Managing ewes to improve lamb survival
In this Factsheet you will learn why sometimes things do not always go to plan at lambing time, and how we can manage ewes to optimise lamb survival.

Before following this presentation and factsheet it might be helpful to look at the SheepNet factsheet ‘The Biology of the Ewe-Lamb Bond’ which explains the science behind the formation of the bond. This is the basis for the advice given in this presentation.
Mother-offspring interactions

- Ewe inexperience
- Ewe genetics
- Litter size
- Nutrition during pregnancy
- Stress around birth

Activity, udder seeking, sucking, ‘competence’
thermoregulation

Licking, low-pitched bleats, udder acceptance; absence of aggression; olfactory memory: ‘selectivity’

Lamb genetics
- Litter size
- Prenatal nutrition

Difficult delivery

Mutual recognition (all senses);
spatial proximity; sucking interactions; distress at separation;
Maternal vigilance
Managing the ewe-lamb bond

- Ewe inexperience
- Difficult delivery
- Ewe nutrition in pregnancy
- Stress and disturbance at lambing
- Lambing environment
- Ewe and lamb genetics
Ewe inexperience

Immaturity – related to maternal experience not age

Novelty
Ewe still growing herself
Other stressful events
Inexperienced ewes have higher lamb mortality because:

- Longer labour - but do not need more assistance if allowed time to progress through birth process
- More likely to be disturbed by environmental factors
- Take longer to start licking lamb after birth, but then lick as much as experienced ewes
- More likely to show aggression and to reject lambs, more likely to move away as lamb tries to suck but improve with time
- Smaller lambs and placenta, less efficient lactation
Managing the inexperienced ewe

• She does need to give birth for the first time!
• Give her the best opportunity for everything to work:
  • Time to progress through birth process
  • Time to develop a bond to her new lamb
  • Be aware that her lambs might need more help to suck
  • But don’t intervene too quickly
  • Quiet and calm birth environment
  • Manage inexperienced ewe separately to older animals
Birth difficulty

Prolonged period of labour

Complicated delivery where the ewe has required manual assistance
Birth difficulty

• Assistance too early can interfere with normal course of birth and preparation for maternal behaviour; injure ewe and/or lamb

• Delays the onset of licking lamb and reduces total amount of licking by ewe

• Delays lamb standing and sucking, may also affect lamb ability to maintain temperature

• = weaker ewe-lamb bond, lamb may get less colostrum, more likely to suffer starvation and hypothermia
Birth difficulty

- 10-20% of lambs assisted or 30% ewes

- Risk factors:
  - Lamb presentation (82% incorrect presentations assisted)
  - Heavy birth weight
  - Singles - weight and presentation
  - Males
  - Breed/genetic effects, sire effects
  - No parity effect (but labour is longer in inexperienced ewes)
Effect of sire on birth difficulty

% lambs assisted

Sire identities

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement N° 727895.
Effect of ewe on birth difficulty

Frequency of delivery assistance

- Never
- Once
- More than once
- All
Management of birth difficulty

• To be avoided because:
  • time and labour issues
  • ewes and lambs more likely to die at birth
  • lambs more likely to die before weaning
• Aim for optimal rather than maximal birth weight
• Consider selection/recording sires for birth ease
  • Especially for ewes lambing for the first time
• Consider culling ewes if assisted more than once
Stress around birth

Sheep like:
• Calm, quiet and predictable environment
• Familiarity

Sheep don’t like:
• Mixing with other unfamiliar sheep
• Unpredictability e.g. at feeding
• Dogs
• Loud and extravert handling
• Novelty
Stress and ewe behaviour

• Stress during labour:
  • interrupt contractions and prolong labour
  • which can affect lamb and ewe behaviour at birth
  • increased chances of starvation and hypothermia

• Stress and disruption at birth:
  • more likely to leave birth site early
  • may interfere with transfer of attraction from birth site to lamb
  • reduce ewe licking and bonding

• Stress after birth:
  • reduce sucking frequency and duration
Managing the birth environment

• Avoid noise and minimise interventions, especially if sheep are not very familiar with handlers
• Introduce any changes gradually
• Avoid mixing groups of unfamiliar ewes close to lambing time
• Keep dogs and other animals out of the lambing environment
• Do not over stock pens and ensure plenty of feeder space to minimise fighting/pushing in
• Try to make husbandry activities routine and predictable
Ewe nutrition

Over nutrition – over fat= metabolic disorders, lambing difficulty
Undernutrition – often the main problem
Malnutrition – lack of specific nutrients (e.g. Iodine, Copper, Selenium etc)
Nutrition and ewe behaviour

• Undernutrition in pregnancy, especially in the last third of pregnancy causes:
• Loss of weight and particularly body condition
• Less licking or grooming of the lamb at birth, and fewer low-pitched bleats
• Low intake ewes more than twice as likely to show rejection behaviours
• Low intake ewes had lower scores for attachment to lambs
• Low birth weight lambs slow to stand and suck

= Increased lamb mortality
Managing ewe nutrition

• Condition score ewes (‘can’t manage what you don’t record’)
• Maintaining body condition is best – no big drops or changes
• Nutrition in the last third of pregnancy very important for good birth weights and behaviour
• Trace elements and vitamins – only beneficial to supplement if there is a deficit on your farm
Litter size

Effects on maternal behaviour?

Effects on lamb behaviour?
Litter size

• Maternal behaviour
  • Little impact on maternal behaviour
  • Ewe increases licking with each new birth
  • Ewe forms new bond with each new lamb
  • Most ewes seem to be able to count to 3!

• Lamb behaviour
  • Triplet lambs are slower to stand and suck than smaller litters, not just birth weight
  • Less likely to be regulate body temperature well
  • Poorer ability to recognise the ewe
  • Higher mortality than singles or twins
Managing larger litters

- Being prepared
- Scan for litter size
- Feed and manage for larger litter sizes
  - To avoid pregnancy toxaemia
- Triplet lambs are more susceptible to starvation, hypothermia and mismothering
  - Be aware that triplet lambs may need more care
  - Action plan to deal with surplus lambs if the ewe cannot rear them herself (hot box, extra colostrum, lamb feeder)
Breed and genetic effects
Genetic effects on ewe behaviour

• Breed effects shown for:
  • time spent at the birth site
  • amount of licking and bleating made to lambs
  • rate of aggression and lamb abandonment
  • acceptance of lamb at udder
  • maternal recognition of lamb at a distance
  • time spent close to the lamb
  • vigilance
  • response to handling of their lambs

• Sire effects on maternal behaviour also reported

• Maternal behaviour largely independent of lamb behaviours
Selecting for ewe behaviour

• Recording ewe behaviour is time consuming and impossible to do on farm
• But ewes are consistent in their behaviour from one pregnancy to the next
• Potential alternatives:
  • Maternal behaviour score (does the ewe stay close by when the lamb is handled?)
  • Proportion of lambs delivered that are reared by the ewe to weaning
  • Did the ewe need any assistance to rear lambs?
  • Scores for lamb behaviour and assistance
Inexperienced ewes need all the biological signals to work at the right time to be good mothers:
- low stress, good nutrition, time to progress, no interference from other ewes

Select for sheep that have good survival traits:
- Record!
- Cull/don’t breed from ewes that have needed birth assistance more than once
- Don’t reuse rams if their lambs have needed assistance – at birth or to suck

Give the ewe time and space to do what they need to do

Looking but not doing!