



# Vet Call

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## Beef cattle abortion

*Abortions in beef cattle herds can occur occasionally or in bunches. Diagnosing the cause of an occasional abortion is very difficult and many times is assumed to be due to factors other than germs such as bacteria or viruses.*

### Pattern of losses

The occurrence of several abortions in a short period of time is described as an abortion storm and can be caused by plant toxins, toxins in feeds, bacteria, viruses, other infectious agents or injectable products.

The first step to investigate an abortion outbreak is to establish the pattern of losses by examining as many calves by necropsy as possible. You or your veterinarian should keep a written record of abortions, recording the number and the cause as nearly as can be determined. A complete history backed by accurate records allows one to identify

previous problems, the vaccination program, nutrition during pregnancy, herd exposure to other animals and management practices that affect fetus survivability.

By examining records and getting a complete history, one can begin to get an accurate idea of the stage of gestation when the abortions are occurring, the age of dam that is affected, and any other pattern to finding aborted fetuses. Important information includes the vaccination history (modified-live vs. killed and timing of vaccination), movement of cattle into the herd, recent diseases or toxicosis, access to plants that can cause abortions, whether breeding is by artificial insemination (AI) or natural service, and type of feed and pasture.

While the history is very important to help direct the diagnostic effort, it is important not to eliminate a disease from the list of possibilities because of history alone. For example, a history of vaccination against a particular disease does not remove that disease from the list of possible causes, as any disease may cause abortion in spite of previous vaccination.

### Potential suspects

Necropsy examination of as many aborted fetuses as possible allows the best opportunity to determine a cause. The fetus and the placenta should be sent to the nearest diagnostic laboratory, or your veterinarian should perform as complete a necropsy as possible and send appropriate samples to a diagnostic laboratory.

Once you have the history, herd records, nutrition records, vaccination records and diagnostic laboratory reports, you are ready to narrow down the list of possible causes. A good method of organizing your thoughts is to list the common causes of abortion along with the history and diagnostic results expected and compare them to

the history and diagnostic results of the herd in question. Table 1 will allow you to begin focusing on the most likely rule-outs, but many exceptions exist and more extensive research may be needed to diagnose some cases.

### Preventing abortion

Biosecurity is the attempt to keep germs such as bacteria, virus, fungus and parasites away from a herd. One aspect of biosecurity is a vaccination program that improves the immunity of cattle against the infectious agents that they may contact. Not all diseases that cause abortion have commercial vaccines available, and no vaccine is completely effective at preventing abortion in all situations. Therefore, other aspects of disease prevention and biosecurity are at least as important as a vaccination program.

A vaccination program should be tailored for specific risk factors and should be designed and then rigorously applied to the herd. For most beef herds, the potential list of diseases in a vaccination program would include: brucellosis, infectious bovine rhinotracheitis (IBR), bovine viral diarrhea (BVD), vibriosis (Campylobacteriosis) and leptospirosis. Other diseases for which vaccines are available include: *Haemophilus somnus* and trichomoniasis.

Because most infectious agents cannot live very long outside of an animal, and because most don't travel great distances through the air, a method to keep other animals away from a herd nearly accomplishes the goal of keeping infectious agents away. Keeping a closed herd is one method of biosecurity. A closed herd is one where no cattle enter the farm, and no cattle on the farm have contact with cattle from other farms.

A herd is not closed if cattle share a fence with cattle from a different farm, if cattle are purchased (bulls, replacement heifers, replacement cows, stocker cattle), if cattle return to the herd after being at a performance evaluation (i.e. bull test station) or show, if bulls are borrowed or loaned, or if cattle are transported in a vehicle that transports other cattle.

Using this definition, one can agree that it is difficult (and maybe not desirable from a production standpoint) to have a completely

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**Table 1: Causes of abortion by trimester**

#### Early-term abortion [0-3 months (mo.)]

- Trichomoniasis
- Bovine viral diarrhea (BVD)
- Bluetongue
- Vibriosis
- Genetic factors
- Plant toxins
- Severe trauma to dam or fetus
- High body temperature

#### Midterm abortion (4-6 mo.)

- Infectious bovine rhinotracheitis (IBR)
- Brucellosis
- Yeast — candida
- Locoweeds, narrow leaf sumpweed (and other plant toxins)
- BVD

#### Late-term abortions (7-9 mo.)

- Leptospirosis
- IBR
- Epizootic bovine abortion
- Brucellosis
- Neospora caninum*
- Ureaplasma diversum*
- Listeriosis
- Haemophilus somnus*
- Bacillus cereus*
- Fungal causes
- Anaplasmosis
- BVD
- Pine needles (and other toxic plants)
- Endotoxins due to other diseases

closed herd. However, utilizing as many closed-herd-protocols as possible will minimize exposure to infectious agents.

In open herds, additions (replacement females and bulls) should only be purchased from herds with a known and effective vaccination and disease-testing and diagnosis program. Avoid purchasing animals from unknown sources or that have been mixed with other cattle prior to sale.

Also, additions to the herd should be isolated from the resident herd for at least

one month prior to introduction to the herd. Isolated cattle should not share feeders, waterers or airspace (distance depends on wind velocity and direction and is not well-defined). During the isolation period, animals should be vaccinated with the same program as utilized on the farm and screened to identify those replacements persistently infected with BVD. Work with your diagnostic laboratory to accurately interpret the tests. Some herds may also

screen for Johne's disease and bovine leukosis virus (BLV).

Abortions can be costly and difficult to diagnose, but a consistent vaccination and biosecurity program will greatly decrease the risk of a devastating abortion storm occurring in your herd.



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