



Reducing Mortality in Sheep: Practical Strategies for Better Survival

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Abstract

Sheep farming plays a vital role in the livelihood security of rural households, particularly small and marginal farmers. However, high mortality, especially among lambs, remains a serious constraint affecting productivity and profitability. Mortality in sheep occurs due to a combination of factors such as neonatal complications, infectious diseases, poor nutrition, environmental stress, and inadequate management practices. Among these, neonatal mortality during the first few weeks of life contributes the largest share of losses. This article discusses the major causes of mortality in sheep and provides practical, field-level strategies to reduce losses. Emphasis is given to early lamb care, proper nutrition of pregnant ewes, disease prevention through vaccination and deworming, improved housing, and scientific flock management. The importance of awareness, timely veterinary care, and adoption of simple, low-cost interventions is also highlighted. By following these practical strategies, farmers can significantly improve survival rates, enhance productivity, and increase their income from sheep farming.

Keywords: Sheep mortality, Neonatal mortality, Sheep diseases, Colostrum feeding, Vaccination, Deworming

1. Introduction

Sheep farming is a vital component of the livestock sector, particularly for small and marginal farmers, as it provides regular income, employment, and nutritional security. The profitability of sheep farming largely depends not only on flock size but also on the survival rate of animals, especially lambs. Higher survival ensures more animals reach marketable age, directly contributing to increased meat production and income generation. However, high mortality in sheep remains a serious field-level constraint, limiting the full potential of this enterprise. A significant proportion of losses occurs during the neonatal period (first few weeks of life) due to factors such as poor management, inadequate nutrition, disease incidence, and

environmental stress. These losses reduce flock growth, increase replacement costs, and ultimately affect the economic viability of sheep farming. Therefore, improving survival through better management practices is essential for enhancing productivity, reducing economic losses, and ensuring sustainable sheep farming.

2. Causes of Mortality in Sheep

Mortality in sheep is influenced by a combination of biological, environmental, and management-related factors. Understanding these causes is essential for designing effective strategies to improve survival and productivity.

Neonatal Mortality (Birth to 1 Month)

- This is the most critical period, with the highest risk of death
- Major causes include low birth weight, starvation (lack of colostrum), hypothermia, and infections
- Most deaths occur within the first week of life, highlighting the importance of immediate care

Diseases (Infectious and Parasitic)

- Infectious diseases such as PPR, enterotoxaemia, and pneumonia are major contributors
- Parasitic infestations (worms, ticks, mites) weaken animals and reduce immunity
- Poor vaccination and irregular deworming increase susceptibility to diseases

Malnutrition and Poor Management

- Inadequate feeding of pregnant ewes leads to weak and underweight lambs
- Poor milk availability results in starvation and reduced immunity
- Lack of proper supervision, hygiene, and timely care further increases mortality

Environmental Stress (Heat, Cold, Rain)

- Extreme weather conditions cause heat stress or hypothermia, especially in lambs
- Exposure to rain and damp conditions promotes disease occurrence
- Poor housing and lack of shelter aggravate environmental stress

3. Neonatal Mortality in Lambs

Neonatal mortality, occurring from birth to one month of age, is the most vulnerable and decisive phase in sheep production. A large proportion of lamb deaths take place during the first 7 days after birth, making this period critical for survival and future productivity. Effective management during this stage can significantly reduce overall flock mortality.

Major Causes of Neonatal Mortality

- **Low Birth Weight:** Lambs born weak due to poor maternal nutrition have low vitality and reduced resistance to environmental stress and diseases

- **Starvation:**
Failure to receive adequate colostrum and milk leads to energy deficiency and weak immunity
- **Hypothermia:**
Exposure to cold, wind, or wet conditions causes loss of body heat, especially in newborn lambs
- **Infections:**
Entry of pathogens through the navel cord or unhygienic surroundings leads to septicemia and early death

Importance of Early Care

- Immediate care after birth ensures better survival and adaptation of lambs
- Early colostrum feeding provides essential antibodies, protecting against infections
- Proper drying and shelter prevent cold stress and hypothermia
- Navel disinfection reduces the risk of bacterial infections
- Close monitoring helps in timely intervention for weak or twin lambs

4. Care at Birth and Early Life Management

Proper care at birth and during the early life of lambs is the most effective and low-cost strategy to reduce mortality. Since newborn lambs are highly vulnerable, timely attention within the first few hours plays a decisive role in their survival, growth, and future productivity.

Immediate Cleaning and Drying of Lamb

- Remove mucus from the nose and mouth to ensure proper breathing
- Thoroughly dry the lamb using a clean cloth or allow the ewe to lick it
- Drying helps prevent heat loss and hypothermia, especially in cold conditions

Colostrum Feeding within First Few Hours

- Ensure lamb receives colostrum within 1-2 hours of birth
- Colostrum provides essential antibodies (passive immunity) and energy
- Weak lambs should be assisted in suckling or fed manually if needed

Navel Cord Disinfection

- Cut the navel cord (if required) with a clean, sterilized instrument
- Dip the navel in antiseptic solution (e.g., iodine) to prevent infection
- This practice reduces the risk of **navel ill and septicemia**

Protection from Cold and Predators

- Provide warm, dry bedding and shelter to avoid cold stress
- Protect lambs from rain, wind, and sudden temperature changes

- Ensure safety from predators such as dogs or wild animals

5. Nutritional Management for Survival

Nutrition is a key determinant of lamb survival and overall flock productivity. Proper feeding, especially during late pregnancy and early life, directly influences birth weight, immunity, and growth of lambs. Inadequate nutrition is one of the major underlying causes of mortality in sheep.

Proper Feeding of Pregnant Ewes

- Provide a balanced ration during the last trimester, as most fetal growth occurs in this period
- Ensure adequate supply of energy, protein, minerals, and vitamins
- Supplement with green fodder and concentrates to avoid low birth weight lambs
- Proper nutrition improves milk production and maternal care

Adequate Milk Supply for Lambs

- Ensure lambs receive sufficient milk from the dam, especially during the first few weeks
- Monitor lambs for regular suckling and growth
- In case of multiple births or weak ewes, ensure additional feeding support
- Adequate milk intake enhances immunity and survival rate

Supplementary Feeding for Weak Lambs

- Weak or orphan lambs should be provided artificial feeding (milk replacer or diluted animal milk)
- Introduce creep feeding (concentrate mixture) after 2–3 weeks of age
- Provide easily digestible and nutrient-rich feed to support growth
- Timely supplementation prevents starvation and improves survival chances

6. Disease Prevention and Health Care

Effective disease prevention and health care are essential to reduce mortality and maintain a healthy and productive flock. Most disease-related losses in sheep can be minimized through timely vaccination, regular deworming, and early treatment.

Vaccination Schedule

- Follow a regular vaccination programme to protect against major diseases
- Key vaccines include:
 - **PPR (Peste des Petits Ruminants)**
 - **Enterotoxaemia**
 - **Sheep pox** (in endemic areas)

- Vaccination should be done at the recommended age and season, preferably before disease outbreaks
- Maintain proper records of vaccination for each animal

Deworming Practices

- Internal parasites (worms) are a major cause of poor growth and mortality, especially in lambs
- Deworm sheep at regular intervals (every 3–4 months) or based on veterinary advice
- Rotate anthelmintics to avoid drug resistance
- Maintain clean grazing areas to reduce parasite load

Control of Common Diseases

- **Enterotoxaemia:** Prevent through vaccination and proper feeding management
- **PPR:** Highly contagious; controlled mainly through timely vaccination
- **Pneumonia:** Prevent by providing proper housing, ventilation, and protection from cold stress
- Early detection and prompt treatment are critical to reduce mortality and spread of infection

7. Housing and Environmental Management

Proper housing and environmental management are essential for protecting sheep from stress and diseases, thereby reducing mortality. Sheep are highly sensitive to extreme climatic conditions, and inadequate shelter often leads to health problems, especially in lambs.

Protection from Extreme Weather

- Provide shelter against heat, cold, rain, and strong winds
- Protect newborn lambs from cold stress and hypothermia, particularly during winter
- During summer, ensure shade and cooling arrangements to prevent heat stress
- Avoid exposure to wet and muddy conditions, which increase disease risk

Clean and Dry Shelter

- Sheep sheds should be clean, dry, and free from dampness
- Regular removal of dung and urine helps in reducing microbial load and foul odor
- Proper drainage should be maintained to prevent water stagnation
- Dry bedding should be provided, especially for lambs

Proper Ventilation

- Ensure adequate airflow to avoid accumulation of moisture, gases, and pathogens
- Well-ventilated sheds help in preventing respiratory diseases like pneumonia
- Avoid overcrowding, which restricts airflow and increases stress

8. Flock Management Practices

Efficient flock management is essential for minimizing mortality and ensuring the overall health and productivity of sheep. Proper organization of the flock allows for targeted care, better feeding, and effective disease control, especially in vulnerable groups like lambs and sick animals.

Separation of Weak and Sick Animals

- Weak, diseased or injured animals should be immediately isolated from the main flock
- Isolation helps in preventing the spread of infectious diseases
- Allows for special care, treatment, and monitoring of affected animals
- Reduces competition for feed, ensuring better recovery

Avoid Overcrowding

- Maintain adequate space per animal to reduce stress and competition
- Overcrowding increases the risk of disease transmission and injuries
- Proper spacing improves feeding efficiency and comfort
- Helps maintain better hygiene and ventilation within the shed

Proper Grouping

- Group animals based on age, size, and physiological condition
- Separate groups such as lambs, pregnant ewes, lactating ewes, and breeding rams
- Ensures uniform feeding and management practices
- Facilitates better monitoring and reduces management difficulties

9. Common Field-Level Constraints

Despite the availability of proven practices to reduce mortality in sheep, their adoption at the farm level is often limited due to several practical constraints. These challenges hinder effective management and lead to avoidable losses.

Lack of Awareness

- Many farmers are unaware of scientific management practices, especially neonatal care and disease prevention
- Limited knowledge about the importance of colostrum feeding, vaccination, and hygiene
- Poor understanding of early disease symptoms leads to delayed intervention

Poor Veterinary Access

- Inadequate availability of veterinary services in remote areas
- Delay in diagnosis and treatment increases the risk of mortality
- Limited access to vaccines, medicines, and technical guidance

- Emergency care during lambing is often not available

Traditional Practices

- Continued reliance on age-old methods without scientific validation
- Resistance to adopting improved technologies and practices
- Misconceptions related to feeding, health care, and breeding
- Lack of record keeping and systematic management

10. Strategies to Reduce Mortality

Reducing mortality in sheep requires a combination of awareness, timely interventions, and adoption of scientific management practices. Most losses can be minimized through simple, low-cost measures when farmers are properly informed and supported.

Awareness and Training Programmes

- Conduct farmer training and extension programmes on key aspects like neonatal care, feeding, and disease prevention
- Use demonstrations, field days, and success stories to promote practical learning
- Improve knowledge about early warning signs of diseases and proper management practices
- Strengthen linkages between farmers and extension agencies for continuous guidance

Timely Veterinary Care

- Ensure access to regular veterinary check-ups and advisory services
- Immediate treatment of sick animals to prevent complications and death
- Follow scheduled vaccination and deworming programmes
- Availability of emergency care during lambing and disease outbreaks

Adoption of Scientific Practices

- Practice colostrum feeding, proper nutrition, and hygiene
- Maintain clean housing and follow biosecurity measures
- Implement record keeping and animal identification for better monitoring
- Adopt improved tools and technologies for efficient flock management

11. Conclusion

Reducing mortality in sheep is directly linked to increasing farm profitability and sustainability. Every lamb saved contributes to higher flock size, better production, and improved income, making mortality reduction a key priority in sheep farming. High mortality, particularly during the neonatal stage, leads to significant economic losses that can otherwise be prevented through proper management. Most causes of mortality are manageable through simple, low-cost, and timely interventions such as early lamb care, colostrum feeding, proper

nutrition, disease prevention, and adequate housing. These practices do not require heavy investment but depend on awareness, regular monitoring, and prompt action. Therefore, emphasis should be placed on adopting practical and scientific management practices at the field level. With improved knowledge, better veterinary support, and consistent application of these measures, farmers can significantly enhance survival rates, productivity, and overall profitability of sheep farming.