



LATE PREGNANCY AND LAMBING

Getting this stage right is critical for ensuring a healthy ewe and lambs during the busiest period of your flock calendar. Having pre-agreed protocols, and keeping a record of issues that arise, will go a long way to making subsequent lambing periods go as smoothly as possible and help reduce the stress of this period.

NUTRITION OF THE EWE

Getting ewe nutrition right affects a lamb's whole life. From 100 days of pregnancy onwards it affects foetal growth, lamb size, health and the lamb's energy (fat) levels at birth¹. Ewe lambs are still growing themselves as well as growing a foetus, so manage these as a separate group. Trace element deficiencies in ewes can also affect the new-born lamb: a cobalt deficiency can mean lambs are slower to suck and a selenium deficiency means lambs are slower to suck and more susceptible to cold, with reduced immune status. Ewe nutrition also drives colostrum supply.

THINGS TO CONSIDER¹:

- **Regular body condition scoring of ewes for grouping**
- **Forage analysis - this is usually the bulk of the diet, so it's important to know what it contributes, particularly in terms of energy and protein**
- **Formulate the ration according to energy demands in late pregnancy (singles vs twins vs triplets)**
- **Feeding type and space:**
 - 15 cm / 6" trough space per ewe of ad lib forage
 - Concentrates 45 cm / 18" trough space per ewe
 - Food should be fresh and regularly replenished to ensure ad lib access
 - Concentrates can be fed off (clean, dry) floor
 - Always ensure sufficient access to fresh, clean water

For outdoor ewes, nutrition is equally important. It can be difficult to assess nutrition from grass, so ensure to undertake body condition score (BCS) assessments regularly throughout pregnancy. It's also important to settle to lambing fields 2 weeks before the start of lambing and provide plenty of fresh clean water (beware of frost). Plan grazing for lactation (post-lambing), have a contingency plan for emergency shelter and feed, and make sure there's suitable housing for sick sheep.

To monitor if nutrition is sufficient, you can undertake metabolic profiling. Ask your vet to take blood samples 3-4 weeks before lambing, allowing time for any changes to be implemented. Make sure to sample at least 5 ewes from each feeding group (single, twin, triplet), which can test levels of beta-hydroxybutyrate, albumin, urea / nitrogen, magnesium and calcium, among others. These values reflect the adequacy of the diet in providing energy, protein and macronutrients to meet the demands of the ewe and her growing lambs.

After lambing, you are feeding for lactation, therefore manage grazing for optimum nutrition by considering sward length (target height >4 cm) and parasite control. You may need supplementary feeding if grass growth is inadequate or there's bad weather (e.g. snow). Don't forget water requirements - lactating ewes will drink much more.

LAMBING ENVIRONMENT

Sufficient space is required for all animals to lie down, move around and find shelter without touching each other if they choose, and maintain

their social hierarchy. The Code of Recommendations for the Welfare of Livestock recommends: 1.2-1.4 sq metres or 13-15 sq feet per ewe⁸. Ensure cleanliness by using plenty of fresh straw and lime in high-traffic / damp areas to minimise bacterial survival.

If lambing in individual pens, there should be at least 13 pens per 100 ewes, but you must increase for compact lambing. Fresh feed and water are essential, and pens must be clean and dry! Completely empty and disinfect any pen which contained a sick ewe or lamb or dismantle. Hygiene is key to preventing ewe and lamb disease. Ensure clean sheep by having clean bedding and potentially crutching, disinfect all lamb feeding equipment daily, and maintain a separate hospital pen(s) or shed.

Make sure there's access to the following during lambing:

- **Water (ideally hot!)**
- **Hand cleaner (e.g. chlorhexidine)**
- **Clean towels**
- **Gloves for assisted lambings, to reduce the risk of disease to the ewe, lamb and farmer**
- **Lamb feeding equipment - ensure this is sterile for new-born lambs (Milton as used for baby bottles is suitable to sterilise following cleaning)**



EWE HEALTH

Monitor for hypocalcaemia and twin lamb disease (reduced risk after metabolic profiling), prolapses, mastitis, lameness, abortion, listeriosis and call your vet if you're worried.

- **Lameness: minimise prior to housing / lambing, treat affected ewes promptly, use the MSD Lameness Control Planner**
- **Clostridial + Pasteurella booster vaccinations should be administered according to data sheet during pregnancy**
- **Plan worm and fluke treatments in discussion with your flock health advisor**

BREEDING PERIOD AND EARLY PREGNANCY INFORMATION SHEET

See the breeding period and early pregnancy information sheet for control of the two most common causes of infectious abortion using vaccination. However, there are a number of infectious causes so it's important to minimise any potential spread between ewes when abortions occur. Isolate and permanently mark the ewe, keep her separate from the flock for up to 6 weeks, put fresh dead lambs and the placenta into clean bags for diagnosis, send samples to the laboratory, and dispose of aborted material carefully. If lambing outdoors, you should disinfect the area where possible and isolate the aborted ewe ASAP. Don't foster potential replacement ewe lambs onto aborted ewes as they could pick up EAE, where present, and become carriers. You can also ask your vet to undertake blood tests to look for antibodies to the causative agents after the lambing period.

ANTIBIOTICS IN PREGNANCY

Historically antibiotics have been used annually pre-lambing to prevent abortions in ewes. This prophylactic approach is no longer acceptable, especially where effective vaccines are available^{3,4}.

NEW-BORN LAMB HEALTH

This can be affected by the mothering ability of the ewe, body condition score, health of ewe and her milk supply. A healthy ewe is much more likely to produce a healthy lamb. It's key to focus on management, hygiene and colostrum to prevent disease. Assess risk of lambs using weight: singles should be 4.5-6.0 kg, twins 3.5-4.5 kg, triplets >3.5 kg and hill lambs 1-1.5 kg less.

COLOSTRUM²

Good colostrum management is the first and best thing you can do for the new-born lamb. Colostrum contains antibodies (IgG), energy and other nutritional factors. Lambs are born without antibodies, so the ewe concentrates her own antibodies into colostrum in the 1-2 weeks prior to lambing. It's essential this colostrum is then suckled by the lamb to ensure adequate transfer of antibodies (Passive Transfer). Follow the '5 Qs' for colostrum to ensure your lambs get the best start:

1. Quickly

- For good transfer of maternal antibodies, lambs need to suckle a good volume (see below) of colostrum as quickly as possible after birth, ideally within the **first 2 hours**
- Ewe colostrum should be of the best quality (50 g IgG/litre) at lambing, but declines rapidly as the colostrum is diluted into milk
- A lamb is only able to absorb antibodies from colostrum in the first 24-36 hours: absorption is best in the first few hours after birth

2. Quantity

- Lambs should receive **50 ml/kg colostrum ASAP** - and a total of 200 ml/kg within the first 24 hours. That's a 200 ml feed for a 4 kg lamb within the first 2 hours.
- Ewe colostrum is 15% fat. At birth, lambs have a store of energy in their brown fat but this diminishes within the first 5 hours, so they require 200 ml/kg colostrum in the first 24 hours simply to keep warm

3. sQueaky clean:

- Ensure feeding tubes etc. are sterilised between uses, and keep specific tubes for new-born lambs separate to any used for older / sick lambs
- Use spotlessly clean containers for gathering and feeding colostrum
- Keep in the fridge for 2 days or freeze in small portions
- Gently defrost for use (do not microwave)
- Ensure clean udders, bedding and ewes

4. Quality

- Colostrum quality can be affected by ewe nutrition
- A Brix refractometer can be used to measure density and therefore quality
- Aim for quality of 21% or greater
- Equates to value of 50 g IgG per litre

5. Quantify:

- Ask your vet to blood-sample a proportion of lambs at 2 days old, starting early in the lambing period. They can then help you assess whether lambs are absorbing the expected level of antibodies and, if not, then assist with investigation as this is likely to lead to an increased level of disease in lambs

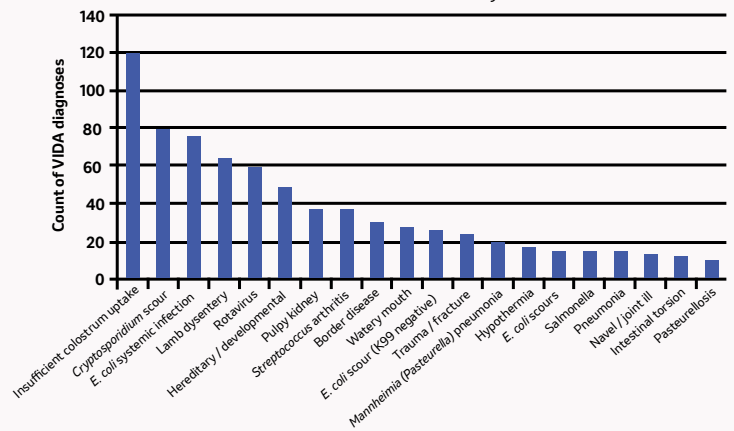
If the ewe does not have colostrum, you can milk out good-producing singles or those which lose lambs: use within 48 hours or freeze (goat's colostrum can be used but it is not as good as ewe's). Cow's colostrum can be used but 30% more is needed and there's a risk of anaemia in the lamb with repeated feeds. Artificial colostrum should be a last resort as energy and antibody levels vary massively between brands: be sure to read the label.

LAMB DISEASE

Dip the navel with 10% iodine for all indoor-born lambs, and where practical outside, to reduce the risk of bacterial infections. Hypothermia is a risk due to exposure or starvation: it's more likely outside, but can occur indoors. The normal lamb body temperature is 39-40°C. Watery mouth, scours and joint ill^{5,6} are common conditions which require prompt investigation and treatment with oral fluids and electrolytes - antibiotics and anti-inflammatories may also be required. All these common diseases can be entirely prevented or dramatically reduced by rigorous hygiene - oral antibiotics for every lamb at birth should not be relied upon.

Lambs can also be susceptible to clostridial and *Pasteurella* diseases which cause pulpy kidney, lamb dysentery, septicaemia and pneumonia - these can be controlled by ensuring ewes are fully vaccinated and colostrum provision is adequate. Orf is another common lamb condition and this can be managed by vaccination in farms previously affected by Orf.

Most common causes of mortality in lambs⁷



PROTOCOLS

Protocols are important, especially around lambing time so all procedures are undertaken in a timely and consistent manner - particularly if you have several different people working on the farm such as vet students and seasonal workers. We suggest yearly reviewed protocols for:

- **Abortion control and management**
- **Disease - ewe and lamb**
- **Lameness**
- **Lambing, when to intervene, which treatments to give**
- **Routine treatments for lambs:**
 - colostrum, vaccinations, tagging etc
- **Ewes**
 - external and internal parasites - feet - udder
- **Lambing pens / mothering up**

REFERENCES:

1. AHDB Sheep BRP Manual: Improving ewe nutrition for better returns: <https://ahdb.org.uk/knowledge-library/improving-ewe-nutrition-for-better-returns>
2. Lambing Success - Responsible Use of Antibiotics at lambing time: Fiona Lovatt, Flock Health Clubs
3. <https://www.ruma.org.uk/antimicrobials/guidelines/>
4. https://assurance.redtractor.org.uk/contentfiles/Farmers-6909.pdf?_=636578295482797498
5. Rutherford et al (2013). Proceedings of 8th International Sheep Vet Society Conference, NZ. Characteristics of flocks affected by *Strep. dysgalactiae* joint ill
6. AHDB - BRP sheep manual 14: Reducing lamb losses for better returns: <https://ahdb.org.uk/knowledge-library/reducing-lamb-losses-for-better-returns-2>
7. APHA VIDA surveillance scanning dashboard https://public.tableau.com/profile/siu.apha#!/vizhome/SheepDashboard_/Overview
8. The Code of Recommendation for the Welfare of Livestock