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J Craig
Department of Agriculture

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VIBRIOSIS (Vibrio Foetus Infection) 
RECORDED IN SOUTH-WEST HERDS

By J. CRAIG, M.R.C.V.S., Senior Veterinary Surgeon

VIBRIOSIS of dairy cattle was recently diagnosed for the first time in several herds in the South-West part of this State. This disease is not a new one, since Vibrionic abortion has been recognised for some considerable time in Europe and America, while within recent years it has been identified as causing abortion and sterility in cattle in the Eastern States of Australia.

Vibrio foetus infection is caused by small comma-shaped and spiral-shaped organisms, which invade the genital tract of cattle, and may be characterised by sporadic abortions and temporary sterility or delayed conception among the members of the dairy herd.

SOURCE OF INFECTION

The appearance of Vibrio disease in a herd may be traced to an introduced infected animal. As far as is known the infection may be transmitted during service, and an infected bull can infect each animal with which it is mated. Infection can also take place by means of contact with infected material voided from a recently aborted animal, the organisms gaining entrance to the animal body through the digestive tract or the mucous membranes of the mouth or eye.

SYMPTOMS

Commonly there is a history of continued and often irregular return to service, cows and heifers returning to the bull at from one to nine weeks. Other early symptoms may include a transient vaginitis, with a copious clear mucoid discharge visible a few hours after service, or a muco-purulent discharge up to 48 hours following service.

Abortion or early foetal death may occur, with the result that animals thought to be in calf may return to the bull at any time after service until six months in pregnancy. An abortion from four to six months is usually detected by the farmer from outward visible symptoms, i.e., increase in udder size, swelling of the vulva, remnants of foetal membranes (afterbirth) still visible, or the recovery of the foetus. Prior to four months the small foetus is usually aborted complete with foetal membranes and may not be detected. The only evidence of the abortion in such a case is that the animal returns to service.

COURSE OF THE DISEASE

In the acute stage of Vibriosis, continued and usually irregular return to the bull is the only evidence of its presence in the herd. As the disease becomes established in the herd, abortions at four to six months may occur.

Where the infection has been present in the herd for some time, the disease mainly reveals itself in the younger members (first or second calvers) or in newly-introduced animals; the older members of the herd, having acquired a tolerance to the disease, will often hold to the bull and bear full time viable calves.
Abortions met with are in the region of 4% only, but several infected members of the herd may remain permanently sterile.

**DIAGNOSIS**

In herds where Strain 19 vaccine has not been used, Vibriosis may be confused with Brucellosis (Contagious Abortion). Generally speaking, however, with Vibriosis abortions occur in the first six months of pregnancy, and with Brucellosis from the fifth to seventh month, or the birth of a full term dead calf.

In any case, Brucellosis may be detected by blood examination (agglutination test). With Vibriosis the abortion rate is not high, rarely more than 10%, and with an average of 4.5%. The first indication of infection may be the repeated returning to service by cows and heifers and signs of irregular oestrus (heat), while a muco-purulent discharge may be visible following service.

A certain diagnosis can only be made in the laboratory where microscopic examination of the aborted foetus will reveal the causative organism, Vibrio foetus, in large numbers in the foetal stomach contents.

**TREATMENT**

Both penicillin and streptomycin have been used in Vibrio infected herds, but the most effective method of treatment would appear to be the streptomycin. Infected females are given an intra-uterine injection of 1 gram of streptomycin in 2-3 fluid ounces of distilled water, and put to the bull at the next heat period.

Bulls may be treated by intramuscular injection with a dose of 4-6 grams streptomycin per day for four consecutive days, according to body weight.

Treated cows have been shown to hold after one or two services compared with three to seven services in the untreated animal, whilst bulls may be used 24 hours after the last injection.

**CONTROL**

The measures to be adopted will depend on the extent of the infection, and on the economic value of the herd members, and in all cases aborting cows should be isolated and maintained in such isolation until genital discharges cease.

With a widespread infection shown by early abortions and breeding troubles over several seasons, it is probable that the infection is well distributed among the individual adult members of the herd. In such cases, a tolerance to Vibriosis will probably develop and the cows will hold satisfactorily to service. Heifers, however, must be mated with a clean young bull and this animal must not be permitted to serve older cows. In this way a clean herd may be built up; this self-limiting phase of the disease is not as yet fully understood.

Individual herd members may be treated as indicated, this being especially applicable where valuable animals or stud stock are concerned, while in small herds it may be economical to cull infected cattle in an endeavour to eliminate the infection.

**CONCLUSION**

With the identification of Vibrio foetus in Western Australia, yet one further cause of abortion, temporary sterility, and failure to reproduce has come to light. However, the problem of bovine sterility is a complex one, and many factors may be incriminated. There are many other causes, based on faulty or inadequate nutrition, hormonal imbalance, ovarian disease, and specific or non-specific infections of the genital tract.

Vibriosis of dairy cattle would not appear to be as serious a menace to the dairying industry as Brucellosis, but nevertheless it is of some considerable economic importance in view of its disruptive influence on the breeding efficiency of a herd. The present knowledge of the disease is incomplete, and further research is necessary to produce more efficient and rapid aids to diagnosis.