



finalreport

ADOPTION AND CAPACITY

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Wean More Lambs Demonstration Site

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Abstract

This report looks at the results of the 14 Wean More Lambs demonstration sites that ran from February 2005 through to September 2006. The sites were an initiative of Meat and Livestock Australia whereby money was allocated to fund up to 20 sites nationally with the aim at demonstrating the cost benefits to producers of best practice management principals that would lift productivity and profitability through increased lamb conception, survival and weight gain.

Five sites achieved an easily explainable increase in productivity and profitability from the demonstration through the application of best practice management principals.

Over 650 producers attended field days across all sites and there were over 50 communications with local media outlets.

Executive Summary

Fourteen demonstration sites were established nationally. Twelve sites completed their initial treatment objectives with two sites abandoning their initial objectives due to unfavourable seasonal conditions (Northern Tablelands Merino Wether Trial Group and Kangaroo Island Prime Lamb Producers Group).

Of the 12 sites that completed their initial management objectives, 5 achieved an explainable increase in profitability from implementing their altered management system. These sites were the Tasmanian Prime Lamb Group, the Hawker and Blinman Bestprac Group, the Facey Group, the North Rhine Landcare Group and the Yass Bestfarmers Group.

The first three mentioned groups had one common characteristic in that their control groups had average condition/fat scores either below or close to condition/fat score 2 over the course of the trial, whilst their treatment groups were supplementary fed to remain above condition/fat score 2.5. This is significant because condition/fat score two is a recognised critical threshold below which ewe and lamb survival is compromised significantly. None of the other groups whether profitable or not had ewes at or below condition/fat score two throughout the course of the demonstration.

It is also significant that the size of the return on investment varies from 61% to 100% for these three groups.

Key Message: Supplementary feeding to maintaining ewes above condition score two for short period of the production cycle is cost effective.

The North Rhine group, Southwest Slopes and Fitzgerald Biosphere groups had results consistent with messages from the Lifetime Wool Project that feeding to increase condition before joining is unlikely to be profitable. The Facey group achieved a profit from the same strategy however the ewes were at condition score 1.5 when the trial started. Therefore it may be necessary to qualify the Lifetime Wool Project message with a condition that ewes are starting above condition score 2.

Key Message: Feeding to increase condition score for joining if ewes are already above condition score 2 is unlikely to be profitable.

The Yass site achieved its increase in profit by adjusting lambing date and stocking rate to run an additional 2 ewes per hectare. The increase in profit in this case came not from an increase in the

per head performance of the animals (less kilograms of lamb was weaned per ewe) but rather a per hectare increase as a result of more lambs and more wool.

Key Message: Consideration should be given to lambing date and its influence on stocking rate in order to improve per hectare returns.

The Temora Agricultural Bureau maintained their ewes above fat score 4 for the duration of the trial and whilst an effort was made to keep the treatment group at a higher fat score than the control there was limited success. As a consequence there were no real production differences between these two groups.

Key Message: At greater than condition score 3.5 any further nutritional benefits are likely to be of limited value.

The ASHEEP Group looked at fox proof fencing and colostrum feeding twin bearing ewes to improve survival. Any effect of the fox proof fencing was thought to be outweighed by a difference in shelter between the fox proof enclosure and the paddock outside the fox proof enclosure as the mob outside had a higher weaning percentage.

The colostrum feeding of half the ewes inside the fox proof enclosure did have a profitable outcome, however, again the results are confounded by the fact that those ewes were a full condition score heavier at lamb marking (having gain weight) than the other half of the ewes. It seems a long stretch to attribute this to the effects of colostrum feeding and therefore it indicates there were some nutrition differences between these two groups as well.

Key Message: Identifying sheltered paddocks for lambing is a critical component of improving lamb survival.

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1 Background

This project is an extension initiative of Meat and Livestock Australia whereby money was allocated fund up to 20 sites nationally with the aim at demonstrating the cost benefits to producers of best practice management principals that would lift productivity and profitability through increased lamb conception, survival and weight gain.

Best management principals included:

1. Supplementary feeding to optimise reproduction.
2. Pregnancy scanning ewe for improved allocation of feed.
3. Controlling predation.
4. Lambing time.
5. Ewe temperament.

In total 14 sites were approved and funded, 3 in Western Australia, 4 in South Australia, 1 in Tasmania, 2 in Victoria, and 4 in New South Wales.

2 Project Objectives

1. Develop site application forms and manage the application and review process to establish up to 20 sites nationally. Applications will be provided to MLA for review and selection with a recommendation from the consultant. The consultant will prepare agreement schedules and provide to MLA. MLA will then finalise contracting of the groups.
2. Liaise with nominated producer contacts and nominated state department/private consultant, for each group, to ensure that financial and production monitoring and measurements are undertaken.
3. The consultant will oversee the progress of each site in achieving its objectives and manage payment of each site's invoices as follows:
 - a. MLA will provide a maximum grant of up to \$15K for each of the 20 sites, and the Consultant will manage the payment of expenses on behalf of all the sites.
 - b. The consultant will provide a quarterly report to MLA detailing progress of each site. MLA will approve payment on review of this quarterly financial reconciliation statement for each of the 20 national sites.
 - c. The consultant will provide MLA with quarterly, in arrears, financial reconciliation statements for expenses incurred on behalf of each site with an invoice for total reimbursement of funds expended for the specified period. MLA will transfer the reconciled amount to the nominated account within two weeks of receipt of the reconciled statement and invoice.
4. Coordinate and assist each group to deliver 2 field days during the course of the Services.
5. Develop a 'cost of production' calculator, which will have broad industry application to the Australian sheep industry. This tool will have an accuracy to +/- 10% and will be utilised to provide standardised data from all groups involved in the Services.
6. Review mid-project (1 page) and final reports from each group and provide a recommendation to MLA on whether these are acceptable.
7. Write press releases outlining the major outcomes from each site for use by MLA.
8. Collate standard financial indicators from each of the sites to provide a national database of results.

9. Provide a comprehensive report at the conclusion of the Services.

3 Site Results and Press Releases

HAWKER AND BLINMAN BESTPRAC GROUP

VITAL STATISTICS

| | |
|------------------------------------|------------------------|
| Location: | Quorn, South Australia |
| Long Term Average Rainfall: | 330mm |
| Ewe Breed: | Merino |
| Ram Breed: | Merino |
| Lambing Date: | May |

| | Treatment | Control |
|-------------------------|------------------|----------------|
| Weaning % | 79% | 45% |
| Weaning Weight | 35kg lwt | 33kg lwt |
| Kg Lamb per Ha | 4.2kg dwt | 2.2kg dwt |
| Ewe death rate | 0% | 7% |
| COP (\$/kg lamb) | \$3.52 | \$4.70 |
| Profit (\$/Ha) | -\$1.00 | -\$5.00 |

The **Hawker and Blinman Bestprac Group** created a 0.4 difference in condition score by day 100 of pregnancy (condition score 3.4 v 3). The treatment mob had a conception rate of 96% at pregnancy scanning. The control mob was not pregnancy scanned and therefore no differences in conception rate could be determined.

It was noted that pasture condition were deteriorating prior to and over lambing. At shearing in September (after lamb marking) it was noted that the control mob was 0.5 CS lighter than the control mob. It was noted that the paddock that the control mob was run in had received earlier rains than the paddock that the trial mob was in and had therefore enjoyed better pasture conditions over the latter stages of the trial. This coupled with a lower lamb survival (more dry ewes) is likely to mean that the control mob gained condition quicker than the treatment mob post lambing and that the actual difference in condition through lambing may have been larger. The trial group was supplementary fed through this period predominantly with oats and barley.

The treatment mob had 22% higher lamb marking percentage (81% v 69%) and 33% higher weaning percentage (78% v 45%). There was a much higher lamb mortality rate in the control mob that was not supplementary fed. No condition scores were measured between pregnancy scanning and weaning so we are unable to determine exactly why there were significantly increased mortalities (for both ewes and lambs) but it is assumed there was significant weight loss in the ewes that were not being supplementary fed and that they slipped below critical condition scores of 2.

The treatment group produced an extra 13kg of lamb weaned per ewe joined at a cost of \$1.12 per kilogram of liveweight. In addition there was \$0.52 per kilogram of extra lamb weaned in benefits accruing from increased sheep and wool trading income due to increased ewe survival. The net cost per kilogram of additional lamb is therefore \$0.60. In this trial each kilogram of lamb liveweight was valued at \$1.50. This gives a marginal increase in profit per ewe of \$11.70.

Graph 1: Condition scores of ewes in the Hawker and Blinman Bestprac Group demonstration



TASMANIAN PRIME LAMB GROUP**VITAL STATISTICS**

| | |
|------------------------------------|------------------|
| Location: | Hagley, Tasmania |
| Long Term Average Rainfall: | 710mm |
| Ewe Breed: | Corriedale |
| Ram Breed: | Corriedale |
| Lambing Date: | September |

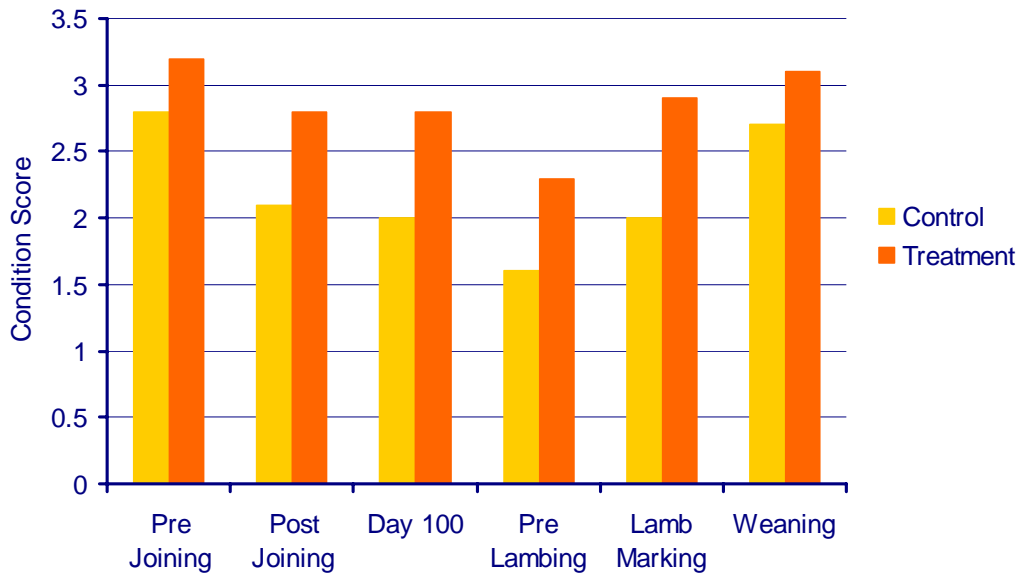
| | Treatment | Control |
|-------------------------|------------------|----------------|
| Weaning % | 131% | 120% |
| Weaning Weight | 33kg lwt | 31kg lwt |
| Kg Lamb per Ha | 201kg dwt | 177kg dwt |
| Ewe death rate | 0% | 7% |
| COP (\$/kg lamb) | \$2.14 | \$2.17 |
| Profit (\$/Ha) | \$437 | \$391 |

The **Tasmanian Prime Lamb Group** managed to create 0.4 of a condition score difference between the treatment and control groups by the start of mating (condition score 3.2 v 2.8). This resulted in a 6.5% increase in conception rates (143.5% v 137%).

For the Hagley area the autumn break in 2005 was particularly late. Whilst all ewes lost from joining to lambing the 0.5 difference in condition score was maintained with the treatment group by supplementary feeding with oats. This kept above condition score 2 whilst the treatment group fell below condition score 2 to a low of condition score 1.5 prior to lambing.

The treatment group weaned 11% more lambs (131% v 120%) and those lambs averaged 1.9kg heavier at weaning. The additional lamb weaned per ewe joined was 6kg liveweight at a cost of \$0.83 per kilogram. Each kilogram of liveweight was valued at \$1.66 per kilogram. This gives a marginal increase in profit per ewe of \$4.98.

Graph 2: Condition scores of ewes in the Tasmanian Prime Lamb Group Wean More Lambs demonstration



FACEY GROUP

VITAL STATISTICS

Location: Nomans Lake, Western Australia
Long Term Average Rainfall: 425mm
Ewe Breed: Merino
Ram Breed: Merino
Lambing Date: July

| | Treatment | Control |
|-------------------------|------------------|----------------|
| Weaning % | 94% | 83% |
| Weaning Weight | 25kg lwt | 25kg lwt |
| Kg Lamb per Ha | 33kg dwt | 29kg dwt |
| Ewe death rate | 2% | 2% |
| COP (\$/kg lamb) | \$3.32 | \$3.24 |
| Profit (\$/Ha) | \$16 | \$12 |

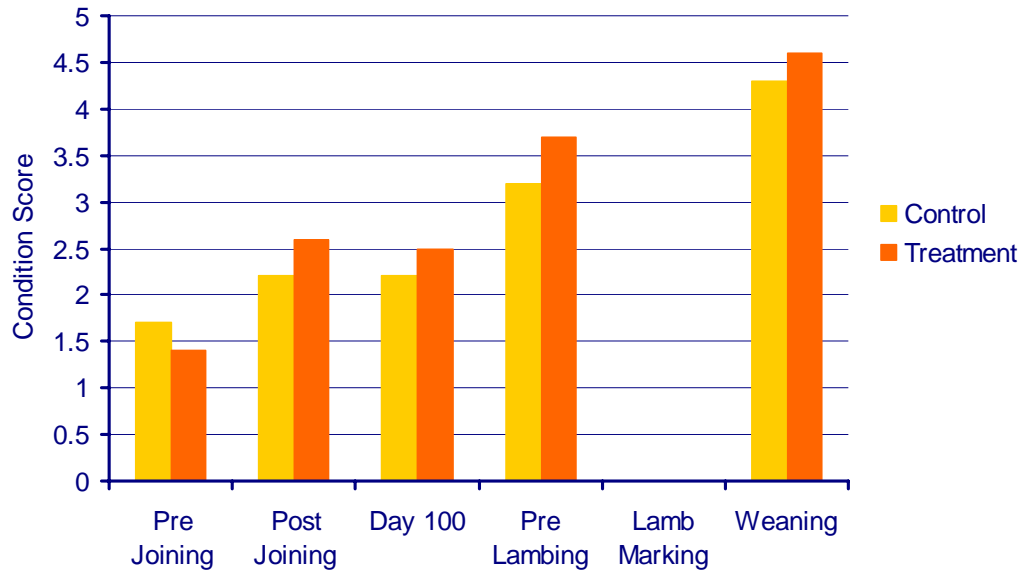
The **Facey Group** started with ewes from both the control and the treatment at approximately condition score 1.5 pre joining. By the end of joining, due to supplementary feeding with a mix of oats and barley the average condition score of both groups had increased with the treatment mob being 0.4 higher than the control (condition score 2.6 v 2.2).

This additional feeding gave an increase in conception rates for the treatment group of 14% (106% v 92%). From that point on seasonal condition meant that both groups continued to gain weight right up to pre-lambing where the treatment were still 0.5 of a condition score heavier (3.7 v 3.2).

By weaning both groups were over condition score 4. The treatment group weaned 11% more lambs than the trial group (94% v 83%).

The treatment group weaned 2.7kg additional lamb per ewe at a cost of \$1.00 per kilogram. The additional liveweight was valued at \$1.61 per kilogram (\$40 for a merino weaner). This gave a marginal increase in profit per ewe of \$1.65.

Graph 3: Condition scores of ewes in the Facey Group Wean More Lambs demonstration



NORTH RHINE LANDCARE GROUP

VITAL STATISTICS

Location: Keyneton, South Australia
Long Term Average Rainfall: 535mm
Ewe Breed: Merino
Ram Breed: Merino
Lambing Date: July

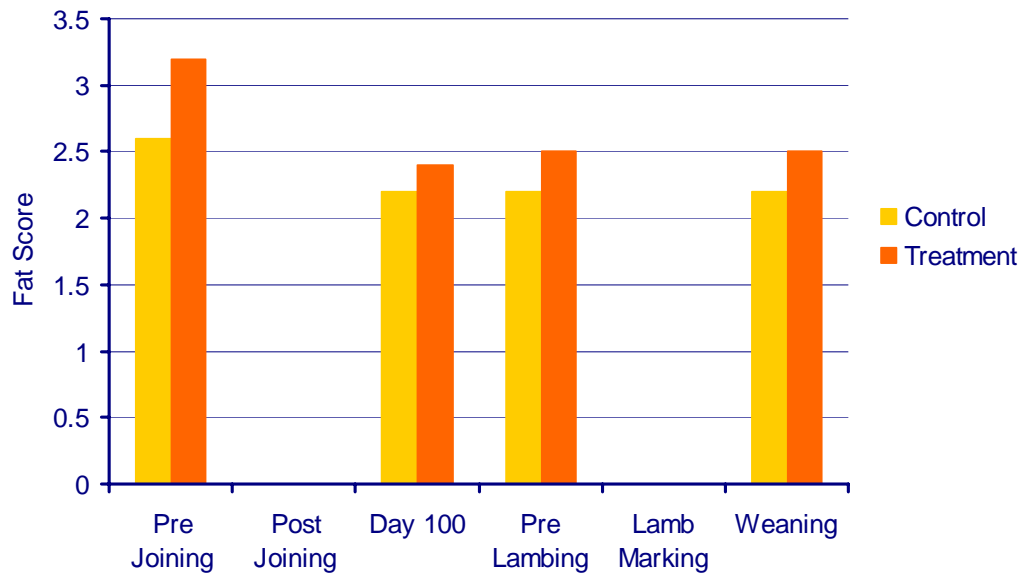
| | Treatment | Control |
|-------------------------|------------------|----------------|
| Weaning % | 104% | 95% |
| Weaning Weight | 27kg lwt | 24kg lwt |
| Kg Lamb per Ha | 27kg dwt | 22kg dwt |
| Ewe death rate | 5% | 8% |
| COP (\$/kg lamb) | \$2.55 | \$2.55 |
| Profit (\$/Ha) | \$12.66 | \$16.12 |

The **North Rhine Land Care Group** created a 0.6 difference in fat score between the treatment and control groups prior to joining (3.2 v 2.6 or ~57kg v 53kg) by feeding to increase condition score of the treatment ewes from condition score 2.5 to condition score 3 prior to joining. This led to a 6% increase in conception rate and an 8.8% difference in the number of lambs weaned per ewe joined (104% v 95%).

The treatment lambs were 3.1kg heavier at weaning (26.8 v 23.7) which led to an increase in total lamb production of 5.3kg liveweight per ewe. The cost of this additional liveweight was \$1.47 per kilogram.

In addition to the increase in lamb weaned per ewe there was also an increase in wool income and lower ewe losses giving additional wool and sheep trading income. This was valued at \$0.37 per additional kilogram of lamb liveweight and therefore the net cost of additional liveweight was worth \$1.10. In this instance the merino lambs were valued at \$1.20 per kilogram liveweight giving a \$0.10 margin per additional kilogram and therefore the margin per ewe of \$0.53.

Graph 4: Fat scores of ewes in the North Rhine Landcare Group Wean More Lambs demonstration



YASS BESTFARMERS GROUP

VITAL STATISTICS

Location: Gundaroo, New south Wales
Long Term Average Rainfall: 700mm
Ewe Breed: Merino
Ram Breed: Merino

| | Treatment | Control |
|-------------------------|-------------------------|----------------------------|
| Lambing date: | 21 st August | 14 th September |
| Weaning % | 96% | 96% |
| Weaning Weight | 25kg lwt | 28kg lwt |
| Kg Lamb per Ha | 129kg dwt | 120kg dwt |
| Ewe death rate | 0% | 0% |
| COP (\$/kg lamb) | \$2.10 | \$2.08 |
| Profit (\$/Ha) | \$232 | \$202 |

The **Yass Bestfarmers Group** achieved its increase in profit through a change in lambing date and running more ewes per hectare. The objective of this demonstration was to shift the lambing date so that ewe demands in late pregnancy better matched the increase in pasture availability coming out of winter.

With a late August lambing the current practice is to run 10 ewes per hectare. The aim was to run 12 ewes per hectare by shifting the lambing back to September.

A late Autumn break in 2005 meant that ewes were run together right up until lambing being supplementary fed as one mob the same rate of supplement per head. On the 22nd July (4 weeks prior to lambing for the control mob) both groups were put onto their lambing paddocks.

Both groups weaned 96% (lambs weaned per ewe joined) but the later lambing group produced more lambs per hectare because the stocking rate was higher the treatment group +1.9 lambs per hectare.

These lambs were lighter at weaning and subsequently in the following autumn (24.8 v 27.7kg Lwt). The difference in lamb production was 266kg Lwt for the control and 286kg Lwt for the treatment.

The lambs were valued at \$1.21 per kilogram liveweight plus \$5 skin value and therefore the values given were \$38.50 and \$35 respectively for the control and treatment lambs. The consequent

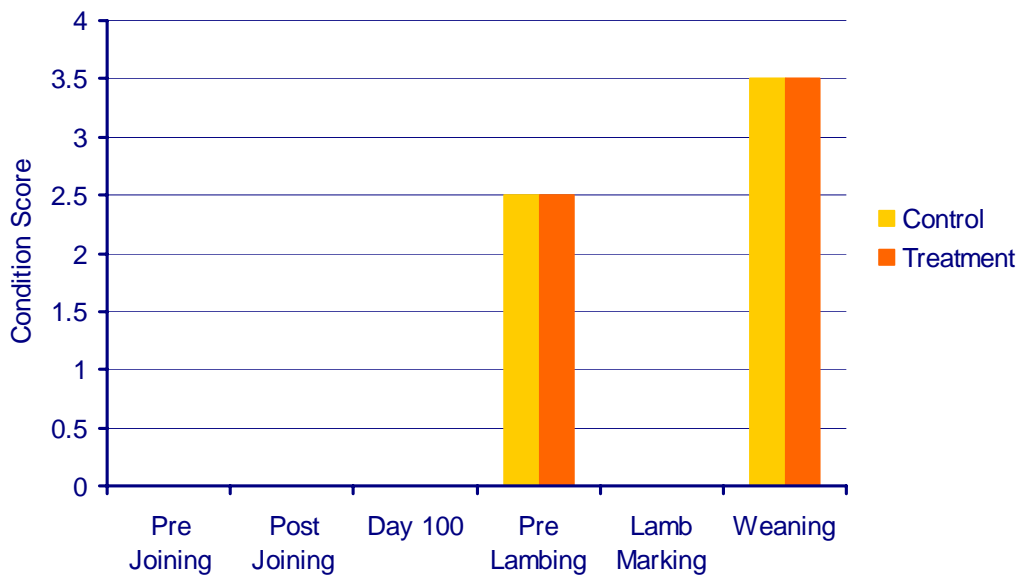
difference in lamb trading income per hectare was \$370 for the control and \$403 for the treatment groups.

There was no recorded difference in ewe deaths but because there were more sheep run per hectare in the treatment group there was more wool produced per hectare. Fleece values were estimated at \$25 per head per ewe which led to a difference of \$50 per hectare in wool income.

Labour costs and direct costs such as shearing and animal health costs are prorated according to the number of ewes. Therefore these are all higher for the treatment group. Overhead costs have been allocated at \$200 per hectare. The total costs per hectare excluding the supplement costs are therefore \$390 per hectare for the control and \$438 per hectare for the treatment group.

The additional profit per hectare was therefore \$30 per hectare.

Graph 5: Condition scores of ewes in the Yass Bestprac Group Wean More Lambs demonstration



WESTERN PLAINS PRIME LAMB GROUP

VITAL STATISTICS

Location: Caramut, Victoria
Long Term Average Rainfall: 660mm
Ewe Breed: Corriedale and 1st X
Ram Breed: Poll Dorset
Lambing Date: September

| | Treatment | Control |
|-------------------------|------------------|----------------|
| Weaning % | 122% | 113% |
| Weaning Weight | 27kg lwt | 26kg lwt |
| Kg Lamb per Ha | 100kg dwt | 87kg dwt |
| Ewe death rate | 2% | 8% |
| COP (\$/kg lamb) | \$2.90 | \$2.87 |
| Profit (\$/Ha) | \$138 | \$121 |

The **Western Plains Prime Lamb Group** achieved a more profitable result largely through an increase in weaning percentage, it would seem as a result of a reduction in ewe deaths. This result is difficult to explain given the data that was collected.

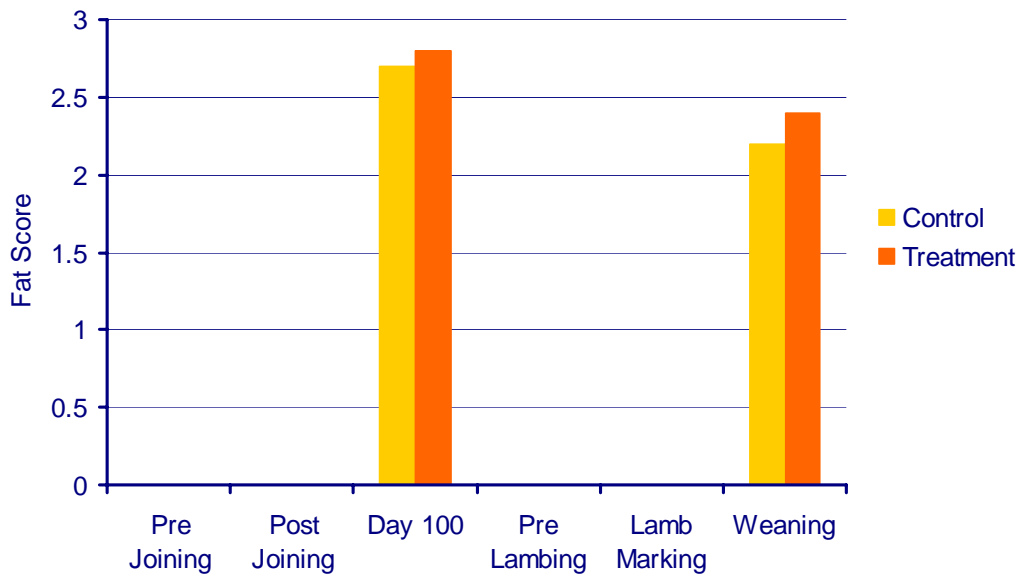
At this site the demonstration did not start until pregnancy scanning at which time the ewes were split and the treatment group was fed barley to maintain fat score of the ewes whilst the treatment group were allowed to slip in condition. The additional supplement did not markedly affect ewe fat score with a similar difference between the groups at weaning as at pregnancy scanning.

At this site the ewe fat scores were 2.8 and 2.7 for the treatment group and control group at scanning respectively. At weaning they were 2.4 and 2.2 at respectively. There was no indication that the control group slipped below fat score 2 over the course of the trial, fat score 2 being significant because it is below this critical condition that an increase in mortalities would be expected. The site leader did not think that the additional deaths were as a result of pregnancy toxaemia.

The treatment group weaned 9% additional lambs with an average weight 1.5kg heavier than the control. This gave an additional 4.3kg liveweight per ewe joined at a cost of \$1.34 per kilogram of liveweight. The additional wool and sheep trading income due to lower ewe losses was worth an additional \$1.07 per additional kilogram of lamb liveweight and therefore the net cost of the

additional liveweight was \$0.27. The liveweight was valued at \$1.51 per kilogram. Therefore the increase in profit per ewe was \$5.28.

Graph 6: Fat scores of ewes in the Western Plains Prime Lamb Group Wean More Lambs demonstration



TEMORA AG BUREAU

VITAL STATISTICS

Location: Temora, New South Wales
Long Term Average Rainfall: 550mm
Ewe Breed: 1st X
Ram Breed: Poll Dorset
Lambing Date: April

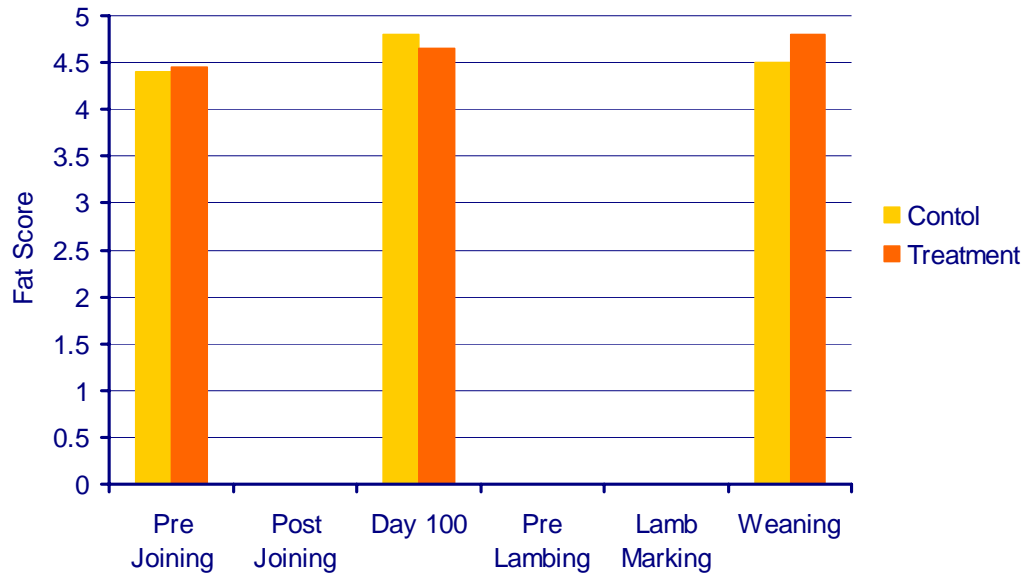
| | Treatment | Control |
|-------------------------|------------------|----------------|
| Weaning % | 122% | 115% |
| Weaning Weight | 23.1kg lwt | 21.8kg lwt |
| Kg Lamb per Ha | 85kg dwt | 75kg dwt |
| Ewe death rate | 0% | 0% |
| COP (\$/kg lamb) | \$4.59 | \$3.58 |
| Profit (\$/Ha) | \$10.00 | \$93.00 |

The **Temora Ag Bureau** was unable to obtain a difference in fat score between the control and treatment groups with both groups staying over fat score 4 throughout the trial despite a \$5,000 difference in feeding costs.

At scanning the control group had a higher conception rate with a potential 16% additional lambs. At weaning this potential had been negated and the treatment finished up weaning 7% more lambs (+21 lambs).

The treatment lambs were 1.3kg heavier at weaning so the treatment ewes weaned an additional 3.1kg in liveweight per ewe joined at a cost of \$5.82 per kilogram. Each additional lamb cost \$234 in additional supplement. The lambs were valued at \$2.06 per kilogram of liveweight and therefore there was a net loss of -\$4.89 per ewe.

Graph 7: Fat scores of ewes in the Temora Ag Bureau Wean More Lambs demonstration



SOUTH WEST SLOPES MERINO BREEDERS

VITAL STATISTICS

Location: Young, New South Wales
Long Term Average Rainfall: 6600mm
Ewe Breed: Maiden Merino
Ram Breed: Merino
Lambing Date: August

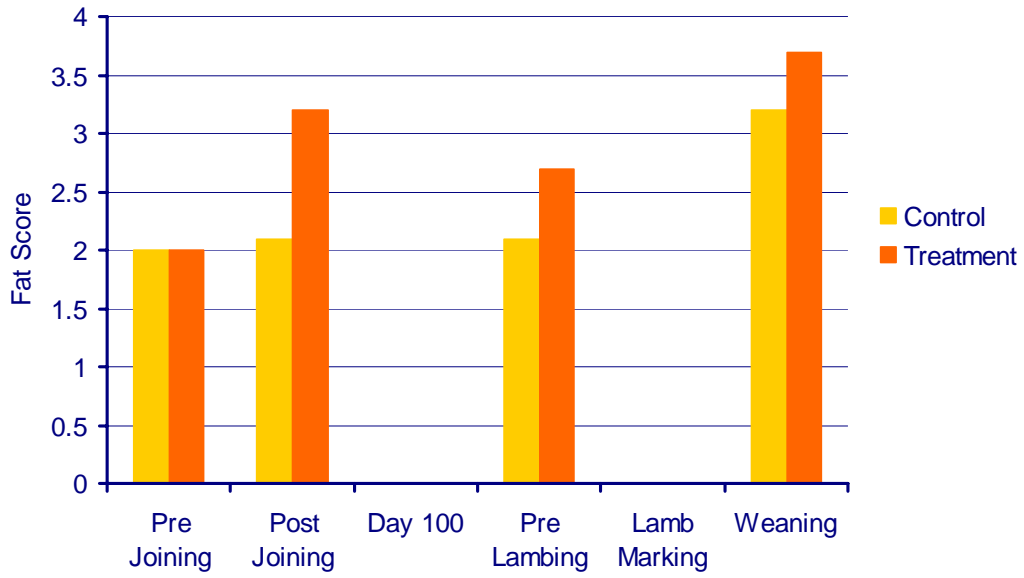
| | Treatment | Control |
|-------------------------|------------------|----------------|
| Weaning % | 59% | 48% |
| Weaning Weight | 22.5kg lwt | 18.8kg lwt |
| Kg Lamb per Ha | 44kg dwt | 30kg dwt |
| Ewe death rate | 5.3% | 3.5% |
| COP (\$/kg lamb) | \$2.30 | \$1.82 |
| Profit (\$/Ha) | \$213 | \$240 |

The **Southwest Slopes Merino Breeders Group** achieved a 3% (93% v 90%) higher conception rate at joining in maiden merino ewes after achieving a 4kg body weight difference between the two groups (38.1kg v 33.9kg) prior to joining. Both groups of ewes started in fat score 2 and were supplemented with oats. At the end of joining there was 1 fat score difference between the treatment and control groups.

The treatment group weaned 11% more lambs (59% v 48%) and the lambs averaged 3.7kg heavier at weaning (22.5kg v 18.8kg) giving an additional 5kg liveweight of lamb weaned per ewe.

The cost per additional kilogram was \$2.19 and the value of each additional kilogram was \$1.86. The higher liveweight of weaners and ewes may also give additional benefits in weaner survival and higher conception rates as the following joining however these were not measured.

Graph 8: Fat score of ewes in the Southwest Slopes Merino Breeders Wean More Lambs demonstration



ORROROO BESTPRAC GROUP**VITAL STATISTICS**

| | |
|------------------------------------|--------------------------|
| Location: | Orroroo, South Australia |
| Long Term Average Rainfall: | 340 mm |
| Ewe Breed: | Merino |
| Ram Breed: | Merino |
| Lambing Date: | March |

| | Treatment | Control |
|-------------------------|------------------|----------------|
| Weaning % | 95% | 87% |
| Weaning Weight | 26kg lwt | 24kg lwt |
| Kg Lamb per Ha | 10kg dwt | 8kg dwt |
| Ewe death rate | 2% | 2% |
| COP (\$/kg lamb) | \$3.50 | \$3.55 |
| Profit (\$/Ha) | -\$2.47 | -\$2.54 |

The **Orroroo Bestprac Group** were not able to generate a significant difference in condition score between the two treatments prior to joining (both groups ~CS3.5) due to having good pasture availability in a rangelands environment, and it is not known whether there was a difference in conception rates as only the treatment group was pregnancy scanned for twins.

The control flock did have 15% dry ewes compared to 2% for the treatment group. This could not be explained from differences in treatments as there was no difference other than being run in a difference paddock until that time. In mid to late pregnancy the treatment group was given additional supplementary feed via access to a partially reaped pea crop. The estimated grain component of this crop has been valued at the cost of purchasing in grain.

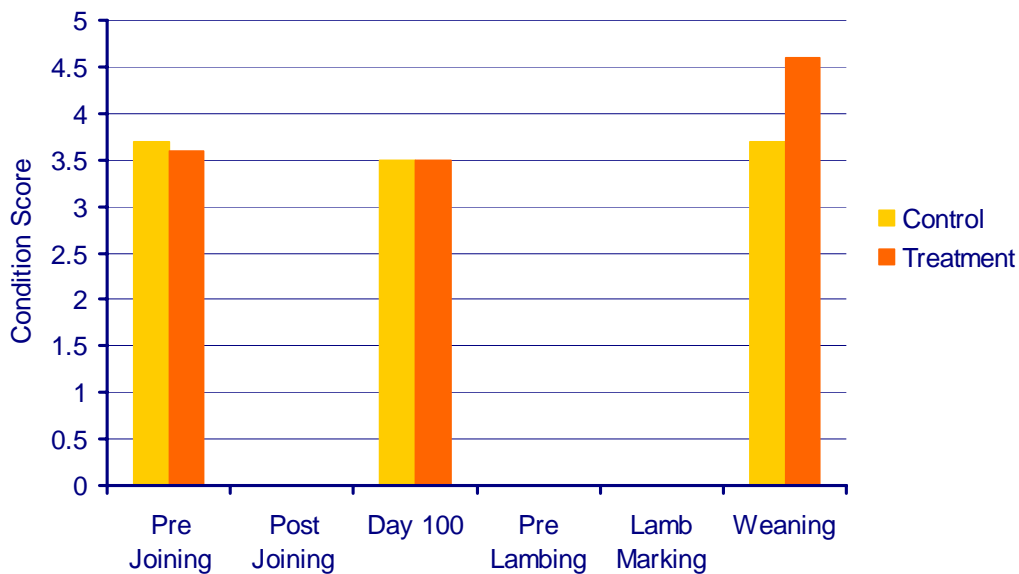
At weaning the treatment group was 1 condition score (4.6 v 3.7) heavier than the control group. The treatment group weaned 8% more lambs than the control group (95% v 87%) and those lambs were 1.3kg heavier at weaning (25.6kg v 24.3kg). This gives an additional 3.3kg lamb liveweight per ewe joined.

If no consideration were given to the additional dry ewes the cost of the additional kilograms of lamb was \$3.14 per kilogram liveweight. At this site the additional wool income was also recorded between the two groups with the treatment cutting \$987 more wool or \$1.70 additional wool per additional kilogram of additional lamb. The net cost per kilogram of additional lamb was therefore

\$1.44. The lambs were valued at \$1.50 per kilogram liveweight which essentially gives a net profit of \$0.20 per ewe.

The additional supplement may have contributed to the additional lambs weaned and the additional weight of lambs but consideration must also be given to the fact that there was an additional 11% dry ewes in the control mob at pregnancy scanning despite no real difference in treatment up until this point. If these ewes are removed from the cost benefit calculation for the demonstration then the additional lamb weaned per ewe is 0.75kg at a cost of \$14.05 with a net sheep and wool trading benefit of \$7.84 leaving a net cost of \$6.21 per additional kilogram of lamb weaned. This would give a net loss in profit of \$4.71 per ewe.

Graph 9: Condition score of ewes in the Southwest Slopes Merino Breeders Wean More Lambs demonstration



FITZGERALD BIOSPHERE GROUP**VITAL STATISTICS**

| | |
|------------------------------------|--------------------------------|
| Location: | Jerramungup, Western Australia |
| Long Term Average Rainfall: | 410mm |
| Ewe Breed: | 1st X SAMM |
| Ram Breed: | SAMM |
| Lambing Date: | June |

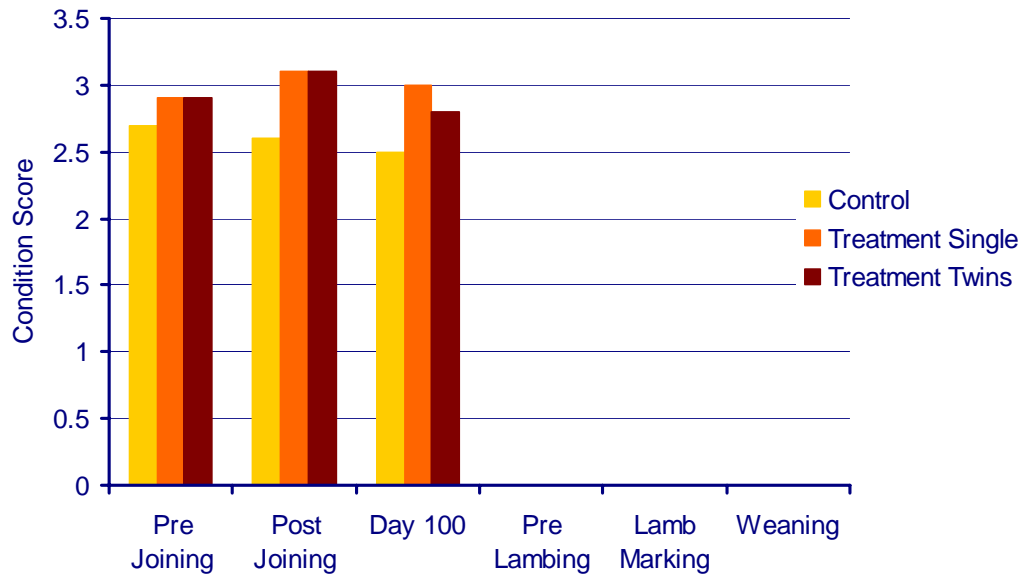
| | Treatment | Control |
|-------------------------|------------------|-----------------|
| Weaning % | 100% | 99% |
| Weaning Weight | 26kg lwt | 24kg lwt |
| Kg Lamb per Ha | 32kg dwt | 30kg dwt |
| Ewe death rate | 0% | 0% |
| COP (\$/kg lamb) | \$3.22 | \$3.00 |
| Profit (\$/Ha) | -\$36.00 | -\$35.00 |

The **Fitzgerald Biosphere Group** was unable to create a large CS difference prior to joining between the two treatments despite feeding \$4.78 additional supplement in the form of barley per ewe. By the end of joining however there was a 0.5 difference in condition score. This was created by a combination of increasing condition score of the treatment mobs and falling condition score of the control mob.

At scanning there was only a 1% increase in conception rates and at weaning the treatment has 1.4% additional lambs weaned. The weaned lambs were 2.1kg heavier in the treatment group (37kg v 34.9kg). This meant an additional 2.6kg of lamb liveweight weaned per ewe joined.

The additional cost per additional kilogram of lamb weaned was \$2.56 per kilogram of liveweight. The value of lamb used was \$1.10 per kilogram liveweight and therefore the margins per ewe was a decrease in profitability of -\$3.80 per ewe.

Graph 10: Condition score of ewes in the Fitzgerald Biosphere Group Wean More Lambs demonstration



MALDON BESTWOOL GROUP**VITAL STATISTICS**

| | |
|------------------------------------|------------------|
| Location: | Maldon, Victoria |
| Long Term Average Rainfall: | 670 mm |
| Ewe Breed: | Merino |
| Ram Breed: | Merino |
| Lambing Date: | July |
| Weaning %: | n/a |
| Weaning Weight: | n/a |
| Kg Lamb per Ha: | n/a |
| Ewe Death Rate: | n/a |
| COP (\$/Kg Lamb): | n/a |
| Profit (\$/Ha): | n/a |

The **Maldon Bestwool Group** found no difference in conception rate from feeding 1.2kg of lupins per week from 2 weeks prior to joining for six weeks when compared to feeding oats to provide the same level of energy. The conception rates for the two groups were 94% and 95% respectively.

In addition they found no difference in lamb survival by splitting the ewes into high flight speed and low flight speed prior to lambing. On average across the flock there were 7% of ewes dry at weaning and there was no trend for this to increase with increasing flight speed.

No cost benefit analysis was done given that there was no production benefits recorded.

Table 2: Relationship between flight speed and ewes ability to rear a lamb

| | Flight Speeds (1/100th second) | | | | | | |
|----------------|--------------------------------|-------|--------|---------|---------|------|------------|
| | <50 | 50-75 | 75-100 | 100-125 | 125-150 | >150 | Total |
| No. Dry | 1 | 20 | 7 | 1 | 1 | 0 | 30 |
| No. Wet | 13 | 227 | 92 | 26 | 6 | 7 | 371 |
| Total | 14 | 247 | 99 | 27 | 7 | 7 | 401 |
| % Dry | 7% | 8% | 7% | 4% | 14% | 0% | 7% |
| % Wet | 93% | 92% | 93% | 96% | 86% | 100% | 93% |

ASHEEP GROUP**VITAL STATISTICS**

| | |
|------------------------------------|------------------------------|
| Location: | Esperance, Western Australia |
| Long Term Average Rainfall: | 660 mm |
| Ewe Breed: | Composite |
| Ram Breed: | Composite |
| Lambing Date: | July |

| | In + Colos | Inside | Outside |
|----------------------------|-------------------|---------------|----------------|
| Weaning % | 157% | 146% | 162% |
| Weaning weight | 27kg lwt | 27kg lwt | 27kg lwt |
| Kg lamb per hectare | 87kg dwt | 81kg dwt | 91kg dwt |
| Ewe death rate | 4% | 3% | 1% |
| COP (\$/kg lamb) | \$2.09 | \$2.14 | \$1.86 |
| Profit (\$/Ha) | \$124 | \$113 | \$157 |

The **ASHEEP Group** looked at predation to improve twin lamb survival by building a fox-proof enclosure around two paddocks and utilising a third paddock alongside the fox-proof enclosure as a control.

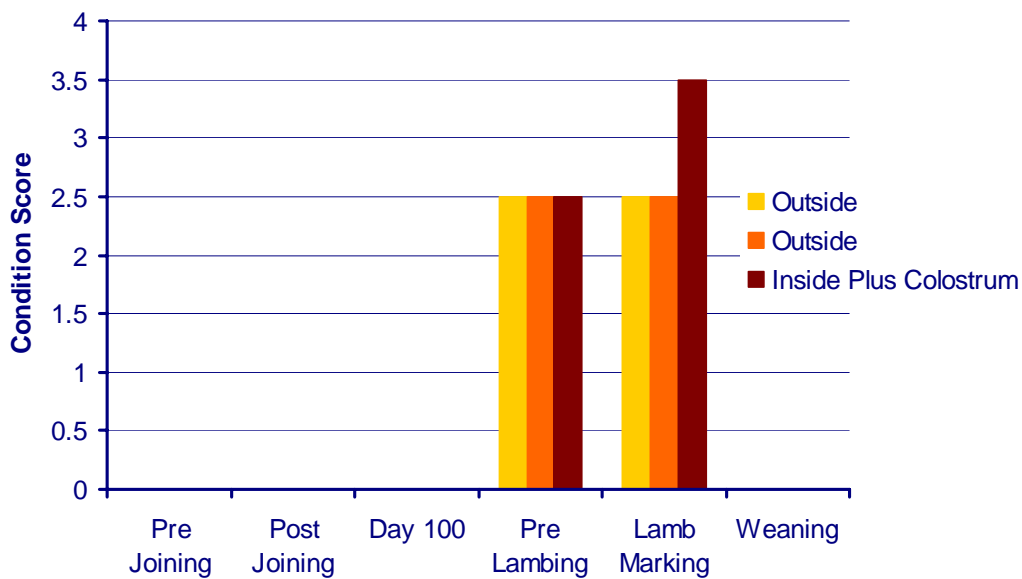
Each paddock was stocked with ewes scanned to have multiple lambs. The highest lambing percentage was recorded outside the fox proof enclosure (162% v 142%) which was attributed to better shelter due to a prevalence of tussocks in that paddock.

The estimated cost adapting an existing fence into a fox-proof enclosure was \$3.50 per metre. In this instance with a stocking rate of 4.6 twin bearing ewes to the hectare the cost per hectare over the lifetime of the enclosure (20 years) is \$5.67 per hectare. Assuming a weaned lamb to be worth \$45 that would require an additional 2.7% lambs weaned to break even. If the weaned lamb is worth \$30 it would require 4.1% additional lambs weaned to break even.

Inside the fox-proof enclosure one half of the ewes were supplemented to boost colostrum levels with 2.5kg per week of barley for the two weeks leading up to lambing. Over the period from pre-lambing to weaning the mob fed the barley increased in condition score from 2.5 to 3.5 whilst the other two groups maintained their CS at 2.5 which does confound the results to some degree.

Nevertheless an 11% increase in lambs weaned per ewe lambing was recorded in this mob. The weaning weights of the lambs or wool values were not recorded. The colostrum feeding produced 1.3kg of lamb weaned per ewe lambing. The cost per kilogram liveweight of additional lamb was \$0.83. The lambs were valued at \$1.48 per kilogram of liveweight giving an increase in profit per ewe of \$0.85.

Graph 11: Condition score of ewes in the ASHEEP Wean More Lambs demonstration



4 Conclusions and Recommendations

Fourteen demonstration sites were established nationally. Twelve sites completed their initial treatment objectives with two sites abandoning their initial objectives due to unfavourable seasonal conditions (Northern Tablelands Merino Wether Trial Group and Kangaroo Island Prime Lamb Producers Group).

Of the 12 sites that completed their initial management objectives, five achieved an explainable increase in profitability from implementing their altered management system. These sites were the Tasmanian Prime Lamb Group, the Hawker and Blinman Bestprac Group, the Facey Group, the North Rhine Landcare Group and the Yass Bestfarmers Group.

The first three mentioned groups had one common characteristic in that their control groups had average condition scores either below or close to condition score 2 over the course of the trial, whilst their treatment groups were supplementary fed to remain above condition score 2.5. This is significant because condition score two is a recognised critical threshold below which ewe and lamb survival is compromised significantly. None of the other groups whether profitable or not had ewes at or below condition score two throughout the course of the demonstration.

It is also significant that the size of the return on investment varies from 61% to 100% for these three groups.

Key Message: Supplementary feeding to maintaining ewes above condition score two for short period of the production cycle is cost effective.

The North Rhine group achieved a modest profit from the changes to the management system imposed through a combination of increased weaning percentage and higher wool and sheep trading income due to a lower death rate. Having spent \$1.47 for each additional kilogram of liveweight they returned \$0.10, a 7% return on investment.

The North Rhine group had the same approach to increasing profit as did the Southwest Slopes and Fitzgerald Biosphere groups in that they fed to gain weight in the treatment groups prior to joining in order to achieve a higher conception rate. Whilst the North Rhine group achieved a 6% higher conception rate in merino ewes starting in fat score 2.5 from this strategy the Southwest slopes group only achieved a 3% higher conception rate in maiden merino ewes starting in fat score 2 and the Fitzgerald Biosphere group only achieved a 1% increase in conception rates with 1st X SAMM

ewes starting in condition score 2.5. Only the North Rhine group achieved a positive return in this instance.

It is consistent with messages from the Lifetime Wool Project that feeding to increase condition before joining is unlikely to be profitable. The Facey group achieved a profit from the same strategy however the ewes were at condition score 1.5 when the trial started. Therefore it may be necessary to qualify the Lifetime Wool Project message with a condition that ewes are starting above condition score 2.

Key Message: Feeding to increase condition score for joining if ewes are already above condition score 2 is unlikely to be profitable.

Table 1: Relative return on investment of supplementary feeding strategies from Wean More Lambs Demonstration sites

| | (\$/Kg Lwt) | | |
|---|----------------------------|----------------|----------------------|
| | Working Capital Investment | Return | Return On Investment |
| Hawker & Blinman Bestprac Groups | \$1.12 | \$0.90 | 80% |
| Tasmania Prime Lamb Group | \$0.83 | \$0.83 | 100% |
| Facey Group | \$1.00 | \$0.61 | 61% |
| North Rhine Landcare Group | \$1.47 | \$0.10 | 7% |
| Southwest Slopes Merino Breeders Group | \$2.19 | -\$0.33 | -15% |
| Fitzgerald Biosphere Group | \$2.56 | -\$1.46 | -57% |
| | | (\$/Ha) | |
| Yass Bestfarmers Group | \$52.53 | \$29.99 | 57% |

The Yass site achieved its increase in profit by adjusting lambing date and stocking rate to run an additional 2 ewes per hectare. Unfortunately due to the late break in the 2005 season the ewes were not able to be stocked onto their paddocks until 4 weeks prior to lambing which meant that the true relative cost of getting the ewes through autumn and winter to arrive at lambing at the same condition score is not known. In the cost-benefit analysis all ewes are fed the same and therefore there is additional feeding per hectare attributed to the treatment group as more ewes were lambed down onto that area.

The increase in profit in this case came not from an increase in the per head performance of the animals (less kilograms of lamb was weaned per ewe) but rather a per hectare increase as a result of more lambs and more wool.

Key Message: Consideration should be given to lambing date and its influence on stocking rate in order to improve per hectare returns.

Another two sites had profitable outcomes however there were confounding effects in the results which means that the economic analysis is dubious. The Western Plains Prime Lamb Group achieved a more profitable result through a reduction in ewe deaths however that result is difficult to explain from the data collected. The ewes were not thought to have been pushed below their critical minimum condition scores and the site leader did not think that it was a result of pregnancy toxemia.

The Orroroo Bestprac group also achieved a profitable result however at scanning, preceding which there had been no differences in treatments, the control group had 13% additional dry ewes in comparison to the treatment group. When these ewes are removed from the economic analysis the result is a large loss per ewe.

The Temora Agricultural Bureau maintained their ewes above fat score 4 for the duration of the trial and whilst an effort was made to keep the treatment group at a higher fat score than the control there was limited success. As a consequence there were no real production differences between these two groups.

Key Message: At greater than condition score 3.5 any further nutritional benefits are likely to be of limited value.

The remaining two sites who demonstrations ran to completion tried variations in their treatments. The Maldon Bestprac Group looked at supplementation of ewes with lupins prior to joining. Neither of these delivered a production benefit.

The ASHEEP Group looked at fox proof fencing and colostrum feeding twin bearing ewes to improve survival. Any effect of the fox proof fencing was thought to be outweighed by a difference in shelter between the fox proof enclosure and the paddock outside the fox proof enclosure as the mob outside had a higher weaning percentage.

The colostrum feeding of half the ewes inside the fox proof enclosure did have a profitable outcome, however, again the results are confounded by the fact that those ewes were a full condition score heavier at lamb marking (having gain weight) than the other half of the ewes. It seems a long stretch to attribute this to the effects of colostrum feeding and therefore it indicates there were some nutrition differences between these two groups as well.

Key Message: Identifying sheltered paddocks for lambing is a critical component of improving lamb survival.

5 Achievement of Project Milestones

- Site application forms were developed and 14 sites were contracted to run Wean More Lambs Demonstration Sites.
- Liaison with sites was conducted with in excess of 500 email contacts and an unrecorded number of contacts via phone. Despite this not all measurements that were to be undertaken by each group were followed through with. The main reason given by sites was the advent of difficult seasons and in cases of rangelands environments the logistical difficulties in however this cannot be used as a valid reason on all sites. There was a varying degree in the professionalism of management of sites. The key features of the well run sites were one or all of the following;
 - o Larger more established group with dedicated administration staff
 - o Professional attitude of consultant/department coordinator with a good understanding of the necessity of achieving targets and the importance of monitoring and measurement.
 - o Participating producer with a professional approach to achieving the objectives.
- All site expenses have been processed. Final approval is pending from MLA for which the invoice will be reconciled.
- All but one site delivered two field days. In this site a professional disagreement between co-ordinators of the group prevented the field day from happening before the end of the project.
- The CoP calculator has been developed.
- All mid-term and final reports have been reviewed and it is considered that they should be accepted by MLA.
- Press releases for each site have been written.
- Standard financial indicators for each site have been collected and are included in the press releases where appropriate.
- The final report is completed.

Performance Indicators

| | |
|--|-----------|
| No of groups established | 14 |
| Groups completed 1 of 2 field days/workshops | 14 |
| Groups completed 2 of 2 field days/workshops | 13 |
| Number of producers attending field days/workshops | 653 |
| Number of media/newsletter releases | 52 |
| Groups completed measurement | 13 |
| Groups with production increase | 9 |
| Groups with economical production increase | 5 |
| Groups with no production increase | 5 |
| Coordinator contacts to groups to date (Emails – Sandy only) | 471 |
| Coordinator visit to groups | 13 visits |
| Groups completed financial assessment | 13 |
| Mid-term reports from groups | 14 |
| Final reports from groups | 14 |
| Groups terminating demonstration | 1 |

