Canolfan Milfeddygaeth Cymru
Wales Veterinary Science Centre

NEWSLETTER CYLCHLYTHYR

Bovine Abortion

Abortion diagnoses in cattle made by WVSC in the past 7 years are shown in the chart below. Caldow and Grey (2004) suggest investigating when abortion rates reach around 3%, or if there is a cluster of abortions in a short space of time. Normal unavoidable losses in cattle are around 1.7-2%. Diagnostic rate (for all UK laboratories) when both placenta and foetus are submitted is around 35% (because autolysis often occurs before the foetus is expelled). Please remember that successful diagnosis of infectious pathogens requires submission of a suitable foetus and placenta. Unfortunately, we are often presented with scavenged, mummified or heavily autolysed carcases that cannot be tested. The placenta must include at least one cotyledon. Foetuses that die during or within 24 hours of calving are investigated as stillbirths.

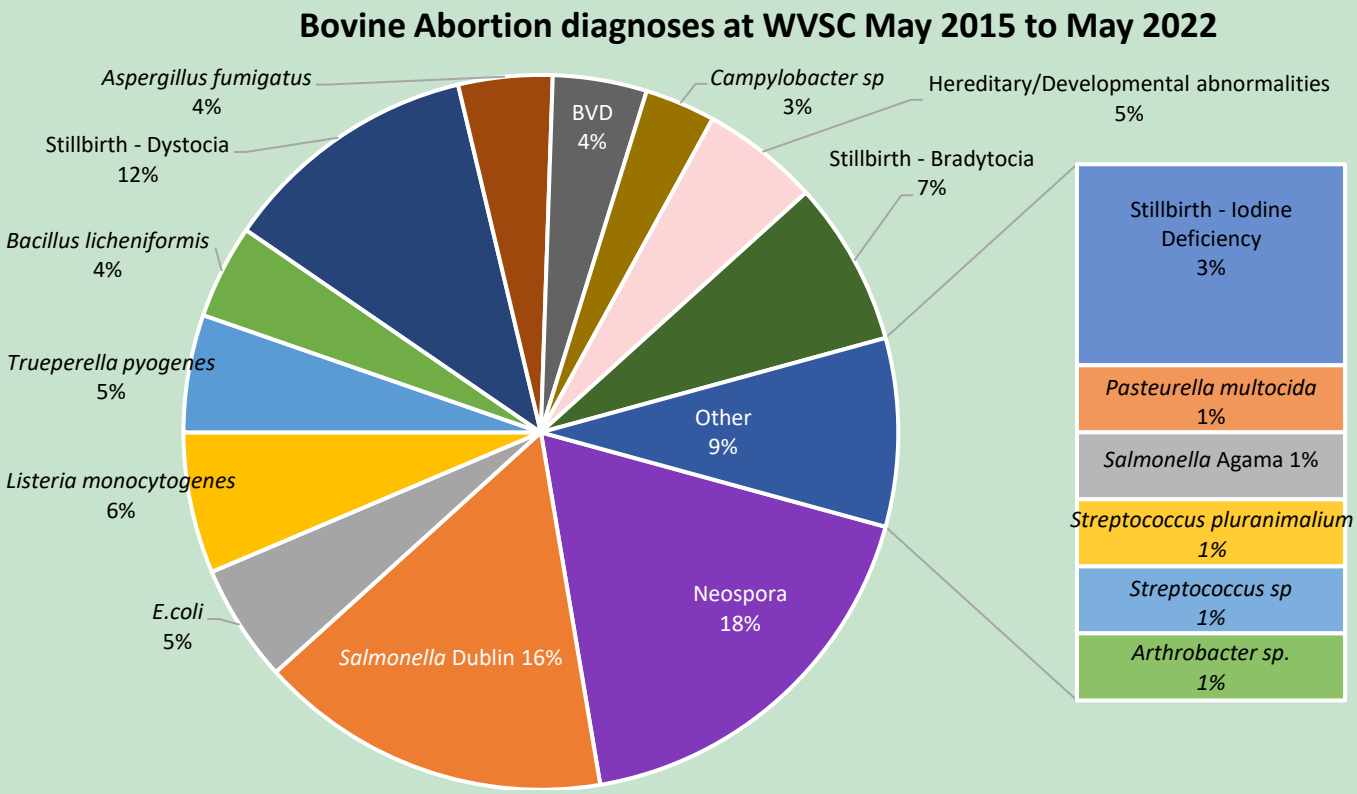

Figure 1 Bovine abortion diagnoses at WVSC 2015-2022. Diagnostic rate 45.5%

Neosporosis is caused by the protozoan *Neospora caninum* and accounts for 18% of our diagnoses.

Neospora abortions are usually sporadic, but abortion storms are possible. Cattle become infected when they ingest oocysts from the faeces of infected dogs. Dogs become infected by ingesting *Neospora* tissue oocysts in placenta, aborted foetuses, or meat. Abortion or births of congenitally or persistently infected calves occurs when oocysts cross the placenta from the cow into the foetus. Calves from infected cows have a high probability of harbouring *Neospora*. Infection can be brought onto a farm when a persistently infected cow is purchased. There is no known wildlife reservoir in the UK. Diagnosis is by PCR on frozen brain followed by histology on heart or brain. Positive serology testing of cows doesn't confirm *Neospora* as the cause of abortion as circulating antibodies can be present when other causes of abortion are identified.

***Salmonella* Dublin** was the second most common diagnosis between May 2015 and May 2022. This is a bovine-adapted serotype of *Salmonella enterica.* A chronic carrier status can result whereby animals intermittently or constantly shed the organism or become latently infected. Latent carriers may excrete the organism at times of stress such as calving, leading to contamination of calving areas. When infection is confirmed, it is important to isolate infected animals and treat appropriately. Products of abortion and contaminated bedding should be carefully disposed of. Vaccination can be part of a prevention or control programme and concurrent disease problems should also be investigated. *Salmonellosis* is zoonotic and appropriate advice should be given to the farmer regarding personnel hygiene and the consumption of unpasteurised milk.

***Listeria monocytogenes* and *Bacillus licheniformis*,** two common bacterial causes of abortion diagnosed at WVSC, are often associated with the feeding of poorly preserved silage. Both are found in the environment.

Figure 2 Bacterial placentitis

L. monocytogenes is widespread. Soil contamination of silage, high pH (>4.5) and exposure to air may all predispose to multiplication within the clamp. Areas with visible spoilage on otherwise well-preserved silage may still contain high numbers. *B. licheniformis* has been found in high concentrations in silage liquor, slimy silage, and debris at the bottom of water troughs. Control of infection for both pathogens should be aimed at reducing exposure. Avoid feeding mouldy/slimy silage, clear away uneaten silage before adding more, ensure silage clamp faces are not exposed to air for long periods and, particularly for *Listeria,* avoid high pH and soil contaminated silage. Water troughs should be regularly inspected and debris removed if dirty.

Trueperella pyogenes is a sporadic cause of abortion and is not regarded as a significant risk to other cattle in the same herd.

Bovine Viral Diarrhoea

Infection of the dame with BVD virus can lead to abortion at any stage, although it is more likely in the first 90 days of gestation. The large cavities present in this brain are known as porencephaly and are likely to have been caused by BVDV. Viruses known to cause this pathology include BVDV, SBV and bluetongue.

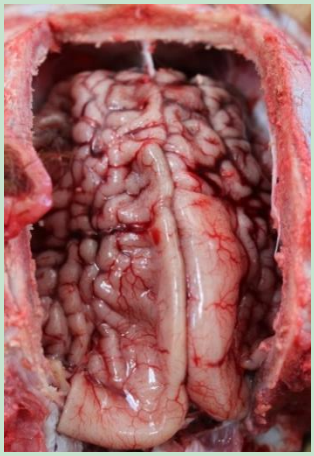

Figure 3 Porcephaly (probably due to BVDv infection)

We offer UKAS Accredited BVD Antibody and BVD antigen testing on bloods here at WVSC to aid in diagnosis of abortions.

Bluetongue is a notifiable disease and if considered a differential should be notified to APHA.

Physical, nutritional, toxic and genetic causes of abortion are all important differentials when investigating the cause of abortion in cattle.

Brucellosis, although eradicated from cattle in the United Kingdom by 1979, has been sporadically reintroduced and must be monitored. All bovine abortions must be reported to APHA who confirm if an investigation is required.

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Please check the eligibility for **free carcase collection** via this website:

ahvla.defra.gov.uk/postcode/pme.asp

The suitability of submissions for a postmortem exam. must always be discussed with the WVSC duty vet.