Lifetime Wool

Optimising ewe nutrition to increase farm profit
Answering the key questions

• On your farm, in your environment, with your sheep:

  - When are the critical times for ewe nutrition?

  – What are the critical targets for ewe nutrition?
Managing ewe nutrition

• The benefits of having ewes in the right condition:
  - Improved ewe health
  - Increased ewe wool production & tensile strength
  - Increased ewe reproduction
  - Increased lamb survival
  - Increased progeny fleece weight and decrease micron
The developing lamb: The processes ewe management can effect

Ovulation rate & conception

Primary follicle development

Secondary follicle development

Follicle maturation

Placental development

Udder development & colostrum production

Fetal growth

Lamb Growth (Ewe milk production)

Days of pregnancy:

- Joining
- 30
- 60
- 90
- 120
- Lambing
- Weaning
Wean more lambs
Ewe condition score at joining and number of lambs born

![Graph showing the relationship between ewe condition score at joining and lambs born per 100 ewes. The graph depicts a positive correlation.](image-url)
<table>
<thead>
<tr>
<th>Farm/location</th>
<th>Low CS (&lt; 2.7)</th>
<th>High CS (&gt; 3.3)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skipton</td>
<td>112</td>
<td>164</td>
<td>+ 52</td>
</tr>
<tr>
<td>Edenhope (maidens)</td>
<td>74</td>
<td>112</td>
<td>+ 38</td>
</tr>
<tr>
<td>Ararat</td>
<td>124</td>
<td>149</td>
<td>+ 25</td>
</tr>
<tr>
<td>Edenhope</td>
<td>78</td>
<td>106</td>
<td>+ 28</td>
</tr>
<tr>
<td>Edenhope</td>
<td>110</td>
<td>130</td>
<td>+ 20</td>
</tr>
<tr>
<td>Ararat</td>
<td>132</td>
<td>147</td>
<td>+ 15</td>
</tr>
<tr>
<td>Dunkeld</td>
<td>92</td>
<td>103</td>
<td>+ 11</td>
</tr>
</tbody>
</table>
Lamb birth weight and survival

- Single lambs
- Twin lambs

Birth weight (kg) vs. Lamb survival (%) graph.
Ewes in better condition at lambing have heavier lambs

- Lamb birth weight (kg)
  - Single lambs
  - Twin lambs

Ewe condition score at lambing

LTEM 4.5
Ewe condition score at lambing and lamb survival

![Graph showing the relationship between ewe condition score at lambing and lamb survival for single and twin lambs.](image)

- **Single lambs**
- **Twin lambs**
## Farmer case studies

<table>
<thead>
<tr>
<th></th>
<th>CS at lambing</th>
<th>Survival of singles (%)</th>
<th>Survival of twins (%)</th>
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</thead>
<tbody>
<tr>
<td>Western Victoria (4 sites)</td>
<td>2.2</td>
<td>74</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>3.1</td>
<td>86</td>
<td>56</td>
</tr>
<tr>
<td>All states (16 sites)</td>
<td>2.2</td>
<td>83</td>
<td>57</td>
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<tr>
<td></td>
<td>3.0</td>
<td>90</td>
<td>67</td>
</tr>
</tbody>
</table>
Improving ewe nutrition through lactation means better weaners.

Weaner survival maximised.

Weaning weight (kg)

Feed on offer (kg DM/ha) through lactation

Victoria
The Place To Be

another innovation
limited
Liveweight at weaning explains 95% of differences in weaner mortality.
Produce more profitable progeny
Progeny clean fleece weight is affected by ewe nutrition from early to mid-pregnancy.
Progeny fibre diameter is affected by ewe nutrition from early to mid-pregnancy

![Bar chart showing the effect of birth type and nutrition on fibre diameter. Single: Lose 0.5 CS, Maintain CS; Twin: Lose 0.5 CS, Maintain CS.](chart.png)
Late pregnancy nutrition effects on progeny fleece weight

![Graph showing the effect of condition score change on clean fleece weight between Day 90 and 150 for single and twin lambs.](image-url)

- **Single lambs**
- **Twin lambs**
Late pregnancy nutrition effects progeny fibre diameter

Condition score change (Day 90 to 150)

Fibre diameter (micron)

Twin lambs

Single lambs
The effects are permanent

![Graph showing the relationship between age of progeny and clean fleece weight under high and low nutrition conditions. The graph indicates that the effects of nutrition are permanent.]
Adding up the differences

Clean fleece weight (kg)

Mean Fibre Diameter (micron)

- Twin
- Poor ewe nutrition early-mid pregnancy
- Single lamb, adequate nutrition
- Poor ewe nutrition late pregnancy & lactation

Adding up the differences

Clean fleece weight (kg)

Mean Fibre Diameter (micron)
From mobs to individuals: tailor made nutrition

• Use condition scoring to treat ewes as individuals not mobs

• Manage ‘fat’ and ‘thin’ ewes differently after weaning and in late pregnancy

• Meet the requirements of each ewe (singles and twins, fats and thins,..)
How do I monitor a mob?

- Only need to assess 50 ewes
- The 50 ewes need to be randomly selected
- Letting half the mob run through and then drafting out every second ewe until you get 50 will give a good selection
Individual sheep management

- Using condition scoring to treat ewes as individuals not mobs

Identify lighter ewes in the race

Draft out light ewes and manage accordingly
Measure to manage

- Monitoring ewes allows informed decisions
- Monitoring early allows timely management
- Get higher ewe weights and condition scores at joining by maximising weight gain on green feed post-weaning
- Feed early and less rather than more and late
Economics in Lifetime wool

The role, the results and the future

John Young
Farming Systems Analysis Service
MIDAS Results

Value of the information to farmers

- $1 500 to $38 000 / farm
- 40c to $7.00/ewe, mostly $2.00/ewe
  - Effective times of lambing
  - Growing season
  - Cereal-sheep zone

- Progeny Flc Value : Progeny Survival (50:50)
Robust recommendations

Profiles unaffected by

- Wool price: +33%, -33%
- FD premium: +50%, -40%
- Meat price: +25%, -25%
- Grain price: +100%, -25%
- % ewes in flock
- Pasture type & growth
Recommended Profiles

Lambing on green feed

– moderate condition loss from joining to day 90, provided the condition can be regained prior to lambing on green feed

– aim for Condition Score 3 at joining
Recommended Profiles

Lambing on dry feed
- Maintenance or moderate condition loss from joining to day 90
- maintenance from day 90 to lambing
- aim for Condition Score 3 at joining
‘Lifetime Ewe Management’

- Nationally accredited training course based on key outcomes from lifetime wool
- 4 producers per group – self formed & interactive
- 6 sessions per year x 2 years – facilitated by local consultant
- Demonstrated to work
What's in LTEM for producers

• Training in condition scoring, pasture assessments and feed budgeting

• More targeted ewe management to optimise stocking rates and manage risks

• More efficient utilisation of pasture and supplements

• Improved ewe reproductive rates, progeny survival and productivity

• Opportunities to learn from other sheep producers
Measure to manage

- Producers can benefit from knowing the condition score of their ewes

- This allows producers to make decisions about their productivity and manage risk to avoid “disasters”

- Condition of ewes at lambing drives productivity & how ewes got to that condition is important for profitability

- Late lambing flocks are more profitable and have different optimum condition score targets
Format for each group meeting

- All producers visit each farm
- Trickle-feed results from lifetimewool relative to stage of reproductive cycle
- ‘Hands-on’ activities
  - Condition scoring (CS) 50 ewes/mob [recorded in A5 booklet]
  - Assessment of Feed On Offer (FOO) in target mob paddock
  - Individual producers setting CS targets for next period based on understanding of the impacts of CS on ewe and progeny performance, feed resources available and associated costs.
  - Calculating a CS budget using feed budget tools.
The program works – VIC ‘pilot’

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure of meetings</td>
<td>4.6</td>
</tr>
<tr>
<td>Timing of meetings</td>
<td>4.4</td>
</tr>
<tr>
<td>Quality of facilitator</td>
<td>4.6</td>
</tr>
<tr>
<td>Was information useful</td>
<td>4.8</td>
</tr>
<tr>
<td>Was information easily understood</td>
<td>4.4</td>
</tr>
</tbody>
</table>
Skills changes

- Pasture assessment skills improved from 2.8 to 4.2 (Ave. scores: Scale 1-5)
Skills changes

• Condition score assessment skills improved from 2.2 to 4.2
Skills changes

• Feed budget assessment skills improved from 2.5 to 4.2
Practice changes

- 85 flocks (450,000 ewes) in VIC ‘pilot’ (2004 and 2005)

  - 10% increase in weaning rate compared to long term average (83 vs. 73%)
  
  - 50% decrease in ewe mortality (2.1% vs. 4%)

  - $>20,000 per farm increase in value of production
Practice changes

• >90% participating farmers changed practice within 12 months

- increase in the use of supplements

- separating ‘fats’ and ‘thins’ between weaning and joining or during pregnancy

- shortening of joining periods

- pregnancy scanning and preferential management of twins
“Lifetime Ewe Management has allowed us to realize the full potential of our sheep and pasture enterprise through the use of a “measure to manage” philosophy”