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1981

## G81-574 Reproductive Diseases in Cattle

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Rice, Duane, "G81-574 Reproductive Diseases in Cattle" (1981). *Historical Materials from University of Nebraska-Lincoln Extension*. 193.

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## Reproductive Diseases in Cattle

The reproductive diseases mentioned in this NebGuide comprise some of the more common problems confronting the cattle industry today.

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Although many advances have been made in controlling reproductive diseases in cattle, serious losses are still common. These losses can be reduced by recognizing the diseases and following the proper management recommendations that are available today. Nearly 50 percent of reproductive failure in cattle is due to infectious diseases, and there are vaccines available that can prevent some of these. Management recommendations may include: 1) vaccines, 2) general sanitation, 3) artificial insemination (AI) or, if a problem is already present, 4) prompt treatment to hasten recovery.

Reproductive diseases can be divided into four general classifications:

1. True venereal diseases transmitted by sexual contact;
2. Infections that specifically attack the reproductive system;
3. Inflammation of specific organs caused by various agents;
4. Debilitating disease that lowers efficiency of all the body systems.

Infectious diseases of specific organs include maladies such as vaginitis (inflamed vagina) or metritis (uterine infection), caused by various opportunistic agents when predisposing conditions are presented.

Metritis is an inflammation of the uterus and may vary from very mild to severe enough to cause death. There are many causes for this condition, which usually occurs during the early post-calving period. Retained placenta, unsanitary assistance during calving, contaminated quarters, abortions, and poor nutrition are among the predisposing factors.

Metritis may reduce fertility by preventing normal heat cycles or, if cycling occurs, the undesirable

uterine condition can prevent normal conception. The signs of metritis vary, but there is usually a pus-flecked vaginal discharge, straining, and, in general, the animal appears ill. Reduced milk production is common in acute cases, but may not be noticeable in subclinical metritis. Invariably, metritis lowers conception rates and creates long, costly calving intervals.

### **True Venereal Diseases**

True venereal diseases, those transmitted during breeding, comprise some of the infectious diseases. Vibriosis and trichomoniasis are examples of true venereal diseases that cause infertility due to abortion and inflammation of the reproductive tract.

**Vibriosis.** Vibriosis is a widespread cause of early embryonic death and infertility in cows throughout the world. In spite of good vaccines being available, it still causes losses simply because they are not used in many herds. Infection introduced into a non-exposed or non-vaccinated herd will spread rapidly during the mating act or by artificial insemination if the semen is contaminated with the causative agent, a bacterium, *Campylobacter fetus*, formerly called *Vibro fetus venerealis*.

Repeat breeding activity is generally seen in an infected herd after some of the animals were assumed to be pregnant. Irregular estrus cycles are common. Resorption or expulsion of a small fetus probably explains the long estrus cycle seen with this disease. Frequently, due to its small size, no fetus is seen although an abortion has occurred. Varying degrees of vaginitis (vaginal inflammation) and metritis (uterine infection) are present but may be unrecognized. Some females may carry the fetus longer and may abort a sizeable fetus 5 to 6 months into the gestation period. Retained placentas are common, but gross fetal or placental lesions are not of diagnostic value.

Diagnosis is confirmed by culture of the causative organism from cervical mucus or from an aborted fetus.

Vibriosis is somewhat self-limiting as most of the cattle recover within a year. Disease carriers are common, however, and new infection can spread to non-exposed animals. Vibriosis can be prevented from entering a herd by administering a vaccine about one month prior to breeding. Practical control may consist of keeping females that have been infected isolated from non-infected ones (usually virgin heifers), and by maintaining separate herds and using disease-free bulls on the non-infected herd. The use of artificial insemination is also valuable in limiting disease spread. Most A.I. organizations test the semen to assure that it is free of vibriosis and trichomoniasis.

**Trichomoniasis.** Caused by *Trichomonas fetus*, this venereal disease can cause abortions and infertility. It may cause inflammation and uterine discharge for four to six months. No vaccines are available for its prevention, but using artificial insemination and virgin bulls aid in control. Infected bulls show no signs of disease but may harbor the trichomonads for long periods unless specific treatment is administered.

### **Other Infectious Diseases**

Brucellosis, Leptospirosis, IBR (Infectious Bovine Rhinotracheitis) and BVD (Bovine Virus Diarrhea) are infectious diseases that can affect reproductive capabilities.

**Brucellosis** (Contagious abortion, Bangs disease). Although federal and state regulations have helped to control this disease, there is still a threat and prevalence that prompts continued action.

Brucellosis is caused by the organism *Brucella abortus* and is spread from the vaginal discharge of an

infected cow or from an aborted fetus. The organism is ingested by a susceptible animal and, as this organism has an affinity for the reproductive tract, abortions, retained placenta, weak calves and infertility frequently occur. Milk produced from an infected cow may also harbor the organism. The infected milk creates a public health hazard as this is the organism that causes undulant fever in humans.

Diagnosis is by blood test or by using a milk ring test from bulk milk tanks to detect infected dairy herds.

There is no treatment for Brucellosis. It is controlled by official vaccination and entire herd test and slaughter of reactors. Quarantines are imposed by state and federal authorities until the herd has been proven free of the disease.

Prevention of Brucellosis is accomplished by official calfhood vaccination of heifer calves. Vaccination must be done by an accredited veterinarian at calf ages that vary from two to four months using standard dosage vaccine, or from 4 to 12 months using reduced dosage vaccine. Each calf must be identified as officially vaccinated in compliance with state and federal regulations.

**Leptospirosis** (Lepto). At least five species of leptospira affect cattle in the United States. The species most commonly found are *L. pomona*, *L. icterohemorrhagiae*, *L. grippityphosa*, *L. hardjo* and *L. canicola*.

The most common species affecting cattle is *L. pomona*. The clinical signs in adult cattle are icterus (yellow mucous membranes) and hemoglobinuria (bloody appearing urine), which are seen only occasionally. The milk of lactating cows may become thick, yellow and blood-tinged. Abortion two to five weeks after infection is common, but most occur about the seventh month of gestation.

Diagnosis is confirmed by a blood test or culturing the organism.

Vaccines are available for five of the leptospira species that affect cattle. Vaccination should be done 30 to 60 days before replacement heifers are to be bred, followed by a yearly booster vaccination.

**IBR** (Infectious Bovine Rhinotracheitis or Red Nose). IBR virus is normally thought of as the cause of respiratory disease of cattle. However, in females this virus also causes vulvovaginitis (inflammation of the vulva and vagina) and abortion. Abortion occurs about 20 to 45 days after infection.

Diagnosis is by FA (fluorescent antibody) tests and/or microscopic examination of fetal tissues, blood tests and virus isolation.

The use of MLV (modified live vaccines) on non-immune pregnant cows or on animals in contact with pregnant cows could possibly cause abortion. An intranasal vaccine is available that can be used on pregnant cows, if necessary.

Since IBR is very common and some IBR vaccines are not recommended for use in pregnant cows, it is advisable that heifers be vaccinated or revaccinated 30 to 60 days before breeding.

**BVD** (Bovine Virus Diarrhea). BVD virus infection can cause abortion, weak calves at birth, calves with brain damage (cerebellar hypoplasia) or other abnormal fetal development. Clinical signs in newborn calves infected with BVD include fever, nasal discharge, diarrhea, and inability to move about normally (ataxia).

Diagnosis is by postmortem examination, virus isolation and blood tests.

Unfavorable reactions frequently follow the use of modified live virus (MLV) BVD vaccines. The risk of these vaccination reactions should be weighed against the probability of losses resulting from BVD infection before a decision is made about using MLV-BVD vaccines. Appropriate recommendations should be made by the attending veterinarian after he has assessed the local BVD situation.

### **Summary**

The reproductive diseases mentioned in this NebGuide comprise some of the more common problems confronting the cattle industry today. However, there are many other causes of reproductive failure that are of either infectious, toxic or hormonal origin.

Management decisions can help minimize losses from reproductive diseases. Recognizing disease problems can aid in making decisions concerning the use of preventive vaccines, isolating sick animals, sanitation and other factors that may affect the herd status. The local practicing veterinarian, by training and experience, is the best qualified person in the community to advise the producer on livestock herd health programs.

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***File G574 under: ANIMAL DISEASES***

***A-18, Cattle***

***Issued October 1981; 15,000 printed.***

*Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Elbert C. Dickey, Director of Cooperative Extension, University of Nebraska, Institute of Agriculture and Natural Resources.*

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