



Different causes of Abortion in Sheep

Infectious causes of abortion are most common after day 100 of pregnancy. While sporadic losses are variably attributed to handling procedures or movement, an abortion rate in excess of two per cent is suggestive of an infectious cause and veterinary investigation is essential at an early stage. Enzootic abortion of ewes, *Toxoplasma gondii* and *Campylobacter* species cause over 80 per cent of abortion outbreaks in the UK. The cost of abortion is variably quoted as £85 per aborted ewe.

Every year AFBI receives hundreds of ovine foetuses that have been born before their time. The two most commonly diagnosed infectious causes of ovine abortions are Toxoplasmosis and Enzootic Abortion of Ewes.

Toxoplasmosis

Toxoplasmosis is caused by infection of ewes during pregnancy by the microscopic parasite, *Toxoplasma gondii*. Susceptible sheep are infected by ingesting food or water contaminated with the parasite. The parasite is highly resistant and can survive for long periods (over 500 days) in moist, warm conditions. The source of the contamination of feed and water are from recently infected cats which excrete millions of the parasites in the days following infection. Cats can become carriers of infection and can excrete smaller numbers of parasites at other times of unrelated illness. If a susceptible sheep becomes infected, she will show no sign of infection. However, infection during early pregnancy can result in foetal death and abortion. Infection during mid pregnancy will present in a flock with the occurrence of stillborn or weak lambs, sometimes accompanied by a mummified foetus. Infection in late pregnancy will result in lambs being born normal but infected with the parasite and immune. Vaccination is available to prevent infection of the pregnant ewe. Vaccination must be given at least four weeks prior to mating to be effective.

Enzootic Abortion of Ewes (EAE)

Enzootic Abortion of Ewes is caused by infection with the bacterium *Chlamydia abortus*. When an infected ewe aborts a large amount of the bacteria is shed in the placenta and uterine discharge for up to 10 days. Susceptible sheep are infected by ingesting this bacterium. Pregnant ewes with more than 5 to 6 weeks to go before they lamb are at risk of aborting dead lambs or producing weak lambs. The ewe herself can occasionally become ill due to retention of the after birth. When the bacteria enter a flock, extensive losses in the region of 30% of pregnancies can occur following with yearly loss rates of 5% of pregnancies.

Infection typically results in the abortion/birth of fresh dead and/or weak lambs during the last three weeks of gestation. The ewe is not sick and may only be identified by a red/brown vulval discharge staining the wool around the tail/perineum, and a drawn-up abdomen. Live lambs rarely survive more than a few hours despite supportive care. Vaccination is available to provide immunity and reduce shedding of the bacteria. Vaccination must be given at least four weeks prior to mating to be effective.

Campylobacteriosis

Campylobacter fetus subspecies fetus and Campylobacter jejuni are common causes of abortion, particularly where sheep are managed intensively leading to heavy contamination and unhygienic environments during late gestation. The main source of infection is purchased carrier sheep. The common presentation is abortion during late gestation although some lambs are carried to full-term and are born weak and succumb soon after birth.

All aborted ewes must be isolated immediately, and the main flock moved to other accommodation/pasture whenever possible. Treatment options are limited because infection has already spread rapidly through the group by the time the first abortions are recognised.

Management/Prevention/Control measures

Sheep should be managed in clean environments and not subjected to unhygienic conditions especially during late gestation. Particular attention should be paid to the feeding troughs/areas. Purchased sheep must be managed as a separate group until after lambing. Following infection, ewes are immune to further challenge and will not abort. A vaccine can be imported into the UK under licence.

Salmonella Abortion

Salmonella Montevideo, Salmonella Dublin and Salmonella Typhimurium have been associated with abortion and death in pregnant ewes. Sheep may simply be found dead with rotten lambs still present in the womb.

There are many potential sources of salmonellae in a group of sheep including contaminated feedstuffs and water courses, sewage effluent overflow, carrier cattle, and carrion. All feed must be stored in vermin-proof bins, but this is rarely achieved on many farms. Sheep should be fed in troughs that are tipped over and moved immediately after feeding. When sheep are fed using snackers, a clean area of the field must be used every day, but this advice is often ignored. Wherever possible, water should be supplied from a mains supply with ponds and surface water fenced off. If possible, pregnant sheep should be managed separately from cattle.

There is a significant zoonotic risk from suspected/confirmed cases salmonellosis, so it is essential that strict personal hygiene methods are used during and after handling sick sheep:

- Minimise the number of people with contact with such sheep.
- Remove and disinfect outer clothing after handling.
- Wash and clean thoroughly hands, arms, and face after handling

Summary

- Many infectious causes of abortion can also infect humans (zoonotic infection).
- An abortion rate more than two per cent is suggestive of an infectious cause and veterinary investigation is essential.
- All aborted ewes must be isolated immediately.
- Aborted material and infected bedding must be removed and destroyed to prevent spread of disease on your farm.
- Maintain a closed flock wherever possible.
- Purchased all flock replacements as maiden sheep whether ewe lambs or gimmers.
- Vaccinate all flock replacements against EAE and Toxoplasmosis (costs around £1-1.50 per pregnancy)

- All feed must be stored in vermin-proof bins
- Sheep should be managed in clean environments
- Water should be supplied from a mains supply with ponds and surface water fenced off

***Contact your local veterinary practice for more information on vaccinations and abortion testing.**