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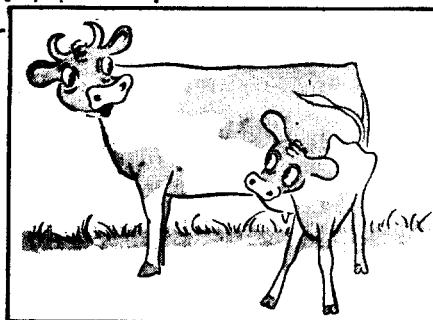
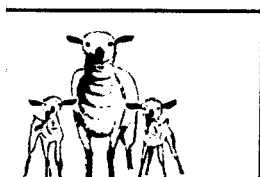
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# Vibriosis

(VIBRIO, VIBRIONIC, ABORTION)

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Fargo, North Dakota 58102

## VIBRIOSIS (Vibrio, Vibrionic, Abortion)

Infertility remains one of the costliest problems of the livestock industry. Many infectious and non-infectious causes may be responsible.

One of the most discussed infectious causes of infertility in cattle and sheep is vibriosis. There are over 30 species of the vibrio organism, many of which are natural inhabitants that can be isolated from domestic animals but fortunately do not cause disease problems. The two strains that are most frequently associated with reproductive disease are Vibrio fetus venerealis and Vibrio fetus intestinalis.

Vibrio fetus venerealis is the organism most frequently associated with infertility and abortion in cattle. There are several strains of the vibrio.

Vibrio fetus intestinalis is a natural inhabitant of intestines of sheep, young cattle or swine and is the causative agent of abortion of sheep and sometimes cattle.

### SOURCE OF INFECTION AND MEANS OF TRANSMISSION

The source of herd or flock infection is usually the addition of sexually mature animals that are infected. Contaminated AI equipment may be a source, but this is very unlikely if only semen of established AI organizations is used. Other possible sources of the intestinal strain are starlings, sparrows, crows, turkeys, chickens and possibly other wild or domesticated birds.

Vibriosis is spread in cattle through the venereal route by coitus or possibly through contact with contaminated bedding or AI equipment. Cow to cow contact as a source of spread seldom occurs.

The primary route of infection of sheep is orally. Fecal contamination of feed or water are possibly the most frequent sources. Infection seldom occurs by the venereal route. Most infected ewes lose the infection after a short period. It has been suggested

that the gall bladder may serve as a reservoir for carrier or shedder animals.

## **SYMPTOMATOLOGY**

The characteristic sign of vibriosis in cattle is temporary infertility. Embryonic death followed by reabsorption of the fetus with irregular estrous cycles ranging from 10 to 60 days, many non-pregnant females and a poor calf crop are usually signs associated with vibriosis in cattle. Abortion will be observed less frequently than infertility and usually occurs during early pregnancy. Vaginitis, metritis and salpingitis frequently follow abortion. Approximately 75 per cent of the females exhibiting infertility or abortion will conceive within six months of repeated breeding. Recovery provides immunity, but some animals become carriers.

Males employed in an infected herd may become debilitated and finally refuse to attempt to breed due to exhaustion. Older bulls appear to be more susceptible to vibrio infection than younger bulls. Vibrio free bulls soon become infected when servicing infected cows and frequently become permanent carriers.

Abortion occurring during the last third of pregnancy with no pre-abortion signs is characteristic of the vibrio infection in sheep. Metritis and vaginal discharge are the usual post-abortion signs. Full term lambs that are weak at birth is another sign of vibriosis in sheep.

Other diseases that may appear similar to vibriosis in cattle include brucellosis, trichomoniasis, IBR, BVD, listeriosis, and leptospirosis.

## **HUMANS CAN BE INFECTED**

Though generally unlikely, the organism causing vibriosis in animals has been reported to cause an infection in humans. Maximum care should be taken to avoid infection through handling of infected animals or their secretions.

## **PREVENTION**

### **Cattle**

When purchasing replacements, purchase only sexually immature animals, as only sexually mature animals will be infected or be carriers of vibriosis. Always select replacements from known clean herds and request a laboratory examination in conjunction with a physical examination by a competent veterinarian. These examinations should be specifically reported on an accompanying health certificate. Breeding records (breeding efficiency) will tell you much about a herd's health, whether any animals have vibriosis or other diseases that may affect fertility.

Breeding with AI is another method of preventing of spread of infection and contamination of a vibriosis free bull.

Lend or borrow a bull only under ideal conditions and when you know that the herd in which he is to be used is free of vibriosis or other infectious or contagious diseases that may affect fertility.

Good vaccines for vibriosis are available and will provide maximum protection if employed as directed. Maximum protection is achieved upon initial vaccination if two administrations are made at least three weeks apart with the last vaccination given at least three weeks previous to breeding. If immunity is to be maintained at its maximum level, annual vaccination should be made. Pregnant cows may be vaccinated, but usually if cows are pregnant, vibriosis is not a problem. A vaccination program can be adjusted to the convenience of the established management program. Vibrio vaccination may be best accomplished at a time when cattle are normally rounded up.

Recovered females will have some immunity but it is short-lived. Always select a multi-strained vaccine as it will provide a greater protection to the several strains of bovine vibrio organisms. The vibriosis vac-

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cines are killed vaccines, so there is a minimum danger of abortion and no danger of spreading the disease through vaccination. The vaccine should always be administered according to the recommendation of the manufacturer and by recognized procedures (see N. D. Agr. Ext. Circular A-569 - Disease Resistance in Livestock and Poultry). Never vaccinate less than 60 days before slaughter.

### Sheep

Prevention of infection with vibriosis in sheep is generally similar to that described for cattle. Every effort should be made to select vibriosis free replacements.

Prevention of the spread of infection can best be achieved by preventing fecal and vaginal secretion contamination of feeds and water. All aborted fetuses and their placental membranes along with contaminated bedding should be removed immediately and burned or buried with a covering of lime to minimize contamination of premises. Aborted ewes should be isolated from the rest of the flock, particularly when the initial abortions are observed.

Killed vibriosis vaccines are also available for sheep. The first vaccination should be made just before breeding with the second vaccination given 75 to 100 days later. Like cattle, sheep should be vaccinated annually.

### DIAGNOSIS OF VIBRIOSIS

Vibriosis should be suspected if cows continue to return to estrous at 10 to 60-day intervals or if abortion is observed in either cattle or sheep. The only sure procedure for diagnosis of vibriosis in either cattle or sheep is the isolation and identification of a specific organism known to cause vibriosis by the competent utilization of adequate laboratory procedures. Complete laboratory examination is tedious and several collections may be needed to be sure that vibriosis is not present.

There are more than 30 species of Vibrio organisms. Detection of one of them without detailed examination to determine if it is the type that causes infertility or abortion is of no value, and may cause unwanted alarm and/or confusion. For cattle, the choice material of isolation of the vibrio organism is the cervical mucous at estrous, stomach contents of the aborted fetus and the prepucial washing or semen of the bull.

The choice material for the isolation of Vibrio fetus from sheep is the fetal stomach contents, liver, lung or the placental membranes or fluids of the aborted fetus.

Fluorescent antibody technique is of limited value in that the technique will not differentiate the various species of vibrio. The presence of any one of the many normal habitants of vibrio will give a positive fluorescent test.

### TREATMENT

Prevention of vibrio infection is far less costly than medication. However, medication can be utilized under specific conditions with benefit.

In cattle sexual rest of the cow for several estrous periods can be helpful. Uterine infusion with an applicable chemotherapeutic has been successful. Neither of these may be applicable for an infected herd under range conditions.

Prepucial infusion or parenteral administration of streptomycin has been effective in controlling vibriosis in infected bulls.

Medication with adequate levels of wide-spectrum antibiotics in feed or water has been applicable in the treatment of vibrio infection in sheep in conjunction with good sanitation and isolation of infected animals.

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