Bovine Trichomoniasis

When I consider the diseases or problems that can seriously affect a breeding program, Bovine Trichomoniasis is one that comes to mind and deserves to be discussed. This disease process has had devastating affects on both the beef and dairy industries in the past decades, and can be insidious in nature and virtually impossible to treat. Significant economic losses have been felt across the world, and despite increased awareness and the development of easier testing methods, Trichomoniasis remains a potential threat to the livelihoods of many.

*Tritrichomonas foetus* is considered a protozoa - a single-celled microscopic organism that has the ability to move around in its environment by using whip-like structures called flagellae. *T. foetus* must remain at around body temperature in order to survive and if taken from its proper setting, will die rather rapidly. Trichomoniasis is a disease process that has been recorded and studied extensively in multiple animal species, humans included, and can be transmitted in a variety of ways and can affect a number of different body systems. In cattle, *T. foetus* lives in and is transmitted by the reproductive system.

Considered a venereal disease, trichomoniasis is transmitted sexually and in turn directly impacts our breeding industry. *T. foetus* infects and lives in the mucosal tissues that line the reproductive tract, including the prepuce and distal penis of the bull and the vagina and uterus of the cow. Very few obvious clinical signs have been reported, often this is a disease that may be discovered in hindsight, for example when a producer's calving season becomes much more spread out than would normally be expected or a great number of open cows at pregnancy testing time are diagnosed.

Even though both bulls and cows can become infected with the organism, each sex handles the infection quite differently - some can overcome the disease with time, others will remain constant carriers of the problem. Bulls often show no signs of disease, generally there is little to no inflammation of the tissues in question, and an infected bull's sexual behavior is usually not affected in the least. Unfortunately, this lack of inflammation means that the body's natural defenses are not honed in on ridding the animal of the protozoa and so, many bulls become long-term carriers and the number one transmitter of *T. foetus* in the herd. Older bulls with deeper tissue
folds will often carry the organism for longer periods of time than younger bulls in comparison.

Cows will be impacted the most in an outbreak of *T. foetus* but generally have the capability of overcoming the disease on their own to hopefully return to breeding. A cow infected with *T. foetus* carries the motile organism around in her reproductive tissues and this creates a good deal of inflammation in this environment. Once the tract becomes inflamed, it attempts to naturally flush itself out to rid the cow of infection and toxins created in the immune-based battle. Depending on if the affected cow is bred and where she may be in her gestation, this can be observed as absolute infertility, embryonic death, or abortion by the producer. Generally, breeding females will carry the infection for only a number of heats, or lost breedings before her body is able to clear the infection, but *T. foetus* has been proven to carry through complete gestations in some experimental studies. Outbreaks can produce significant economic loss by increasing numbers of open cows in the herd, and by creating lengthy, non-uniform calving intervals. Unfortunately, there is no approved treatment for cattle due to food-residue issues and so culling affected animals is one of the only ways to practice safe breeding.

Over the past three decades, *T. foetus* has shown a steady decline in it's prevalence in North America - this is mostly due to increased producer awareness, the use of artificial insemination in the breeding herd, and the development of easy-to-use testing methods to identify the protozoa. Testing procedures are focused on the bull and involve taking a sample of smegma from the prepuce and the distal penis. Your veterinarian may recommend either tests; the InPouch system where the sample is applied to appropriate medium and incubated and read over a set of consecutive days, or the PCR test where the sample is sent to a lab and screened directly for evidence of the organism.

In the not-so-distant past, *Tritrichomonas foetus* affected almost fifty percent of open range beef herds in North America. We have come a long way in our knowledge of the disease process and our control of its spread throughout our herds by testing appropriately, and culling when need be. This no longer needs to be a devastating disease on our economy or on our industry! So, when the vet asks you, "Are we *Trich.* testing your bulls today?" consider all your options, you may not have heard of the organism in your geographic region, but all it takes is one infected bull to enter the scene and one could be in serious trouble.

**Catherine Colodey, DVM**  
Prairie Animal Health Centre of Weyburn  
Weyburn, SK