

Bovine Trichomoniasis

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Bovine trichomoniasis (Trich) is a **venereal disease** of cattle caused by the protozoan *Tritrichomonas foetus*. This disease causes early pregnancy loss and occasional late-term abortions; it may also extend the breeding/calving season.

Although losses are observed in the cow, *T. foetus* lives on the surface of the penis and prepuce of the bull and in the reproductive tract of the cow. Trich prefers a reduced oxygen environment, and it multiplies in the small folds of tissue (crypts) on the bull's penis. Because older bulls have more numerous and deeper crypts and are more easily infected, using young bulls is part of a disease management strategy. There are no obvious signs of Trich in the male, and pregnancy loss is the only sign of the disease in the female.

Transmission of the disease occurs during natural breeding. A bull can infect a cow and a cow can infect a bull. However, most infected cows eventually clear the infection. Once a bull is infected, it remains so for life. Therefore, most control programs focus primarily on the detection and elimination of infected bulls.

During breeding, organisms from the surface of the penis are left in the vagina

where they multiply and invade the uterus to create an infection. Cows can still conceive during the few weeks it takes for the uterine infection to develop. Once the organism causes sufficient damage to the lining of the reproductive tract, the cow miscarries or aborts. Cows will naturally clear the infection within a few weeks to a few months and experience a brief period of immunity to the disease. After clearing the infection, cows can rebreed and carry a fetus to term. The period of immunity, though, is short and will not protect subsequent pregnancies if the cow is re-exposed to an infected bull.

Cows exposed to Trich cannot be considered safe in calf until they are at least 120 days pregnant; open cows cannot be considered free of infection until they have had at least 90 days of sexual rest and are examined and cleared by a veterinarian. Only then should they be placed back into the breeding herd. All newly acquired cows that are less than 120 days pregnant should be isolated from the breeding herd. They may be placed in the breeding herd once they are four months pregnant.

Because approximately 2 percent of infected cows will have a swollen uterus that contains pus (pyometra) and remain infective, all open cows should be examined by a veterinarian. Cows with pyometra should be sent to slaughter. There is no

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treatment for infected bulls; send them to slaughter.

Trich should be suspected in herds with poor conception rates and extended calving seasons. Infected herds can produce conception rates that range from slightly subnormal to 50 percent or lower, depending on the length of time the disease is in the herd and the number of animals that are infected. Conception rates in herds with controlled breeding seasons of 90 days or less will be even poorer. Shorter breeding seasons expose the problem more dramatically and can actually reduce the long-term production and economic losses caused by herd infection.

Because Trich develops gradually and is not readily apparent, it is better to prevent exposing the herd to the disease rather than trying to control or eradicate it. Trich enters a herd or ranch *only* via infected bulls, cows or heifers. Again, transmission is from infected bulls to cows or from infected cows to bulls. To eliminate Trich from a herd, allow infected cows to clear the infection and eliminate infected bulls altogether.

A vaccine is available for healthy cattle to aid in the prevention of disease caused by *T. foetus*. Use of this vaccine in herds with high risk of exposure has been shown to help reduce the economic impact of Trich when administered properly and in exact accordance to the label. It has also been shown to help infected cows recover more rapidly. This vaccine does not prevent all abortions; however using it in addition to other best management practices will minimize reproductive losses.

Economic losses caused by bovine trichomoniasis can be avoided or minimized by practicing sound biosecurity principles:

1. Maintain good perimeter fences to segregate cattle of unknown status. Fences are the first line of defense in preventing the introduction of Trich in the herd.
2. Keep the bull battery as young as possible. Buy only virgin bulls and heifers, preferably from the original breeder. Unless the virginity of bulls can be positively confirmed, test all bulls before adding them to the herd.

All bulls of unknown status should have three negative tests using PCR or culture. These tests should be administered at least one week apart, and bulls should have no contact with cows within one week of the initial test.

3. Implement a defined breeding season. Trich can go undetected in continuous-breeding herds.
4. Identify herd sires and record the breeding group of each bull. If the herd becomes infected, this will make it easier to isolate the problem and start management protocols to eliminate the disease.
5. Consider keeping bulls in the same breeding groups for several breeding seasons. Should there be a false negative bull in the battery, this will keep uninfected cattle from being exposed.
6. Consider small sire groups (but not necessarily single-sire), versus large sire herds, to avoid infecting many bulls in a single season. Monitor pregnancy closely in one-herd grazing systems and implement an annual bull testing program to detect introduction of Trich during the first breeding season.
7. Consider artificial insemination to avoid introducing Trich or to help break the cycle of infection in a herd. Reputable semen companies repeatedly test bulls for many diseases including Trich, to ensure the semen is not contaminated.
8. Avoid buying open or short-bred (less than 120 days) cows. Open or short bred cows from unknown sources are particularly risky and must be quarantined and examined before they are added to the herd.
9. If you buy replacement cows, isolate them from the existing herd during the first breeding season.
10. If biosecurity measures cannot be adequately implemented or other risk factors exist for the introduction of Trich into the herd vaccinating the cow herd can be utilized to help mitigate economic losses.

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