Infertility and abortion in cows

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There are multiple causes of infertility, abortion and stillbirths in cows. These include some diseases that are exotic to Western Australia and some zoonotic diseases. For the best chance of gaining a diagnosis, it is important to call a vet to investigate cases of infertility and abortion in cows as close to the event as possible.

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Department of Primary Industries and Regional Development (DPIRD) field vets and private vets investigate cases of infertility or abortion in cattle every year. These investigations support Australia's export markets by testing for and ruling out exotic diseases such as bovine brucellosis, Schmallenburg virus and Rift Valley fever. It is also important to investigate the cause of abortion and infertility to rule out any zoonotic diseases (ones that can infect people) so that farmers can take steps to protect their health. Subsidised disease investigations may be available as these investigations support farmer health and our continuing access to markets – contact your vet for details.

What is infertility and abortion?

It is important to distinguish between infertility and abortion.

Infertility is when cows do not become pregnant (as a result of bull or cow health). Abortion is when a foetus dies during the pregnancy, before birth. Late-term abortions are the easiest to notice, but abortions can happen at any stage of pregnancy.

It may be difficult to distinguish between cases of abortion and infertility if pregnancy testing is not carried out. In cases of abortion, scavengers are very quick to remove any trace of the foetus and afterbirth. These are two of the reasons for infertility and abortion investigations being performed retrospectively when a cow fails to calve when due.

How a vet can help?

Your vet will help you to diagnose the cause of the abortions or infertility and to develop a herd health program to prevent further losses.

It is important to investigate cases of infertility and abortion as soon as possible - ideally when a freshly aborted foetus and afterbirth are still available in the case of abortions. Some of the diseases that can cause infertility and abortion are only present in the cow for a very short period after the event. Your vet can collect samples for laboratory testing and this may include samples from the cow, bull, foetus and afterbirth. Fresh samples provide the best chance of a diagnosis.

Occasional cases of abortion will naturally occur in a herd. However, if the number of abortions is greater than 3-5% of cows, a thorough disease investigation should be undertaken. Subsidies are often available through DPIRD's Significant Disease Investigation program as data from these investigations is used to support our proof of freedom from reportable diseases.

A confirmed diagnosis and veterinary advice allow the producer to make informed and cost-effective decisions to minimise the risk of fertility and abortion issues in subsequent seasons. Preventative measures may include vaccination if it is available for the particular disease. They may also include bull and cow management, such as nutrition and the paddock they are in during pregnancy. Additionally, a general review of biosecurity practices is often beneficial to prevent other unwanted diseases in the wider herd.

Causes of infertility

Causes of infertility can be broadly grouped into bull and cow factors. A selection of issues are discussed below.

Bull factors

Management

Appropriate management of the bull is an important factor when considering infertility. This includes vaccination for infectious diseases, choice of genetics, conformation, body condition, the appropriate ratio of bulls to cows and the joining period. Bull

breeding soundness examinations are one way to ensure your bulls are fertile and in good health before sending them in to join. See the webpage managing and buying bulls for more information.

Fever/increase in body temperature

Conditions that cause a fever or increase in body temperature can damage sperm. It takes at least six weeks for a bull to produce new sperm so infertility will continue until maturation of new, healthy sperm.

Vibriosis (Campylobacter fetus ssp. venerealis)

Vibriosis is a venereal disease of cattle caused by the bacteria Campylobacter fetus ssp. venerealis. This particular bacteria lives in the prepuce of infected bulls. It only takes a single service to infect cows and heifers that have not been in contact with the disease before.

The disease usually goes unnoticed until the producer sees an abnormally high numbers of heifers and cows return to the bull at irregular intervals, abnormally high numbers of empty cattle at pregnancy testing, or abortions.

Vaccination is recommended to prevent vibriosis.

Trichomoniasis (Tritrichomonas foetus)

Similar to vibriosis, the protozoan parasite T. foetus is found in the prepuce of infected bulls. The signs are very similar to vibriosis and can cause infertility or early abortion. Often samples from the bull's prepuce are the best way to diagnose trichomoniasis as a problem in a herd.

Bovine herpes virus type 1

Bovine herpes virus (BHV) can cause genital disease in cattle. In bulls, BHV can present as infection of the penis and prepuce ranging from mild to severe. Infected bulls can be unable to serve completely or can also pass the virus onto cows, which may suffer from reduced fertility.

Cow factors

Management

Management of heifers and cows can have a significant impact on fertility. As for the bull, this includes their vaccination and trace element status, genetics, conformation, body condition, the ratio of bulls to cows and joining period. You can read more on managing cows on the webpages listed below:

Managing the beef breeder herd in southern Western Australia

Managing beef heifers to maximise productivity and profitability in southern Western Australia

Breeder and heifer management for rangeland cattle.

Bovine viral diarrhoea virus (BVDV)

BVDV is a complex disease that can lead to many different issues in a herd. Infertility and abortion are two common signs that can be seen with recent infection. Good biosecurity practices and vaccination are important measures to minimise the effect BVDV may have on your herd. Read more about BVDV.

Leptospirosis

In Australia, leptospirosis is caused by Leptospira interrogans serovars pomona and hardjo, and L. borgpetersenii serovar hardjo. It causes significant illness and abortion in cattle herds. It also has the potential to cause illness in people.

The main signs in cattle are return to oestrus due to early embryonic loss, dullness, lethargy and fever. It can also infect the reproductive tract of cows and heifers.

The disease is highly contagious and infected animals shed high levels of leptospires in urine. Cattle and humans contract leptospirosis from contact with body fluids of infected animals including cattle, pigs, rats and mice. It is important to follow a recommended vaccination program for leptospirosis in cattle as the disease in people can cause meningitis, kidney and liver failure if not treated early. Contact your doctor if you have any concerns.

Bovine anaemia due to Theileria orientalis (BATOG)

BATOG is a blood parasite that is spread by the bush tick (Haemaphysalis longicornis). Cattle under stress, such as late-pregnant cows, are most likely to be affected by BATOG and signs can include pale or yellow gums or vulva, weakness, abortion and sudden death. Read more about BATOG.

Bovine brucellosis

Bovine brucellosis is an exotic disease in Australia. It was eradicated from the Australian cattle herd after an extensive national eradication program that operated between 1970 and 1989.

Bovine brucellosis is caused by the bacteria Brucella abortus and is highly contagious. It may also cause disease in humans. It results in late-term abortion in cows and inflammation of the epididymis (the vessel which transports semen from the testes) in bulls. It is usually transmitted between animals and to people by contact with the placenta, foetus, foetal fluids and vaginal discharges from infected animals. Ongoing surveillance for the disease continues to demonstrate that Australia is free from the disease.

If you see signs of disease that could be brucellosis, contact your local DPIRD vet, your private vet or the Emergency Animal Disease hotline on 1800 675 888 immediately. Reporting possible signs of brucellosis protects human health and our livestock markets. Read more about brucellosis in animals.

Zoonotic diseases

It is important to remember that some diseases that cause abortion in cows can also cause disease in humans, such as leptospirosis discussed above. These diseases are known as zoonotic diseases and producers should practice good hygiene when handing calving or aborting cows. Remember to cover all cuts and abrasions and always thoroughly wash hands after handling aborted material and affected cows. Pregnant women should avoid handling aborting cows and aborted materials until a diagnosis has been made. Any producer with concerns about zoonotic diseases should discuss these with their doctor.

More causes of infertility and abortion in cows

A more extensive table of possible causes of infertility and abortion can be found below. Since infertility and abortion can be caused by different issues, it is important to call a vet to carry out disease investigations at the time to obtain a diagnosis.

Category

Disease

Viral

Bovine herpes virus type 1

Bovine viral diarrhoea virus (BVDV)

Bluetongue virus (reportable in Western Australia)

Akabane virus (reportable in Western Australia)

Schmallenburg virus (reportable in Western Australia)

Bacterial

Bovine brucellosis (reportable in Western Australia)

Campylobacteriosis (Vibriosis)

Listeriosis (zoonotic)

Leptospirosis (zoonotic)

Salmonellosis (zoonotic)

Q-fever (zoonotic)

Histophilosis

Other bacteria

Parasitic

Trichomoniasis

Neosporosis

Bovine anaemia due to Theileria orientalis group

Bovine babesiosis (reportable in Western Australia below the tick line)

Bovine anaplasmosis (reportable in Western Australia below the tick line)

Nutritional

Trace element deficiencies (such as selenium)

Body condition score

Other

Fungal infections

Plant toxicities

Genetic factors

Management factors

Any other severe illness or fever