



Increasing Your Lamb Crop Series

Reduce Lamb Loss

Introduction

Most sheep producers strive to reduce lamb crop mortality associated with late gestation and newborn lambs. Some consistently keep losses between 5 to 10%, while others in a similar production system are 15% or greater year after year. Sheep respond to management more than any other domestic specie, which is apparent during the critical periods that effect lamb mortality. Keeping detailed flock records during lambing season can document the sources of lamb mortality.

The most important step to reduce lamb mortality is to evaluate key production records from current and past lambing seasons. The key benchmarks to monitor are:

Pre-Lambing to Late Gestation (last 6 weeks)

- Percent abortion rate
- Percent pregnant ewe death loss
- Percent pre-term stillborn lambs

Post-Lambing to Newborn Lambs (0-2 weeks)

- Percent lamb crop born per ewe lambing
- Percent full-term stillborn
- Percent newborn lamb mortality

Pre-lambing to late gestation (last 6 weeks)

Preventative flock health care and a sound nutrition management plan promote higher lamb vigor and increased lamb survivability, and reduce pregnant ewe death. Based on data collected on lamb mortality, stillborn births often account for 25% of losses that occur at or near the time of lambing. Stillborn mortality can be divided into two categories: pre-term and full-term delivery.

Pre-term stillborn: In many flocks, the majority of pre-term losses are associated with abortion diseases. The top three abortion diseases include: *Campylobacter*, *Chlamydia*, and *Toxoplasmosis*. In most flocks, the incidence of pre-term delivery associated with natural causes, non-bacterial, is expected to be 2 to 4%. When exceeding this threshold, producers are advised to contact a veterinarian to submit fetal and placental tissues

to a diagnostic laboratory in order to identify the cause of the abortions. Preventing abortions is a high priority in sheep flocks. If diagnostic results identify infectious agents, then appropriate management steps can be adopted to reduce lamb mortality.

Pregnancy toxemia (ketosis) is a common nutritional disorder in sheep, generally associated with undernourished and over-conditioned ewes carrying multiple lambs, resulting in stillborn lambs and potentially ewe death. For a gestating ewe with adequate body condition carrying twin lambs, her nutritional needs can be met with good quality forage and supplemental energy (grain) equivalent to 3% of her body weight. Plane of nutrition during this period is very important to maintain a healthy pregnancy and result in sufficient fat reserves to support lactation.

Full-term stillborn: For full-term stillborn mortality, both nutrition and health are important, along with lamb delivery abnormalities. A full-term stillborn delivered in a litter of triplets or resulting from a backward presentation at birth are common. However, if entire lamb litters arrive stillborn, or there is a stillborn along with low vigor litter mates, contact a veterinarian for a diagnosis.



Photo by Lisa Surber

Successful sheep operations develop and follow a lambing management plan focused on reduced lamb mortality.

► Post-lambing to newborn lambs (0-2 weeks)

The majority (up to 80%) of all lamb crop mortality (including full-term stillborn) occurs in newborn lambs under 2 weeks of age. For live newborn lambs, the primary causes of mortality can differ by the type of production system. In production systems using a shed lambing facility, the primary challenges to newborn lambs are starvation and hypothermia, as well as respiratory diseases, scours and injury. Lambs born in pasture or range lambing systems are threatened by weather conditions and predators.

The most successful sheep operations develop and follow a lambing management plan focused on reducing lamb mortality. Whether lambing occurs in a building or on pasture, management can make a difference on the percent lamb crop reared. For pasture lambing, choosing a lambing time that has more favorable weather and utilizing predator management tools could be the key steps in reducing lamb mortality. For shed lambing, management has a greater opportunity to evaluate and take action on newborn lambs at risk of starvation and experiencing hypothermia. However, for all types of sheep production systems, the key to reducing newborn lamb mortality starts with proper nutrition and health management of the ewe flock during gestation.

Lambs born with low vigor are especially susceptible to hypothermia, more prone to injury, and eventually starvation. Lambs are born with a special source of high-energy fat called “brown fat” deposited on the heart and kidneys. The energy boost from brown fat is expected to last for at least 6 hours following birth. Those born with low vigor likely have poor brown fat stores. Low vigor lambs fall into the hypothermia classification quickly after birth even in an optimal lambing environment.

► Causes of newborn lamb mortality

Starvation: Ewe milk is the sole source of nutrients for a newborn lamb, and if not available in adequate quantities to maintain and promote weight gain, the lamb will rely on its limited body reserves. Identifying whether a lamb is receiving adequate mother’s milk is important to limit lamb mortality. The ewe’s ability to feed lambs should be evaluated. Lambs should be full and ample capacity should remain in the udder. If lambs are constantly suckling, it is a clear sign that milk capacity is limited.

The opportunity to intervene and rear lambs artificially with milk replacer is limited in a pasture and range lambing system. The ewe’s ability to supply newborns with colostrum and milk without human intervention is paramount. Selecting flock replacements with excellent maternal traits, including milk production, are critical to reducing newborn loss due to starvation.

A common challenge in the U.S. sheep industry is “hard bag,” a non-mastitis condition that severely limits or renders the udder completely nonfunctional. Hard bag associated with ovine progressive pneumonia (OPP) has been a chronic problem in the industry; it is common to find a 10% to 15% incidence in flocks. Genetic screening technology for OPP resistance has been developed and adoption of this technology is expected to sharply reduce the incidence of the hard bag condition in ewes.

Hypothermia: Hypothermia can occur in any lambing system when the thermal regulatory capacity of the wet newborn lamb is overwhelmed. To determine whether a lamb is hypothermic, its temperature must be checked with an animal thermometer; normal body temperature is 102.5° F. Too often producers rush to supplement colostrum to hypothermic lambs resulting in death due to anaphylactic shock. Many techniques can be used to recover a hypothermic lamb; the use of artificial heat and the inter-peritoneal administration of a warm dextrose solution into the abdominal cavity to supply an immediate energy boost. To provide artificial heat, a warming barrel can be installed in a lambing pen. When the lamb’s mouth is warm, it is safe to administer 4 ounces of colostrum.



A lamb warming barrel provides artificial heat and can be installed in a lambing jug. Learn how to make your own by viewing South Dakota State University’s iGrow YouTube channel: <https://www.youtube.com/watch?v=Nr6agIDpwTO>

Predation: Wildlife, especially coyotes, prey on sheep flocks in any type of management system and geographical location in the United States. However, young suckling lambs in grazing systems with extensively managed operations are the most vulnerable. Many resources are employed to protect lambs and adult ewes from predation including state or federal animal damage control professionals, improved fencing, and the use of guard animals. Guard dogs, donkeys or llamas are often used to ward off predators.

Lamb Resource Center



The Lamb Resource Center is your one-stop shop for industry resources and information. Visit www.LambResourceCenter.com to learn more.

Reduce lamb loss in a lambing facility

RECOMMENDATIONS FOR IMPROVEMENT

Well-designed facilities and attentive management during lambing time can improve newborn lamb survival. The following recommendations should be considered to improve the care and well-being of newborn lambs.

Temperature and ventilation: The location of the receiving pen and lambing jugs/pens should be temperature controlled at 35 to 40° F. Natural or mechanically supported ventilation is important to maintain temperature and reduce the moisture in the facility housing the newborns. These actions reduce the incidence of common causes of newborn lamb mortality including hypothermia, respiratory diseases and scours.

Drop pen: Allowing ewes to deliver lamb(s) in designated receiving pens with familiar surroundings will reduce stress. Ewes should complete the lambing process before moving to a lambing jug/pen, unless environmental conditions require sooner action. Teats should be stripped at this time to remove the wax plug and to evaluate milk production. Afterbirth material should be properly disposed to minimize disease transfer.

Lambing jugs: Jugs/pens should be a minimum of 5' x 5' or 6' x 6' for larger framed ewes. Immediately after the ewe is brought into the lambing jug, the lamb's navel is clipped to about one inch and dipped with strong iodine (7%). Teats should be stripped to ensure the lamb can suckle colostrum and that no udder dysfunction exists. Supplemental Vitamin E can be given to newborn lambs using an oral or injectable product.

Colostrum intake: Nothing is more important following lambing than a lamb's consumption of the ewe's colostrum or "first milk." This liquid is extremely nutritious with high levels of fat, but most importantly, it contains critical antibodies that enable lambs' immune systems to function properly. Absorption of antibodies by the lamb gut declines to less than 50% capacity at 12 hours. If administered using a lamb saver tube, it is recommended to deliver 0.5 ounces per pound of body weight, generally 4 to 8 ounces per feeding, and repeated every 4 to 6 hours until the lamb suckles voluntarily. By 24 hours, a 10-pound lamb should have consumed 20 to 30 ounces of colostrum.

Photo by Lisa Straber



Nothing is more important following lambing than a lamb's consumption of the ewe's colostrum or "first milk."

Colostrum shortage is common. Supplements have been shown to be helpful but the source from a ewe is preferred. At least 4 to 6 ounces of ewe colostrum should be given to newborns before relying on milk replacer or other milk based supplements. Hypothermic lambs must be warmed to normal body temperature (102.5° F) before delivery of colostrum to avoid anaphylactic shock.

Lamb saver tube competency: Using this device will save more newborn lambs and valuable time than any other consideration or investment during lambing season.

Daily health observation routine: Lambs must be observed every 2 to 3 hours for general health, vigor, and to evaluate ability to suckle. Lambs may require assistance with suckling. The use of a lamb saver tube can be implemented and repeated every 4 hours until lambs succeed without shepherd intervention. If lambs show signs of scouring or dehydration, e.g., hunched up, gaunt, loss of vigor, a veterinarian should be consulted. Ewes should be offered good quality forage and an increasing amount of supplemental grain. A good appetite and observed cud-chewing are positive signals on her health status.

Wet grafting adoption: Grafting, or fostering, is the transfer of a lamb from one ewe to another ewe that is not its mother. Adoption to a ewe with adequate milk is most successful at delivery. This practice is implemented with triplet born lamb transferred to a ewe without a lamb or a fresh born single.

Artificial rearing: Evaluation of the ewes' ability to supply adequate milk is important. Decisions on artificial rearing lambs using lamb milk replacer should be done in the first 24 hours. The automated commercial lamb milk replacer delivery technology (for example, Lac-Tek or Nursotek) have made artificial rearing an easy choice resulting in lower lamb loss.

Bonding time: The ewe and lamb(s) should remain in a jug for a minimum of 48 hours, if space allows, to create a necessary bond. Once the

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Reduce lamb loss in a lambing facility (cont.)

pair has bonded, they can be moved to a community pen with no more than 10 ewe-lamb pairs. Gradually, the number of pairs can increase until a lactating group reaches 25 to 35 ewes, while ensuring at least 25 square feet per pair. Lambs showing weakness or illness should be held back.

Identification: Individual identification ear tagging and paint-branding (optional) for the ewe and her offspring is an important component in reducing lamb mortality especially in the case of starvation. Paint branding both the ewe and her offspring is a common practice to aid in health observations especially when the ewe and her lamb(s) reach the community pens. The entire family gets the same paint brand number on both sides of their bodies. Industry adoption of electronic identification based on radio frequency identification (RFID) technology offers an upgrade in tracking ewe and lamb pairs.

Recording lambing data: A lambing notebook is a permanent treasure of information on the lambing season and serves as the template to make improvements in future lambing seasons. It is always better to have too much written information than not enough. Recommendations of record information to collect:

- Ewe and lamb(s) paint brand or ear tag numbers
- Date and time of birth
- Any assistance given
- Any problems with the lamb(s) or the ewe
- Any treatment given
- Any special needs
- Mothering ability score
- Lamb vigor score
- Lamb losses with any information available, include a suspected cause of death

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More information

U.S. Lamb Resource Center

<http://lambresourcecenter.com/production-resources/productivity/>

National Sheep Improvement Program

<http://www.nsip.org>

U.S. Sheep Industry Roadmap

<http://lambresourcecenter.com/reports-studies/roadmap/>



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