

Livestock Health Series

Trichomoniasis in Cattle

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Introduction

Trichomoniasis is a contagious venereal disease of cattle caused by the protozoal organism, *Tritrichomonas foetus*. If introduced into the cattle herd by an infected bull or cow, this disease can lead to major economic losses due to infertility, low pregnancy rates, extended calving season and occasional abortions in pregnant cows and heifers. It can be very costly to eradicate from a herd. Trichomoniasis is not a human health issue. The Arkansas Livestock and Poultry Commission considers trichomoniasis to be a reportable disease in cattle.

Transmission

T. foetus is transmitted sexually from infected bulls breeding uninfected cows/heifers or by uninfected bulls breeding infected cows. Transmission from cow to cow, bull to bull or by environmental exposure has not been reported. Once transmitted to cows, the protozoa attaches to vaginal epithelial cells, multiplies and then spreads to the uterus. Infected cows experience infertility and early pregnancy loss due to an inflammatory response to the protozoa, resulting in a return to estrus (cycling). An infected cow may show a very subtle, mild vaginal discharge one to three weeks after becoming infected, but in most cases, no outward signs are apparent. Often, the only sign that cows are infected are poor pregnancy rates and an extended breeding season.

Because the mild symptoms can easily go unnoticed, the disease can be present in a herd for a long time before it is suspected or diagnosed. The organism typically causes the loss of the calf just a few weeks into the pregnancy, rendering

the cow “open.” Late-term abortions have been reported but are very rare. The majority of infected cows will clear the infection in two to four months, but they will serve as a source of infection if bred again before the infection has cleared. Cows do not develop immunity to the disease. Recovered cows can be reinfected the next breeding cycle if care is not taken to ensure that the bull is not a carrier.

An infected bull has virtually no outward signs of infection, but the bull is the main source of transmission for the herd. In bulls, the organism lives on the tissue lining of the penis and preputial sheath. Once infected, bulls stay infected for life as there are no safe or reliable treatments available for Trichomoniasis. Simply put, Trichomoniasis is usually introduced into a herd by the introduction of one infected animal – an infected bull.

Diagnosis

Tritrichomonas is easier to detect in bulls than in cows. The organisms can live long term attached to cells or in secretions of the bull’s reproductive tract. Cows eventually shed the infection, but some studies have detected *T. foetus* in cultured vaginal mucus. Prior to testing a bull for presence of the organisms, the bull should have two weeks of sexual rest to allow the organisms time to build up to a detectable level. A licensed and accredited veterinarian can collect skin and secretion samples from the preputial sheath of the bull by inserting a plastic cannula that is either dry or containing a sterile wash. The obtained sample is placed into a special growth medium that can be used for two types of tests: a culture test or a polymerase chain reaction (PCR) test. Confirmation of infection by

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a culture test is done via three separate culture growth checks at weekly intervals. However, to confirm that the organism found on culture is indeed *T. foetus* and not another species of *Trichostrongylus*, a PCR test should be performed. Although the PCR test is more expensive, results are much quicker to obtain and will, at the same time, eliminate the possibility that the culture test was a false positive. For more information about testing, consult with a cattle veterinarian or the Arkansas Livestock and Poultry Laboratory.

Treatment and Prevention

Currently, there is no approved treatment protocol for cattle infected with trichomoniasis. However, cattle producers can protect their herds through biosecurity and biocontainment.

- Only purchase virgin bulls if possible. The bull should be no more than 12 months of age unless tested prior to adding the animal to an established herd.
- If purchasing a bull with a history of prior breeding experience, or if you are renting or borrowing a bull for breeding, have the bull tested for trichomoniasis before turning the bull out with the cows. The test is recommended to be performed as part of a breeding soundness exam.
- If you suspect a problem in your herd, test your current bull battery. Any infected bulls are required to be sold for slaughter only per Arkansas regulations.
- Ensure that bulls from neighboring properties stay out of your cow pasture.
- When purchasing females, purchase virgin heifers and/or cows from a reputable source.
- Pregnancy check cows in a timely manner after breeding to identify problems early. Cull open cows. If trichomoniasis is diagnosed in the herd, cows should be sold for slaughter only.
- Keep good records of a herd's reproductive efficiency to identify possible problems.
- Maintain a defined breeding season and utilize pregnancy checks to verify success.

A vaccine is available to aid the control and prevention of this disease. The vaccine can be useful in cows but does not protect bulls from becoming infected. Vaccination requires two injections, typically administered two to four weeks apart. Consult with your veterinarian when starting a trichomoniasis vaccination program for your herd.

Breeding Bull Shipment Regulations

Cattle producers should be aware of trichomoniasis testing requirements prior to moving cattle. The Arkansas Livestock and Poultry Commission is the governing body that sets and enforces such requirements. Current trichomoniasis testing and bull movement requirements can be found at www.aad.arkansas.gov/regulations.

You may also contact the Arkansas Livestock and Poultry Commission by phone at (501) 225-1598, online at www.agriculture.arkansas.gov or consult your local food animal veterinarian.

References

- Aiello, Susan, Michael Moses and Dana Allen. Trichomoniasis. *The Merck Veterinary Manual*. 11th ed. Kenilworth: Merck & Co., Inc., 2016. pp. 1384-1385. Print.
- BonDurant, R.H., C.M. Campero, M.L. Anderson, Hoosier, Van K.A. Detection of *Trichostrongylus foetus* by polymerase chain reaction in cultured isolates, cervicovaginal mucus, and formalin-fixed tissues from infected heifers and fetuses. *J Vet Diagn Invest*. 2003;15(6):57984.
- Cockcroft, Peter, ed. Bull health and reproductive biosecurity. *Bovine Medicine*. 3rd ed. Ames: Wiley Blackwell, 2015. pp. 258-260.
- Corbeil, L.B., M.L. Anderson, R.R. Corbeil, J.M. Eddow, R.H. BonDurant. Female reproductive tract immunity in bovine trichomoniasis. *Am J Reprod Immunol*. 1998;39(3):18998.
- Radostits, Otto, Clive Gay, Kenneth Hinchcliff and Peter Constable. Diagnostic summary of causes of abortion in cattle. *Veterinary Medicine: A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs and Goats*. 10th ed. Edinburgh and New York: Saunders Elsevier, 2007. pp. 975-976. Print.

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