

Causes of Abortion in Ewes and Does  
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Abortion: expulsion of fetus before the normal end of pregnancy  
: lambs may be dead or born alive (premature)

What to do when abortions occur:

1. Assume that abortion is infectious in nature
2. Isolate aborted ewes, identify
3. Remove aborted lambs and after births, either bury or burn
4. Remove bedding, apply lime to contaminated area
5. Wear rubber or plastic gloves, Wash hands thoroughly
6. Contact health professional
7. Place the fetus and membranes in a plastic bag and send to lab immediately

Discovery of cause

1. Over 50% of the samples sent to lab yield no results
2. Samples contaminated with bedding
3. Decomposition
4. Insufficient material submitted - need to submit placenta and fetus
5. Wrong samples submitted
6. Abortion caused by something other than the infectious agent screened for.

What to collect for the veterinarian

1. Management practices, feeding practices, housing, pre-lambing procedures
2. Source of female replacements
3. History of previous abortions, lambings and lambing percentages
4. Vaccination history
5. Prediction of start and end of the lambing season
6. Stage of pregnancy when abortion occurred
7. Health status of ewes

What to send to the lab

1. Fetus and placenta
  - submit the whole thing
  - keep chilled but do **not** freeze
  - submit in a leak proof container
  - submit as quickly as possible

2. Serum from ewes and does

- collect a blood sample from all aborting ewes and a sample of still pregnant ewes and does.
- Collect sample and then rebleed about 3 weeks later.
- Separate blood clot from serum and freeze serum
- Submit the two samples together

Blood from ewes and does

- collect in a purple top tube (EDTA)
- Selenium levels and virus isolation

3. If you can't submit the whole fetus immediately

Collect the following and chill

- fluid from the chest cavity – sterile syringe and needle
- fluid from the stomach
- cotyledons – buttons on the afterbirth

Collect the following in 10% formalin

- liver, lung, kidney, stomach, small intestine, lymph nodes, spleen, adrenal glands, cotyledon and brain

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### **Enzootic Abortion of Ewes, Chlamydial Abortion**

Agent: Chlamydia abortus (Chlamydia psittaci)

#### Clinical signs

1. Occurs in the last month of gestation
2. May see premature, dead, weak or healthy lambs and kids
3. Ewes and does do not exhibit signs prior to aborting

#### Transmission

1. Ewes/Does - contact organism through aborted tissues and uterine discharges
  - if pregnant 30 -120 days, may abort this year
  - if not pregnant or greater than 120 days pregnant may abort the next year
  - usually a problem in 2nd lambers and kidders
2. Lambs and kids born to infected ewes become infected at birth and may abort the next year.
3. Takes 5-6 weeks after infection for abortion to occur

## Control

1. Buy females that have not previously lambed
2. Lamb/kid out purchased females separate from home flock in case of abortion
3. LA - 200@ 6 and 3 weeks prior to lambing or 400-500 mg/hd/day of tetracycline in feed. **Need approval from veterinarian.**
4. Remove aborted females and clean up and disinfect area.

## Prevention

1. Vaccination, prior to breeding, 6 and 3 weeks if vaccinating for the first time and then annually 3 weeks prior to breeding.
2. Vaccinating infected females will not necessarily prevent abortion
3. Females only abort once in a three year period

## Toxoplasmosis

Agent: *Toxoplasma gondii*

## Clinical signs

1. Dependent on time of infection
  - a) first 2 months of gestation
    - resorption - dam doesn't lamb/kid
  - b) 3rd and 4th month of gestation
    - die and mummify
    - dead lambs/kids a week premature
    - stillborns at full term
    - small weak lambs/kids
    - live lamb/kid and mummy
  - c) 5th month of gestation - normal lamb/kid
2. Ewes and does are normal

## Transmission

1. Pregnant ewe/doe ingests toxoplasma oocyst from cat feces
  - cat is only source of organism for the ewe/doe

## Control

1. Control of cat population
2. Exposure of ewes/does to cat feces prior to breeding

## Vibriosis, *Campylobacter* Abortion

Agent: *Campylobacter fetus fetus* and *Campylobacter jejuni*

### Clinical signs

1. Abortion in last 2 months of gestation
2. Most ewes no signs of abortion, not as common a problem in goats.
3. Some ewes may develop a diarrhea
4. Aborted, stillborn and weak lambs

### Transmission

1. Often brought into flock via a purchased infected carrier animal.
  - organism lives in the gastrointestinal tract
2. Aborted lambs, placenta and discharges are highly infectious
3. Boots, clothing, and contaminated equipment may transmit infection
4. Birds at the feed bunk

### Control

1. Injection of LA-200 (oxytetracycline) or 250 to 300 mg/hd till the end of lambing. **Need a veterinarian's prescription.**
2. Vaccinate

### Prevention

1. Vaccination - time of breeding
  - 2nd injection 60 to 90 days later

### **Pregnancy Toxemia**

Pregnancy toxemia is a disease condition of pregnant ewes during the last 6 weeks of gestation. The clinical signs of pregnancy toxemia are often vague and develop over a course of 3 to 10 days. The ewe is slow to get up and is often off by herself. She will eat less and her eyes appear dull. A common sign is grinding of the teeth with generalized weakness progressing to blindness, loss of a menance response, star gazing, uncoordinated gait, tremors and coma. In the final stages of the disease, the ewe goes down and the fetuses die resulting in the release of toxins. The initial clinical signs develop because of the decreased utilization of glucose by the brain.

During the last third of gestation the fetus requires more glucose for development. During the last part of gestation, ewes bearing twins require 1.9 times the dry matter intake than ewes with one fetus. Ewes with triplets require 230% more energy than that of ewes with singles. Although the ewe will increase her energy consumption when offered a balanced ration, her dry matter intake will be limited by the enlarged pregnant uterus. Because of the increased demand for glucose by the fetuses, there is less for utilization by the ewe.

Pregnancy toxemia occurs because of one of following:

- a) Overnutrition
- b) Undernutrition
- c) Secondary to complicating disease

### Overnutrition

This occurs when the ewe is in excess body condition. As a result, there is an increase in abdominal fat which along with the increasing size of the uterus, limits the amount of space for rumen fill. By reducing rumen fill, dry matter intake is reduced resulting in inadequate consumption of energy.

### Undernutrition

The ewe is provided an inadequate amount of energy. This may be due to a low energy dense ration, poor quality feeds, or the ewe is not provided or does not have access to an adequate amount of feed to provide fetal energy demands.

### Secondary to complicating disease

This occurs when the ewe acquires a condition that limits her ability to consume feed. For example: a ewe with foot rot may not be willing or capable of moving to the feed bunk.

There are animal factors that increase the risk of pregnancy toxemia

1. Dental disease
2. Old age
3. Smaller than average body size
4. Multiple fetuses
5. Thin ewes less than 2.5 body condition score – these ewes don't have the energy or protein reserves if energy intake decreases
6. Heavy ewes body condition score of 4 or greater – reduced abdominal capacity because of internal fat.
7. Parasitism
8. Any condition that results in pain or fever – post vaccine reaction

Factors that will affect feed intake

1. Inclement weather – rain, extreme heat, snow storms, etc.
2. Feeder space is inadequate for pregnant ewes- 18 to 20 inches per ewe
3. Restricted water intake will decrease dry matter intake
4. Shearing, crutching, and vaccinating may cause a decrease in intakes if ewes are held from feed during the procedures or if a procedure results in pain or fever.
5. Lack of exercise in pen fed ewes.

### **Diagnosis and Treatment**

Diagnosis of pregnancy toxemia is based on clinical signs and history of late pregnancy. Treatment centers on providing the ewe with an energy source that can be converted into glucose for fetal demands as well as meeting the demands of the ewe's brain.

1. 60 ml of propylene glycol 2 to 3 times a day
2. Intravenous glucose – 5 or 10% solutions providing 50 gram of glucose. If using 5% dextrose solution, need to give 1 liter.
3. Multiple B vitamins
4. Force feeding

5. 60 ml of Calcium borogluconate subcutaneously for potential hypocalcemia
6. Start procaine penicillin G for pneumonia prevention

### **Prevention**

1. Provide adequate energy in the ration. Increase grain from 1/2 lb to 2 lbs per day. Provide good quality hay.
2. Avoid abrupt feed changes
3. Avoid stress in late gestation
4. Bovatec is to be added to feed at a rate of 20 to 30 grams per ton, 10 to 15 mg/lb of feed. Sheep are to consume no less than 15 mg/head per day and no more than 70 mg/head/day.  
Goats can be fed, Rumensen, 10 to 30 g/ton of feed, 5 to 15 mg/lb of feed. 15 mg/hd/day.

### **Hypocalcemia**

Usually occurs in the later part of gestation, last 2 weeks, as the demand for calcium by the fetuses increases during last 6 weeks of gestation. The condition is often associated with some sort of stress, vaccinating, storms, movement, being chased by dogs, and change in feeds or feeding schedules.

Animals stagger and may be hyperexcitable, appear stiff when they walk, develop tremors and eventually go down unable to rise, leading to death.

Treatment is to give the ewe or doe 60 to 100 ml of Calcium borogluconate intravenously very slowly. Alternatively, give 100 – 200 ml of Calcium borogluconate under the skin over the ribs. Oral calcium gels can also be administered.

Prevention is to provide a mineral mix with calcium.

### **White Muscle Disease**

Commonly occurs in selenium deficient areas. Lambs and kids may be born with white muscle disease if dams are not receiving a mineral mix with selenium. Time of turnout and weaning is another time when clinical signs may develop. Affected animals are stiff legged and bunny hop and may be painful. Treatment is injections of Vitamin E and Se injections, BoSe. Prevention is to feed a mineral mix with a minimum of 26 ppm.