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## For the latest in red meat R&D

# Ewe and lamb mortality – production focus

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CHARLEVILLE, March 2021

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# Benchmark Mortality Rates

- Lamb mortality - losses typically range between 20-25% highly variable among years 10% to 77% (NSW).
- Twin mortality 2-2.5 times that of singles in the same flock
- Mortality figures below 10% in singles and 20% in twins are relatively uncommon in commercial flocks.
- Non–Merinos – Higher survival rates and targets
- Your targets will rely on reviewing your flocks performance – Lambing % is not enough.

| | Target | Typical Range |
|---|---|---|
| Lamb Mortality | <20% | 10 -77% |
| Single Mortality | <10% | 6 - 30% |
| Twin | <20% | 30 - 45% |
| Ewe Mortality (joining to marking) | <3% | 5%+ (10% high) |

- Hinch and Brien 2014; Anon 2008 (WML); Refshauge *et al.* 2016; Watson 1957; Kelly 1992; Allworth 2017; Trompf *et al.* 2011)

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# Two Main Opportunities


**1 Improving ewe nutritional and meeting condition score targets at key times**

- **Set targets**
- **Adjust strategies to suit conditions**
- **Improve access to green feed**

2 Identify and retain the best performing ewes and remove the worst performers from the flock.

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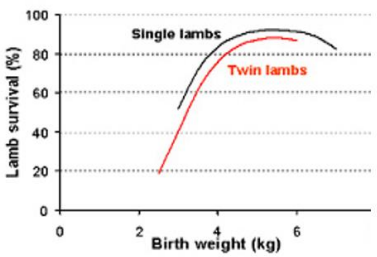
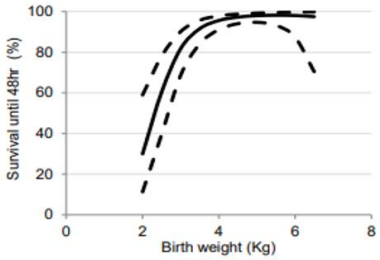
## 1. Good lamb birth weight

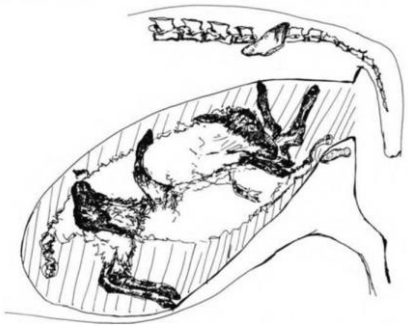



Single and twin **Merino** lamb survival rates at different birth weights (Lifetime Ewe, 2015).




Predictions of the influence of birth weight on the survival of **Dorper** lambs from birth to 48 hours (Gooding and Pearce, 2015).

## 2. An easy birth



## 3. **Maternal bonding –opportunity to establish ewe-lamb bond**

## 4. Good lactation and availability of colostrum

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# Lamb and ewe mortality – Reducing risk

- Over 70% of all lamb losses occur during lambing or in the first week of life.

- DANGER ZONE for ewe mortality – late pregnancy and birth.
  - Twinning ewes < CS 2.5 @ lambing; Single bearing ewes <CS 2 or >CS 4 @ have a higher risk of mortality
  - Metabolic diseases (e.g. pregnancy toxaemia, hypocalcaemia)
  - Difficult births.

- To reduce risk - focus on meeting condition score and nutritional targets at joining and during pregnancy (particularly late pregnancy).

- Targets are useful, records are essential

# Guidelines and Targets

- Set targets for ewes to recover condition between weaning and joining (prejoining)
  - Merinos – CS 3 (maintain this throughout pregnancy).
  - Dorpers – Lwt. Target (60 kg- assuming a SRW of 65 kg)

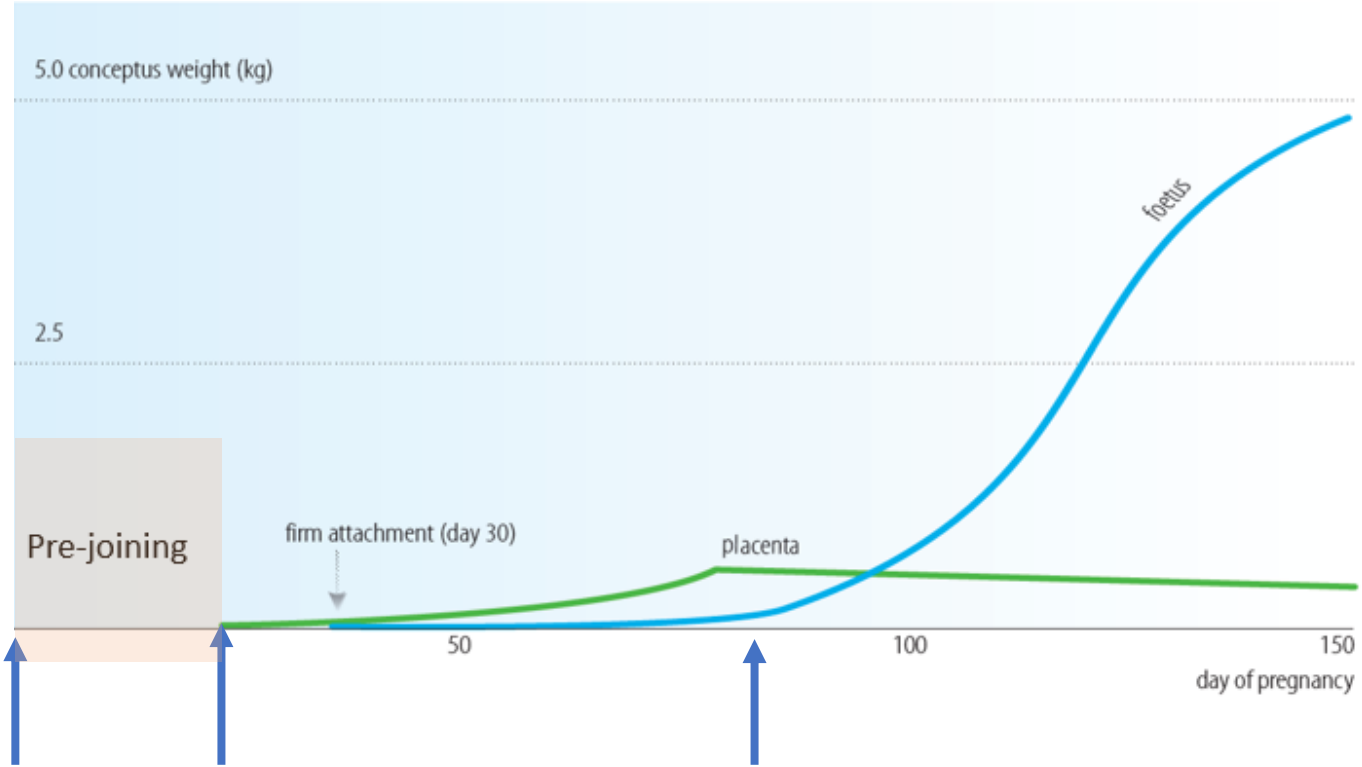
(Gooding and Pearce, 2015).

- Adopt strategies to meet the nutritional requirements of ewes in late pregnancy and early lactation –
  - Merinos - aim to have ewes averaging CS 3 by lambing. (2.5- 3+ for singles; 3 – 3.5 for twins)
  - Dorpers-  Lwt. Target (+60 kg)

- A business with good records may have more tailored targets.

# Placental and foetal growth

Source: Bell (1984)




Scan 80- 90 days after the start of joining

Lambing

- Managing nutrition before and during pregnancy sets up the ewe and lamb to survive.
- Weaning and scanning are ideal time to formulate flexible strategies.

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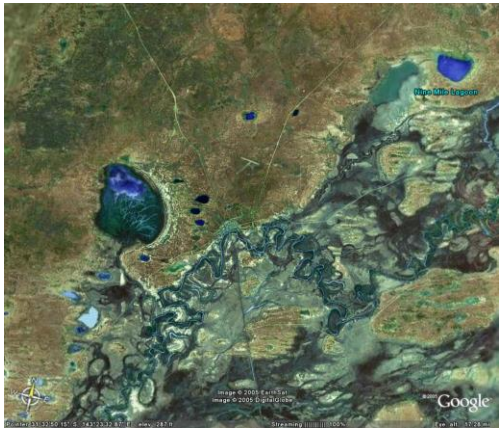
# The challenge

- Understand requirements
- Make an assessment of how well the available forage is meeting their requirements. - Nutrition EDGE




- Variation in
  - Quantity (50 -4000+ kg DM ha)
  - Quality (<45 – 70% DMD)
  - Potential forage production
    - Land type mix
    - Land condition and landscape function
    - Composition (± Perennials and Browse)
    - Tree and shrub canopy cover
- Animal selectivity and behaviour
- Unmanaged Grazing Pressure (~30-50% of forage demand)

# How

1. In highly variable climates, strategies to meet targets need to vary with seasonal conditions.

2. Grazing Management to maintain/improve:

- Composition
- How pastures are ‘Conditioned’ to respond to a rainfall

# The more information the better!

- In highly variable climates, strategies to meet targets need to vary with seasonal conditions (+ be flexible).

Scan

Condition Score

Pasture assessment

- current & projected

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# Pasture Quality + Quantity

- Animal performance is driven by intake – influenced by quantity + quality.
- **Quality** (digestibility): Green, actively growing, vegetative not reproductive (flowering/seeding), Leaf:stem.
- **Quantity**

| Pastures each having 500 kg DM per hectare but of different height and densities | Hours grazing | Amount per bite | Pasture intake (kg/day) |
|---|---|---|---|
|  | 8 |  | 1.4 |
|  | 9.5 |  | 1.1 |
|  | 11 |  | 0.7 |

Relationship between pasture height, feeding behaviour and pasture intake (Source: PROGRAZE, Graham (2017).

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# Composition


**Plate 1.6.** A big pulse of plant growth following a big rainfall trigger.

**(Source: Ludwig *et al*. 1996)**

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# Composition


**Plate 1.7.** A small rainfall triggers only a small growth pulse.

**(Source: Ludwig *et al.* 1996**

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# Conditioning

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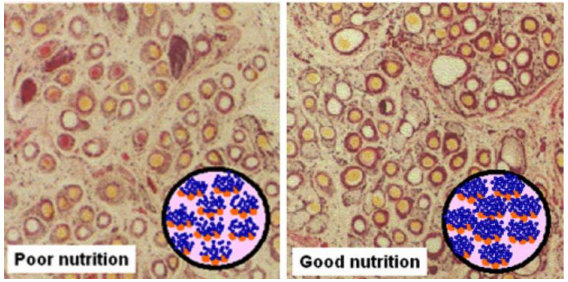
# Example strategies

- What is the plan? (no rain for next 3 months; 20-50mm in the planning period)
- Identify responsive paddocks early– maintain ground cover +50%; utilisation of grasses (+10 cm)
- Allocate paddocks based on condition score at weaning (pre-joining)
- Delayed grazing to allow pasture to grow and produce leaf (control unmanaged grazing pressure) –
- Identify ‘early’ and ‘late’ lambers
- Preferential treatment of low CS; twin bearing ewes
- Flush feeding
- Sell, agist, feed (Is feeding a part of your business or not?)

# Production Implications

(Source: Lifetime ewe)




- More surplus sheep, more options for selection and culling, flexibility to change flocks structures.
- Improved amount and quality of wool (nutrition in late – pregnancy – Secondary follicle development – from 90 days to birth- have a direct influence on the density and fineness of the fleece)
- Weaning weight of lambs is influenced by ewe liveweight at joining and ewe liveweight change during pregnancy and lactation. Liveweight at weaning is the most important factor for weaner survival.
- Avoiding very poor results in bad years.

- Differences between biological optimum and economic optimum
- Stocking rate

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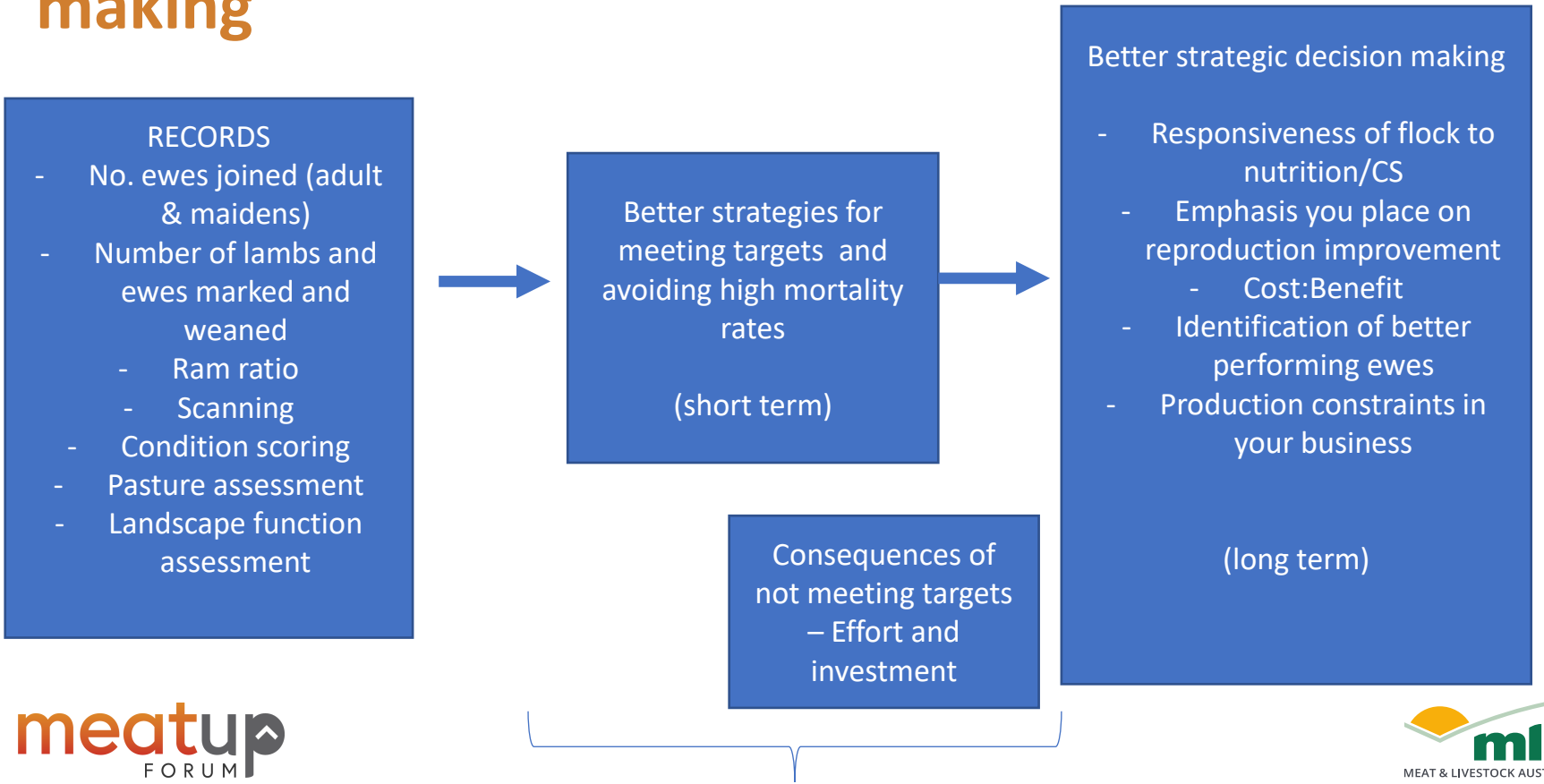
# Benefits for short-term and long-term decision making

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# Two Main Opportunities

1 Meet the nutritional requirements of ewe


**2 Identify and retain the best performing ewes (on the basis of Net Reproduction Rate) and remove the worst performers from the flock.**

**-** Improves lamb survival in the current generation

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- Resource flock @ Trangie Agricultural Resource Centre
- Lifetime reproductive performance (2-6 years of age)
- 7,322 Ewes
- 32,000 + records

Lee et al. (2009)

- Variability of NRR, Fertility, Fecundity and Survival is high

| | Ewes ranked on lifetime reproductive rate | | |
|---|---|---|---|
| | Average | Lowest 25% | Highest 25% |
| Weaning % | 84% | 30% | 139% |
| Fertility % | 79% | 55% | 95% |
| Litter Size | 1.42 | 1.28 | 1.64 |
| Survival % | 73% | 47% | 90% |

- Achievable reproduction rates are high than current expectations based on whole flock means.
- Potential impact on destocking strategies.

Lee *et al.* (2009)

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# How?

- How do you find and identify these higher performing ewes?

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# Strategies

- Select twice dry
- Select fail to rear twice
- Cull (or separate) poor performers early and keep productive ewes for longer in the flock.
- Requires Identification (simple or high-tech)

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- Early reproductive performance is indicative of reproductive performance in later life.

**Performance of adult (4-6 year old) Merino ewes by their weaning performance at 2 and 3 years of age**

| Performance @ **2 and 3 year old** | Performance @ **4-6 year old** (lambs weaned/100 ewes joined) |
|---|---|
| Dry twice | 69 |
| Other failed twice | 85 |
| Dry once, and weaned lamb(s) once | 100 |
| Lambed & lost once, and weaned lamb(s) once | 109 |
| Weaned lamb(s) both years | 117 |

*Source: Lee et al. (unpublished); cited in Lee et al. 2012.*

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# Production Implications

- Needs careful consideration e.g.
  - Flock Structure
  - Ewe survival
  - Impacts on wool production

**Improved destocking options in dry times**

# Take home messages

- There are opportunities to improve the nutritional management of rangeland ewes by setting targets, adopting flexible strategies and improving grazing management.
- Scanning, condition scoring, pasture assessment, and recording improve decision making and underpin better strategies.
- Producer face considerable challenges in making improvements– seek peer-support and input of advise from extension specialists.

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# Tools and resources

## Where to from here?

**Producer Groups = Results**

**e.g. pathway**

Tactical grazing management

Lifetime Ewe

Profitable Grazing Systems

Producer Demonstration Sites

Other: Productive older ewes

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