



SheepSense

an applied research brief

Vaccinations for Late Gestation

Key Points

- Vaccines administered to the dam before lambing are more effective than if given to newborn lambs.
- Bacterial infections, especially from *Clostridium* bacteria, pose a high risk for newborn lambs
- Vaccinating pregnant ewes 2-4 weeks prior to lambing helps boost lamb survival through passive immunity.
- Vaccinate bred ewes with a minimum of C+D vaccine.

Lambing is a stressful time of year both for sheep, and the shepherds who care for them. Newborn lambs often arrive with weak immune systems and are rapidly exposed to bacteria that can cause severe illness or death within a few days or weeks. Significant losses can occur if bacterial outbreaks are left undiagnosed and untreated.

Colostrum: Essential for Antibody Transfer

Many lamb illnesses and death within the first few weeks of life are caused by an infection from *Clostridium perfringens* types C&D, *Clostridium tetani* (Tetanus), or *Escherichia coli* (E. coli.). Lambs rely on passive immunity from the dam, through colostrum, to build their resistance to diseases. The first hours of life are critical for this transfer of antibodies through colostrum. The intestines of the newborn lamb do not allow antibodies to pass freely to the bloodstream after 24 hours. Lambs should consume approximately five percent of their bodyweight in

colostrum within 12 hours of birth, if possible. For instance, a 10-pound lamb should consume 8 fluid ounces. Vaccinating gestating ewes within the four weeks prior to lambing can drastically improve the number of antibodies that lambs receive and greatly reduce the incidence of lamb illness for 30-60 days after lambing.

Lambs Need Colostrum

**5% of their
Body Weight**



Clostridial Diseases

C. Perfringens types C&D cause the disease known as enterotoxemia or over-eating disease. These bacteria are spore-forming and live in anaerobic environments (deprived of oxygen). The spores can remain viable despite boiling temperatures, excessive drying, and even survive exposure to some disinfectants. They occur in small numbers in the intestinal tract of animals; however, when conditions favor rapid multiplication and increased toxin production, problems usually result.

If lambs that were otherwise healthy start showing signs of abdominal pain (hunched over, kicking at their belly, or bleating), it is likely that they have enterotoxemia. Infected lambs may have bloody looking scours (diarrhea), but this is not always the case. If observed within the first 2-3 days of birth, bloody scours may be caused by an *E. coli* infection, and not *C. perfringens*.

Since enterotoxemia is rapidly onset, and death can occur within a few hours, treatment is usually not successful. An injection of antitoxin can help if administered early in the course of the disease. Possible infections can be confirmed by a necropsy performed by a veterinarian.

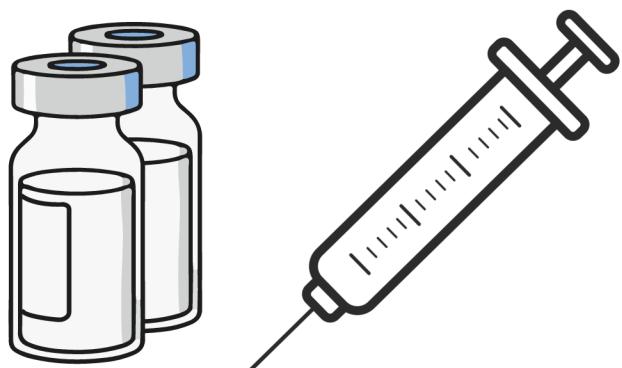
The best prevention method is to vaccinate ewes before lambing, so the dam can pass antibodies to the lambs through colostrum. Isolating infected animals and following appropriate sanitation measures around lambing can also limit the impact on the rest of the flock.

Tetanus

Clostridium tetani is the bacteria that causes tetanus. Tetanus is not directly communicable between animals, but spores can be shed from one animal and transferred to another new host via soil or manure. Infections typically only occur where the skin is injured or damaged. Potential sites of infection could be at the navel, at a tail dock, or as small as an insect bite. If protected from sunlight, the spores can remain viable for over a year.

Infections target the central nervous system and cause extended muscular spasms or stiffening. The tightening of the jaw muscles cause what is commonly known as “lockjaw”. Death usually results from failure to eat, respiratory muscles becoming paralyzed, or from regurgitated food entering the airways. Death usually occurs within 3-5 days of clinical signs appearing, and these may not be observed until 5-14 days after the wound was exposed to *C. tetani* spores.

The vaccination of ewes in late gestation is the best method of preventing tetanus infections in susceptible lambs. Ewes that have not been previously vaccinated for tetanus should receive two doses, spaced 3-6 weeks apart, with an annual booster around lambing. Consult a veterinarian about vaccinating for tetanus.



***E. coli* Infections**

Escherichia coli causes an infection of the bloodstream and scours in lambs. It is sometimes referred to as Watery Mouth Disease or Rattle Belly. Infections can result from lambs being exposed to soil, wool, or the udder of ewes contaminated with the bacteria. *E. coli* infections progress rapidly, and can cause depression, dehydration, and death within 24-72 hours after birth. Lambs may express signs such as excessive drooling or make a “rattle” noise in their belly when picked up.

If a healthy lamb rapidly declines and dies from no apparent cause, consult a veterinarian for a necropsy to identify the cause of death, and thoroughly sanitize the area. Do not put soiled bedding where other animals can access it to reduce the risk of infection.

While scours are often a telltale sign of *E. coli* infections, some animals may not display scours prior to death. Some antibiotics may be effective in treating infections, if given at the correct time; however, this window is so short that antibiotics rarely prove useful. Crutching or shearing ewes before lambing, administering a late-gestation vaccine, and practicing good sanitation measures are highly effective means of preventing an outbreak.

Prevention is Key

Newborn lambs have weak immune systems, putting them at high risk for bacterial infections within the first few weeks of life. The most economical and effective method of disease prevention is to vaccinate gestating ewes 2-4 weeks before lambing. Shearing or crutching of ewes within a month of lambing provides an excellent opportunity to administer vaccines. Treating ewes with a bacterial toxoid (inactivated toxin) vaccine allows for better antibody production and passive immunity transfer than vaccinating young lambs.

If lambs are orphaned or rejected by the ewe, supplemental colostrum should be supplied if possible. Consult a veterinarian for advice on vaccine selection, timing, and administration. Developing and following a good flock health plan can help reduce stress around lambing and increase the number of lambs that reach weaning and market.



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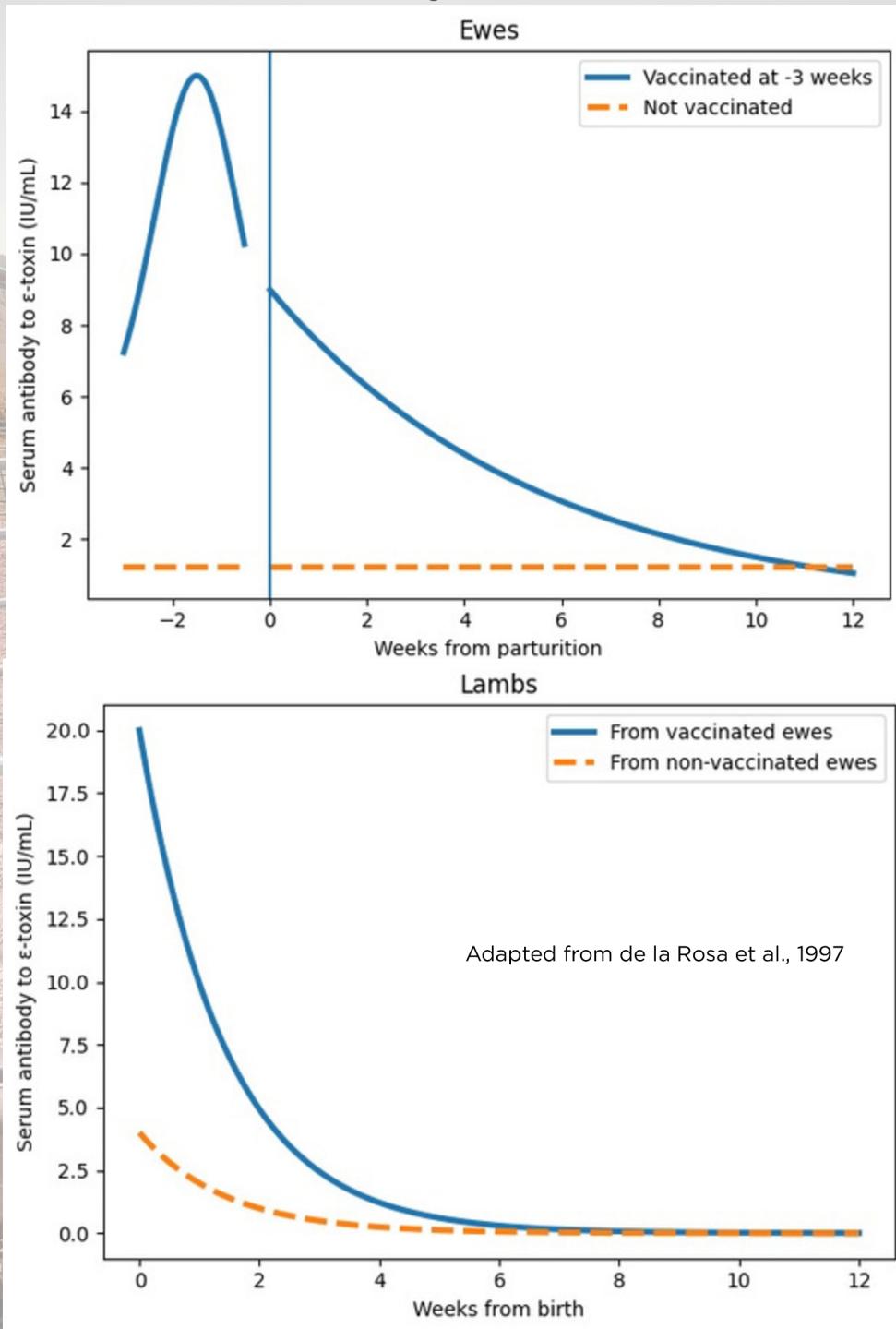
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Lambs born to vaccinated ewes show higher immune activity at birth



This brief was created by UWyo Sheep Task Force, 26.3

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Sources:

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