

Abortions in Dairy Cattle - II

Diagnosing and Preventing Abortion Problems

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Diagnosing Abortion Problems

Abortions can represent a significant loss of (potential) income - an estimated \$500 to \$900 per case - and present a frustrating challenge to dairy producers and veterinarians. The procedures presented here should help producers and their veterinarians increase the likelihood of diagnosing the cause of any abortions that may occur. In some situations, the prompt diagnosis of an abortion may help reduce the severity of an impending outbreak.

Well-kept records can be very useful in the investigation of an abortion problem. Breeding dates, parity, production information and health events (for example, disease or vaccination) can all help to identify factors which may be associated with the abortions. Other 'herd level' information such as ration changes, new additions, personnel changes, etc., should also be recorded. This kind of information should be kept in a readily accessible format on all dairy farms and will serve many functions in addition to being useful for investigating abortion problems.

Before it can be decided that there is a significant problem with early embryonic loss or early pregnancy loss on a dairy farm, a definitive diagnosis of pregnancy should be made on all cows. Mid to late term abortions are often recognized due to the vaginal discharge or retained placenta that often accompany an abortion at this stage. Careful observation of animals should help to detect abortions as they occur. One study reported that only 46% (1380 of 3012) of abortions were detected.

Some early embryonic death and abortion loss can be considered 'normal.' Although different research studies report different rates of loss, approximately 10-15%

of cows diagnosed pregnant before 42 days can be expected to return to estrus as a result of early embryonic death. Once beyond 42 days of pregnancy, a 'normal' abortion rate of 3-5% (annually) will be found in most herds. Most of these abortions will be due to one of the causes discussed in VCE Publication 404-288, "**Abortion in Dairy Cattle - I: Causes of Bovine Abortion**, that are not highly contagious (passed from cow to cow) and can be considered to be 'isolated incidents.' However, there is still benefit in knowing what is causing these losses so as to establish information which may prove helpful in the event of an abortion storm. For these reasons, it may be beneficial to establish a policy of submitting samples to a laboratory when any "unexplained" abortion occurs. For example, it may be justified not to submit any samples to a laboratory if a cow aborts shortly after experiencing a very severe case of mastitis. However, it must also be remembered that any abortion could signal the start of an abortion storm - in which case, a prompt diagnosis might help to manage the outbreak.

When collecting samples (see "Abortion Diagnosis Checklist") which will be used to diagnose the cause of an abortion(s), the principle of "*the more the better*" should be followed. Ideally, the whole fetus and placenta should be saved and placed in a clean bag, which should then be refrigerated as soon as possible. In some situations, paired blood samples may also help to diagnose an active infection in the cow, such as BVD or leptospirosis. The first sample should be taken as soon as possible after the abortion is noted, with the second sample being collected in 2 - 4 weeks time. While this does require some more effort than collecting only a single blood sample, the results will generally be more meaningful.

Please consult your veterinarian in regard to selecting and preparing the proper samples. The cause of an abortion is much more likely to be diagnosed if all possible samples are submitted in the proper way! Make sure that you inform the laboratory about any diseases you or your veterinarian suspect so that they can do an appropriate diagnostic workup.

Preventing Abortion Problems

Sound herd health management practices will go a long way toward preventing abortion problems.

Basic **biosecurity practices** are those practices which minimize the risk of introducing diseases onto the farm, and the spread of disease within the herd. This may include such measures as quarantining purchased cattle for a period of time, or maintaining a completely 'closed' herd. Visitors to the farm could also be required to wear clean clothing and to disinfect footwear and any equipment that may have been in contact with other cattle.

Maintaining the general health & immune function of the cattle is also important in minimizing the risk of abortion problems. Providing an adequate amount of a properly formulated and delivered ration, and providing a clean, comfortable and minimal-stress environment are essential to accomplishing this task. Special attention to possible contamination of the ration with molds and toxins is likely warranted.

Although **vaccination** is not a remedy for poor management, it is an integral component of a complete herd health program. Safe and efficacious vaccines are available for many of the infectious diseases that can cause abortions in cattle. It is generally accepted that a vaccination program targeted at reproductive diseases should include, at a minimum, Leptospirosis (usually 5 serovars are included), BVD and IBR. A veterinarian familiar with your herd and management practices will be able to assist you in developing a comprehensive vaccination program. It is important to remember that proper handling and administration of vaccines is **crucial** to achieving optimal results.

Finally, special attention should be focused on the **health status of bulls** in herds that utilize bulls in their lactating cow or heifer herds. Purchased bulls can not only introduce disease into the herd, but may also spread venereal diseases within a herd. Once again, a veterinarian should be able to assist you in assessing the health status of your bulls. In situations where bulls are introduced to the herd from outside sources, a minimum 10-14 day quarantine period should be routinely imposed in order to evaluate the health status of the imported animals. Bulls should be purchased only from herds that have a good herd health program in place and whose health status is known.

Sources:

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Abortion Diagnosis Checklist

While there is no guarantee that a conclusive diagnosis will be arrived at, collecting the proper information and samples will increase the likelihood of correctly identifying the cause of abortions in your herd. The following checklist is intended to help you in this process.

Information:

- ___ animal identification, age & lact'n: _____
- ___ animal source: home-raised [] purchased []
- ___ conception date: _____ A.I. [] Natural []
- ___ date of pregnancy diagnosis: _____ previous abortion? Y N
- ___ date of last vaccination: _____
- ___ vaccine(s) given at that time: _____
- ___ major diseases since conception: _____
- ___ clinical signs observed at time of abortion: _____
- _____
- _____

Sample collection:

Consult your veterinarian immediately. Collect all samples separately into clean containers such as unused rectal sleeves, heavy garbage bags or sterile containers. Refrigerate samples immediately and submit to diagnostic lab as soon as possible. Provide the laboratory with the relevant history, clinical signs and diseases suspected.

- ___ aborted fetus
- ___ placenta &/or amniotic sac
- ___ amniotic fluids
- ___ feed samples (if mycotoxicosis is suspected - take a large, representative sample)

Paired blood samples provide the most useful diagnostic information. A (minimum) four-fold rise in the antibody titre to a specific disease agent in the second sample strongly suggests that the animal was recently infected. Titres are commonly run for BVD / IBR / Lepto / BRSV... Collect the blood samples in a tube that allows blood to clot (eg. a "red top Vacutainer[®]") and have your veterinarian freeze the first sample until the second is collected.

- ___ acute blood sample - taken as soon as possible after abortion is observed
- ___ convalescent blood sample - collected 2 - 4 weeks after acute sample