Reducing Infections In Newborn Lambs
Reducing infections in newborn lambs

A recent survey in Wales found that approximately 10% of lamb losses were due to infections such as watery mouth, joint ill or navel infections (HCC Lambing Project 2010/2011). At first sight, it may appear that 10% is not a particularly high figure, and that infections are not a major cause of lamb losses. However, too many farmers currently give every lamb an antibiotic at birth, either orally or by injection, to control these infections. The use of antibiotics to prevent disease is under scrutiny due to concerns about the emergence of resistant bacteria that may pose a threat to animal and potentially human health. It is possible that there will soon be regulations preventing the routine use of antibiotics in newborn lambs, so it is important that farmers implement husbandry changes that mean these antibiotics are no longer used routinely.

When levels of infection build up in lambing areas, losses can be very high. For example, in a watery mouth outbreak, up to 20% of newborn lambs can be affected, with 4 out of 5 affected lambs dying. These sorts of losses represent a major financial loss to both individual farmers, and to the industry, and the associated effect on the welfare of newborn lambs makes these avoidable losses unacceptable.

Some common infections in newborn lambs

<table>
<thead>
<tr>
<th>Disease</th>
<th>Symptoms</th>
<th>Main infectious agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watery mouth disease</td>
<td>Dull, lethargic, loss of suck reflex, excess salivation, distended abdomen.</td>
<td><em>E. coli</em></td>
</tr>
<tr>
<td>Navel infection</td>
<td>Commonly causes abscesses in the liver or peritonitis. Lambs lose condition and become gaunt and hunched.</td>
<td><em>Fusobacterium necrophorum</em> and other bacteria</td>
</tr>
<tr>
<td>Joint ill</td>
<td>Swelling, heat and pain in one or more joints. If infection is in the spine, lambs may be unable to stand.</td>
<td><em>Streptococcus dysgalactiae</em></td>
</tr>
<tr>
<td>Septicaemia and meningitis</td>
<td>Lambs a few hours to a few days old found collapsed.</td>
<td><em>E. coli</em> or <em>pasteurella species</em></td>
</tr>
<tr>
<td>Lamb dysentery</td>
<td>Sudden death in 1-3 day old lambs. Bloody diarrhoea in older lambs.</td>
<td><em>Clostridium perfringens</em> toxin</td>
</tr>
<tr>
<td>Neonatal scour</td>
<td>Diarrhoea, if severe, dehydration.</td>
<td><em>Cryptosporidias</em> rotavirus</td>
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So, what can farmers do to reduce the risk of infections in newborn lambs?

Lambs most at risk of infections are those that are small at birth, whose dams are in poor body condition, and where the environment is dirty. Conversely, if lambs are born strong and healthy, the ewe is fit, and the environment is clean, the risk of infections is much lower.

Ewe body condition at lambing, the amount of colostrum produced and the birthweight and vigour of the lamb are all dependent on things that happen long before the birth of the lamb. So, ewe management throughout pregnancy is every bit as important as husbandry at lambing in order to reduce the risk of infections.

During the first third of pregnancy, the placenta is formed. Both underfeeding and overfeeding at this time can adversely affect the development of the placenta, resulting in the birth of small lambs. Ewe lambs are particularly susceptible to the adverse effects of overfeeding in early pregnancy. If they are on too high a plane of nutrition after mating, they appear to direct nutrients to their own growth, rather than to the growth of the placenta, resulting in the birth of undersized lambs.

Ewe lambs should be at least 60% of their mature weight at mating.
Throughout pregnancy, it is important that ewe body condition score is monitored regularly. During the last 6 weeks of pregnancy, foetal growth accelerates, and the udder develops, so demands on ewes carrying multiple foetuses are very high at this time.

Appropriate feeding at this stage is vital to ensure that ewes produce healthy lambs that are born easily, and that ewes have accumulated adequate good quality colostrum at lambing. It is important that the ewes’ diet is formulated to meet requirements for both energy and protein. If energy supply is adequate, lamb birth-weight and ewe body condition score may be satisfactory but a lack of quality protein in the diet may not be immediately obvious. Protein is required for the production of antibodies and a lack of protein will result in poor antibody levels in colostrum.

Your vet can take blood samples from ewes (usually 6 or 8 twin bearing ewes) to check that the diet is meeting their energy and protein requirements. Trace elements, such as copper, cobalt, selenium and iodine are also important for the birth of strong healthy lambs. Once again, blood sampling can be used to check levels are adequate.

When lambs are born, they have almost no protective antibodies in their blood. During the first few hours after birth, the lambs’ intestines are able to absorb antibodies very well but this absorptive capacity declines rapidly, and is significantly reduced by 6 hours of age. Lambs also have a very limited supply of energy at birth and an adequate feed of colostrum in the first few hours is vital to provide the lamb with both energy and protective antibodies.

When flock outbreaks of neonatal infections such as watery mouth occur, it is useful to check whether neonatal lambs have absorbed sufficient levels of antibodies. This can be done easily and cheaply by your vet taking blood samples from a number of lambs under a week old. If antibody levels are low, this may indicate that antibody levels in the colostrum are low, or that lambs have not ingested sufficient colostrum. The level of antibodies in colostrum can be readily measured using a colostrometer, so it is possible to identify whether the problem is lack of colostrum, or colostrum quality is poor.

Colostrum should be given by stomach tube to all at risk lambs – triplets, small weak lambs, and large lambs that have had a difficult birth. Wherever possible, colostrum from the dam should be used, but colostrum from another ewe in the flock, bovine colostrum or powdered colostrum are possible alternatives.

The use of a stomach tube is invaluable for giving colostrum to at risk lambs. However, it is important to be aware that a stomach tube can spread infections between vulnerable lambs if it is not washed thoroughly in hot water between animals.

Colostrum requirements of newborn lambs

- 50ml per kg bodyweight within the first two hours of life
- 200ml per kg bodyweight in the first 24 hours

Poor body condition in ewes at lambing affects not only lamb birthweight and colostrum supply, but also the mothering behaviour of the ewe. Throughout pregnancy it is important to investigate and act if ewe body condition falls below target. Parasites such as fluke or haemonchus are particularly damaging in late pregnancy when the demands on the ewe are greatest. If these diseases are present in a flock, ewes may produce small lambs and have poor colostrum accumulation even if nutrition is adequate. Both liver fluke and haemonchus are becoming increasingly common, and it is important to work with your vet to monitor for these diseases and to implement appropriate control programmes. Other common conditions such as footrot will also cause ewes to be in poor body condition and predispose to infections in their lambs.

Vaccinating ewes with clostridial and pasteurella vaccines protects the health of the ewe. Giving a booster dose pre-lambing boosts antibody levels in colostrum, providing protection for the lamb.
Environment

At lambing time, every effort should be made to ensure lambs are born into a clean environment. The navel of the newborn lamb provides an easy route for infections to enter the body. To prevent this, lambs born inside should have their navels dipped in 10% iodine as soon as they have been licked dry by the ewe, and again 2 to 4 hours later. Infections also gain entry to the body orally, passing into the gut in the case of watery mouth, or through the tonsils to enter the bloodstream. Ensuring that the udder and fleece of the ewe are clean will help to reduce the risk of lambs ingesting infections when searching for the teat.

Infections that enter through the mouth and into the gut include E.coli (resulting in watery mouth), rotavirus and cryptosporidia, which both cause scouring. All these infections are most prevalent in environments contaminated with faeces, so keeping pens well bedded with clean dry bedding reduces the risk of infection. Lambs infected with rotavirus or cryptosporidia will be passing out massive numbers of infective agents in their faeces, increasing the challenge for lambs yet to be born, so isolating sick lambs in a hospital area is an important part of control in a disease outbreak.

Infections that get into the bloodstream can settle out in many sites (e.g. brain, liver, lungs, joints). These infections usually enter the body in the first few days of life, but may not become apparent for several days or even weeks. Lambs with internal infections fail to grow normally, become gaunt and hunched, and usually die within a few weeks. It is not always apparent that these losses are due to the fact that the lamb did not ingest sufficientcolostrum in the first critical hours of life.

It is important to avoid any stressful procedures such as applying rubber rings for castrating or tailing within the first 24 hours of life, as this may interfere with the lambs ingesting sufficientcolostrum. Care should also be taken with tagging newborn lambs; both to avoid stress, and to prevent introducing infection with the tag. Swabbing the ear and the tag with surgical spirit prior to application will help to reduce the risk. Rubber rings should also be applied direct from the box, not kept in a pocket prior to application.

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Checklist for reducing infections in newborn lambs

- Are the ewes at the target body condition score throughout pregnancy?
- Are ewes scanned so that they can be grouped according to their feed requirements?
- Is the late pregnancy diet formulated to meet the ewes' requirements?
- Are monitoring programmes in place for parasitic diseases such as liver fluke?
- Are blood samples taken to check that late pregnancy feeding is meeting requirements of multiple bearing ewes?
- Are ewes kept clean and tailed if necessary?
- Is the bedding kept clean and dry?
- Are ewes lambing outside provided with sufficient shelter, and stocked at a rate that minimises the risk of mis-mothering?
- Are the navels of all lambs born indoors dipped in 10% iodine shortly after birth and again 2-4 hours later?
- Are lambs that are at risk of not taking sufficientcolostrum (e.g. triplets or lambs that have had a difficult birth) fedcolostrum by stomach tube shortly after birth?
- In indoor lambing flocks, is the udder of each ewe checked as ewes are moved to individual pens?
- Is there a hospital area to isolate ewes with sick lambs?
- Are stomach tubes washed in hot water every time they are used?
- Are ewes disturbed as little as possible to encourage them to mother and bond with their lambs?
- Do freshly lambed ewes always have a supply of clean, fresh water and high quality forage?
- Are rubber rings only applied when the lambs are over 24 hours old?
- If newborn lambs are tagged, are the tags and ears swabbed with surgical spirit prior to tagging?
- If problems occur, is the vet called in promptly to minimize further losses?
Contact

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