

Abortion in Dairy Cows and Heifers



IRM-24

Dairy Integrated Reproductive Management

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General Information

Abortion is the expulsion of the fetus before the end of pregnancy. In the early stages after fertilization, loss may go unnoticed except for prolongation of the estrous cycle. Unless estrous detection is very accurate, occurrence of long cycles is a poor diagnosis of abortion. Later abortions can be identified by the observation of the expelled fetus and/or fetal membranes. Some pregnancy losses may occur through resorption or mummification of the fetus and may be diagnosed only by palpation.

Pregnancy in cattle reportedly is terminated by spontaneous abortion in 2 to 5% of the pregnancies. In a survey of 83 dairy herds in West Virginia, abortions averaged 2.9% reported incidences annually. However, the incidences ranged from 0-19% within herd, indicating that some owners either have real herd health problems or keep more accurate records than others.

To know if abortion has occurred, the cow must have been confirmed pregnant previously. Concentrations of milk progesterone 22-25 days after breeding have been used to estimate pregnancy. Rectal palpation 35-40 days after breeding has been the routine pregnancy indicator.

The difference between the number of cows diagnosed pregnant by milk progesterone and by palpation is an estimate of early embryo loss. Using this method, numerous research reports average about 10% embryonic loss. Older methods where the difference between the fertilization rate and the pregnancy rate were used, estimate embryonic loss at 15%. Pregnancy loss from 40 days to term averages 3%. The latter figure is what most producers would report because of the ease of observing the abortion. The actual loss of pregnancies totals around 18%.

Prevention

Causes of abortion are many but most are controllable. Douching, infusion or insemination of pregnant cows leads to abortion, as does rough handling of pregnant cows. Manual removal of the corpus luteum or injections of prostaglandin $F_{2\alpha}$, glucocorticoids, or estrogen also cause expulsion of the fetus. Do not use feedstuffs containing high concentrations of estrogen such as legumes, particularly alfalfa, exclusively. Other preventable factors contributing to abortions include malnutrition and ingestion of moldy feed, toxic chemicals (arsenic, lead, nitrates) or toxic plants. Control these causative agents with accurate records that identify if a problem exists followed by removal of the causative agent(s).

Most frequently, outbreaks of abortion result from disease (Table 1). Vaccinate females against the common agents (**brucellosis**, **leptospirosis**, **vibriosis**, **bovine viral diarrhea**, and **infectious bovine rhinotracheitis**). Use artificial insemination to prevent disease from **vibriosis** and **trichomoniasis** which are transmitted by natural mating with infected bulls.

Insect vectors or unsanitary needles and dehorning instruments transmit a protozoan disease, **anaplasmosis**, which destroys the red blood cells. Therefore, disinfect instruments and control insects to reduce abortions.

Economics

With any abortion considerable monetary loss, both real and potential, occurs. The value of the calf depends on the potential use, ranging from under \$100 for a veal calf to in excess of \$1000 for a dairy heifer for replacement or sale. The value reflects the genetic merit of the sire and dam. If loss of pregnancy occurs early, the only other cost may be the extra days open beyond 85 days and can be estimated at about \$3/day assuming no major medical complications.

Table 1. Common Causes of Abortion

Form	Disease	Symptoms	Transmission	Prevention
Bacterial	Brucellosis	Abortion after 4 months Retained placenta	Ingestion Contact-mucus Skin abrasions Coitus	Calf hood vaccination Test and slaughter Segregate new stock Sanitation
	Leptospirosis	Abortion after 6 months	Ingestion Mucous membrane Respiratory Skin abrasions Wildlife	Vaccinate Eliminate carrier Keep from swine
	Listeriosis	Abortion after 6 months Not common	New stock Silage Severe stress	Segregate new stock Stop feeding silage Sanitation
	Vibriosis	Abortion after 6 months Repeated long estrous cycles	Coitus	Artificial insemination Clean bulls on clean cows
Viral	BVD (Bovine Viral Diarrhea)	Abortion Fever Erosion of mouth and gums Diarrhea	Direct contact Food Water	Sanitation Vaccinate
	IBR (Infectious Bovine Rhinotracheitis)	Abortion 6th month Fever Runny nose Eye Irritation Pustules in vagina Pustules in prepus and on glans penis	Contact Coitus Urine and fluids	Nasal spray vaccine
Protozoa	Trichomoniasis	Long estrous cycles Abortion 1 to 4 months	Coitus	Artificial insemination Clean bull on clean cows Dispose of or treat infected bull
Mycotic	Mycotic Abortion	Necrotic cotyledons Skin lesions in aborted fetus Abortion 5 to 7 months	Ingestion (?)	Avoid moldy feed

With abortions occurring later in pregnancy, the situation is more complex. Not only does abortion late in pregnancy result in more medical problems and increased veterinarian expenses, but also a prolonged recovery period. Cows at this stage are in the waning portion of their lactation, even possibly dry. Rebreeding may not be advisable for several reasons.

- The calving interval would be increased to over 18 months.
- The next lactation would be of lower production.
- Several services may be necessary.
- The dam may serve as a disease carrier to reinfect other animals.

Diagnosis

When an abortion occurs, submit samples for lab diagnosis. Place the fetus and placenta in separate plastic bags. Wear disposable gloves to prevent contamination by disease organisms, in particular brucellosis which causes undulant fever in humans. Take blood samples at the time of abortion and 2 to 3 weeks later.

Summary

Abortions are costly and measures should be taken to minimize their occurrence. Good sanitation, proper feeding, use of artificial insemination or clean bulls and adequate vaccination programs will help to reduce the incidence of abortion and increase profit.

Trade or brand names are mentioned only for information. The Cooperative Extension Service intends no endorsement nor implies discrimination to the exclusion of other products which also may be suitable.