- If they are not eating it then it's a weed.
- Try for 8-10 ha paddock sizes.
- water first issue then fences
- cut paddocks to suit water
- Cant fertilise weedy pastures – not economic
- Bigger mobs, move sooner
- Paddocks seed better

Identify Benefits: What we expect to get

- less tracking, cow tracks should cover over
- cattle management – easier to muster
- impact during weather- shelter – need to have trees for rainy weather
- fences run with country, doesn't have to look good on paper
- help spread grass seeds
- weaning weights/conception rate increases
- better weed control

CSIRO/DPI JV – 6 month of planning

- commercial reality, not on research station as farmers don't take notice
- 4 year project (may not be enough)
- 8 commercial properties to compare grazing systems (or 100 smaller ones)
- What info do we want from research
- Value of timbered areas for shelter
- Max 5 days in a cell – eating new shoots
- Min 3 days in a cell- not doing it every day
- Cells across gullies- long grass catches water and soil
- Less weeds, Less chance of erosion
- Manage what you can – don't have to do every paddock
- Just splitting it in half is a start
- Benefit is better utilisation and more even pastures
- Lift in carrying capacity
- Maybe spell 1-2 cells for winter when good season – grazing at optimum stage
- Incentive to take out smaller areas of weeds to make all paddocks look good
- Reduced need for fertilizer as manure more even over paddocks
- Safer option is to make hay than buy more cattle if excess feed
- Stand over feed – legumes to encourage cattle to eat frosted feed.
- Take photos from same point every time
- Measure grass at best time (March /April)
- Weigh cattle at same time of day
- Memory is poor for previous years pastures
- A 5 day rotation with 7 paddocks gives a 30 day rest period.