



'Trich' Update

Trichomoniasis is no longer just a disease affecting the West.

by Kindra Gordon

A recently released report for Missouri (from March through November 2010) shows about 2,000 Missouri bulls have been tested for trichomoniasis ("trich").

Trich is a reproductive disease in cattle caused by a protozoan parasite that results in early pregnancy loss. It is passed from bull to female during breeding and infected bulls show no symptoms.

"For years it has been viewed as a disease in western states and those of us in the Midwest were not too worried about it. However, in the last five to 10 years, the disease has surfaced on more Missouri farms," says Eldon Cole, a livestock specialist with University of Missouri Extension.

The results show 90 bulls in the state (or 4.5% of all bulls in Missouri) were positive for trich.

"That 4.5% may not seem too bad unless you have a bull in that category and your 2011 calf crop could be reduced," Cole says.

Tell-tale signs of trich include:

- 1) cows that re-cycle due to early embryonic deaths;
- 2) a high percentage of open cows or short bred cows; and
- 3) a delayed and strung-out calving season.

Trich is a sexually transmitted disease that shows no outwardly visible signs. The bull is the carrier, especially older bulls, so know where your bull has been.

"Other threats are rental bulls and bulls who like to jump fences and visit the neighbors. This can work both ways with your bull and the neighbor's bull," Cole explains. "Buying open or short-bred cows can pose a risk also."

Economic losses caused by this venereal disease can occur due to smaller and less uniform calf crops, costs of culling and then adding replacements, and increased veterinary expense. Some models estimate the loss of income caused from trichomoniasis can be 22-37%. In 2000 a group of Colorado producers figured the effect of trichomoniasis in their herds at \$143.17 per cow.

So how can you combat this costly disease? It starts with understanding what causes it and then designing a plan to keep it out of your operation.

What is trich?

Trichomonas foetus is a single-celled protozoon that reproduces by dividing itself. It has an affinity for cattle but has also been found in some other domestic animals. Drying or high temperatures rapidly kill the protozoa; thus survival in

the environment outside the animal is short-lived.

The effect to the herd from the disease can be poor pregnancy rates — as much as 40% or more open cows, a spread-out calving season and/or ultrasound abnormalities revealing dead fetuses.

Are there symptoms to look for?

Unfortunately, bulls infected by *T. foetus* are entirely without symptoms, says Russ Daly, South Dakota Extension veterinarian. Semen quality and sexual behavior are not affected. In bulls the organism localizes in the crypts, or microscopic folds within the skin surface of the penis, sheath and end of the urethra. Because these crypts become deeper as the bull ages, there is an association between age and infection: mature bulls are more apt to become infected and stay infected. And, strong evidence exists that once a bull is infected with trichomoniasis, he is infected for life, according to Daly.

Infection of the cow takes place at breeding. After the protozoa attach to the lining cells of the vagina, they form colonies that spread to the uterus and oviducts, resulting in an inflammatory response.

Daly reports symptoms in the cow will depend on how quickly the inflammatory response takes place to the *Trichomonas* infection. For example in a rapidly developing infection, inflammation may result in early death of the developing embryo. If this happens before day 18 after breeding, the cow may return to heat on her next 21-day cycle. Usually this is not the case, as the inflammation due to trichomoniasis usually takes 50-60 days. This results in delayed (more than 21 days) return to estrus, possibly with abortion of a small fetus (which rarely is noticed on pasture), or formation of a pyometra, a pus-filled uterus. In some cases, infection may take seven to eight months to overtake the fetus and abortion to occur, but this is relatively uncommon.

Unlike bulls, infected cows will normally mount an immune response and clear themselves of infection by two to four months. This means that an infected female may lose her first conceptus, clear the infection, return to estrus, and conceive a pregnancy

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that goes to term, Daly says. This immunity is short-lived, however, and cows will be susceptible to infection in subsequent years.

How do you test for trich?

Daly says since the bull is a chronic (lifetime) carrier and cows clear the organism two to four months following infection, herd diagnosis usually is made by testing bulls.

Diagnostic testing of smegma samples (scrapings or washings) from the sheath are necessary for diagnosis. It is recommended that bulls have at least two weeks of sexual rest before undergoing testing. And, in order to make a definitive diagnosis, it is recommended bulls be sampled by a veterinarian once a week for three weeks in a row. Serially testing bulls in this manner raises the accuracy of the test to 99.8-99.9%.

How do you treat trich?

There is currently no approved, effective treatment for trichomoniasis in cows or bulls, according to Daly. Thus, if a bull

tests positive, he should be removed from the herd and sent to slaughter.

For herds that diagnose a problem with trichomoniasis, management strategies need to be implemented to reduce the effect of the disease the next breeding season. These should include:

- 1) Test all herd bulls and remove positive bulls. Alternatively, producers may opt to simply sell all bulls annually and replace them with virgin bulls.
- 2) Cull all open and late-calving cows. These are the cows most likely to be carriers of trich.
- 3) Divide the herd into two: a clean herd and a "dirty" herd. This is only to be considered when facilities and personnel issues are optimal. The "clean herd" would only consist of virgin heifers and cows not exposed to infected bulls. The "dirty" herd would eventually be culled down by attrition (culling over time).
- 4) Vaccinate. By itself, vaccination will not clear up a trichomoniasis problem, Daly says. He adds that these products, when used according to label directions,

show effectiveness in the female but none whatsoever in the bull. It is important to realize that the vaccines will not prevent transmission of *T. foetus* or infection with the organism, but they will limit duration of infection and result in more pregnancies being carried to term. Vaccine is best used in situations where bulls cannot be tested or removed or in other high-risk situations.

What other tips can keep trich out?

Daly says basic biosecurity steps can also keep a herd clean of the disease. For example, incoming cows should be virgin heifers from a reputable source. When it comes to bulls, purchase only virgin bulls or bulls tested negative via three weekly tests. He says using artificial insemination (AI) and synchronization programs as much as possible can also decrease the need for bulls and the risk of exposure to trich. Lastly, maintain good fences and avoid communal grazing situations, if at all possible. **HW**