Abortion in Cattle

In UK all abortions, and premature births (before day 271 of gestation) must be reported to DEFRA/SEERAD who will then decide upon the necessary course of action.

The number of abortion enquiries reported by 31 NADIS veterinary practices throughout the UK (above) is very low and these figures probably represent under-reporting by farmers of abortions now that Brucellosis has effectively been eradicated from the UK. However, complacency can result in serious disease problems and significant financial loss unless the cause(s) of abortion is recognised at the outset of the problem. For example Salmonella Dublin can cause 10-20 per cent of susceptible dry cows to abort within a matter of weeks. Vaccination is an integral part of the control programme for many infectious causes of abortion so early diagnosis of the specific cause or causes is essential. Timely vaccination could save thousands of pounds and a great deal of stress.

Infectious agents causing infertility/abortion may affect one or two individual animals in the herd but often cause widespread problems within a herd. It is very important to remember that many infectious causes of abortion can be transmitted to humans (referred to as zoonotic infections). Young children, pregnant women and the elderly are especially vulnerable to such infections.

Recognition of the problem
Loss of the foetus before three months may not be detected until the cow unexpectedly returns to oestrus (Fig 1). Thereafter, the foetus may be found especially when cattle are housed and regularly inspected (Fig 2). In certain cases, retained foetal membranes may be the only evidence of abortion (Fig 3) especially where carrion may have disposed of the foetus.

Common causes
Viruses
Control of infectious bovine rhinotracheitis (IBR) and bovine virus diarrhoea (BVD/MD) is best achieved by either maintenance of a disease-free herd and strict biosecurity or much more commonly by completion of the recommended vaccination programme before heifers and
bulls enter the breeding programme.

**Bacteria**

*Campylobacter foetus venerealis* can cause abortion and retention of diseased foetal membranes at 4 - 7 months of pregnancy. However the first sign of a problem is a large number of returns to oestrus following service by the carrier bull; cattle bred by artificial insemination are not affected. Only later may abortions be seen.

**Brucella abortus**

Officially eradicated Britain in 1983, although *Br. abortus* still exists in cattle around the border with the Irish Republic, and there has recently been an outbreak in Great Britain. Typically, abortion occurs during the seventh month of pregnancy. In a newly infected herd very high levels of abortion are seen first in cows during late pregnancy, then those earlier in pregnancy may abort. The causal organism can persist for long periods out-with the body especially in organic debris. Blood, milk and vaginal swabs are taken from dairy females, and blood and vaginal swab from beef cattle to check for *Brucella abortus*. Control measures in the UK include monthly bulk milk testing, abortion investigations and post import checks. Routine blood sampling of beef cattle was discontinued in April 2007.

**Salmonella**

Most salmonellae-induced abortions occur in late pregnancy. In cattle, *S. dublin* is the commonest salmonella organism associated with abortion (80% of salmonella induced abortions) usually during the late summer months followed by *S. typhimurium*. The period between ingestion and abortion is around 6 to 8 weeks. As well as abortion cows fail to milk well in the subsequent lactation.

Control measures include isolation of all aborted cows, thorough disposal of products of abortion and disinfection. Vaccination can be considered where *S. dublin* is a persistent problem.

**Listeria monocytogenes**

Abortions are seen sporadically during winter months when feeding very poor quality silage (high pH). Review silage making/feeding practices for future where appropriate.

**Bacillus licheniformis**

Frequently diagnosed cause of abortion, especially in N.W. England and Scotland.

*Bacillus spp.* thrive in mouldy hay, straw, feed, and silage. Sporadic cases of abortion occur in late pregnancy although a small live calf may be born at term (Fig 4). Control is difficult because the organism is ubiquitous and the condition occurs sporadically. Avoidance of poor quality feed and straw is recommended but rarely practical (Figs 5 and 6).

**Neospora caninum**

*Neospora caninum* is the most commonly diagnosed cause of bovine abortion in the UK. (12.5% of all abortions investigated). *Neospora caninum* has a very complicated
life cycle where dogs/foxes act as the definitive host with the cow becoming accidentally infected by contact with faeces. Abortion is most common at 5-6 months of pregnancy.

Control involves keeping dogs away from calving areas and products of calving, abortion, etc. Don’t feed dogs raw meat. Careful disposal of products of abortion/stillbirth to avoid foxes gaining access. There is no vaccine available in UK.

**Mycotic (fungal) abortion**

In UK the highest incidence is in the west of the country during the winter months. Related to heavy rainfall during haymaking and straw baling, and storage in conditions of high temperature and humidity promoting fungal growth. Abortions are usually sporadic, but infrequently could involve 10% of herd. Even when infection occurs early in pregnancy abortion before 5th month is rare, and around the 7th month is more usual. Abortion is commonly accompanied by placental retention. Control measures include taking care with baling and storing food and bedding, avoidance of contaminated material where possible and improvements in ventilation, and reduce overcrowding.

**Conclusion**

Abortions may be the tip of a disease iceberg. Strict biosecurity and disease-free status are over-used phrases often under-achieved at farm level (Fig 7). Only through strict adherence to a comprehensive herd plan can abortion be prevented. Prevention of a single abortion will pay for almost all prevention measures.

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