

Trich Prevention: Aware

Trich is bound to keep showing up in more unsuspected regions than the West, given interstate marketing and movement of cattle.

by **Kim Holt**

Five to 10 years ago, Missouri's cattle industry didn't worry too much about the bovine venereal disease known as trichomoniasis (trich). After all, it is a disease found only in western states, right?

Fast-forward a few short years, and that answer is certainly 'no.' Especially when one considers that at least one positive case of trich was reported in 39 of 114 Missouri counties between March 1, 2010, and Aug. 31, 2011.

In June 2011, Arkansas — Missouri's neighbor to the south — found 20 cases of trich within six months. These findings spurred the state to enact an emergency measure for intrastate bull movement, a regulation that has since been made permanent there.

And this past June, Iowa encountered its second case of trich. As a state, Iowa doesn't have a trich-testing requirement on the



books, but it does require positive cases be reported to state authorities.

Trich is a growing problem, believes Craig Payne, University of Missouri (MU) Extension veterinarian. But, he adds, more incidences are turning up because producers and veterinarians are more aware of its existence and are testing for it.

Veterinarian D.L. Step, Oklahoma State University (OSU) Food Animal Extension specialist, shares his take: "As animals have been marketed and transported from different parts of the country, bringing in an animal that looks OK has brought in a carrier of trich. Therefore, the disease is being established in many other states in the U.S." — and is no longer just in the West.

All-out educational effort

In the Show-Me State, outreach and educational efforts conducted throughout the state have put trich on the minds of producers and veterinarians alike, shares Eldon Cole, a livestock specialist with MU

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Extension in Mount Vernon.

Cole is located in the southwestern corner of the state, the regional leader for positive trich cases in Missouri (see maps on pages 61 and 62). He explains, "Southwest Missouri is where we have a heavy cow concentration." It's also one of the areas where cows from drought areas have ended up.

"Most of the time we worry about trich coming in on a bull — an older bull," Cole explains. "But we realize the cows that are shipped out of drought areas are definitely one source of infection, too."

"Our educational approach is to discourage

CONTINUED ON PAGE 62

Assess your herd's risk for trich

As a veterinarian and educator, D.L. Step, Oklahoma State University Food Animal Extension specialist, often walks producers through the trichomoniasis (trich) risk-awareness thought process. He says if producers have records, are managing their herd, have very good reproductive efficiency, and are purchasing young virgin bulls or using artificial insemination (AI) with semen from reputable companies, then the risk of their herd being infected with trich is going to be fairly low.

On the other hand, if a herd is exposed to other animals that may be carrying trich, if producers don't have an opportunity to keep records to realize there is a reproductive problem occurring, or if producers are bringing in bulls that could be carriers, then the risk is high and, therefore, this disease should be of concern.

Step explains that trich is a sexually transmitted disease in cattle caused by the parasitic protozoan *Trichomonas foetus*. The problem, he finds, is many producers look for clinical signs of this disease because it is, indeed, caused by an infectious organism. However, that is where trich is tricky; it's a silent disease.

"The bull is one of the primary carriers," Step says, "but he will not exhibit any outward abnormal clinical signs." Furthermore, the organism does not affect semen quality, so a bull can pass his semen test and, yet, be a carrier of *T. foetus*.

Efficient transmission

The *T. foetus* organism resides in the tissues lining a bull's penis,

prepuce and sheath. Studies show that mature bulls are more likely to become infected and stay infected with trich. Since there is no treatment, all trich-positive bulls need to be culled for harvest and replaced.

The usual means of trich transmission in a herd is an infected bull exposing unexposed cows or infected cows exposing uninfected bulls.

The organism causes varying degrees of reproductive inefficiency, namely early embryonic death. Trich doesn't interfere with a cow's ability to get bred, but rather to stay bred. If infected by trich, a female may lose her first conception, clear the infection, return to estrus, and conceive a pregnancy that goes to term.

The results of this scenario are a drawn-out calving period within the cow herd if bulls are left with the cows long enough. Therefore, it's often the open and late cows that are carrying the disease, and they too need to be culled and replaced.

Step reports that the disease is very efficient at transmission.

"An infected bull can infect up to 80% to 90% of the cows he breeds," he explains. A good example of what a herd could experience if 100 cows are exposed to a percentage of infected bulls within a defined 60- to 90-day breeding season is illustrated in Chart 1.

According to this chart, some 60% of females will show infertility — or, in other words, be open at preg check, therefore confirming

ness, Vigilance are Key

Maps of trichomoniasis cases in Missouri

As these maps show, no one knows if their herd is free from trich infection until it's been tested. Colorado State University researchers say the foundation for building a prevention program for your herd is testing all bulls that will have exposure to your cows. See cases of positive trichomoniasis from January 2012 in Fig. 2 on page 62.

Fig. 1: Counties with incidents of positive trichomoniasis test results, March 2010 - April 2010



Source: Map provided by Craig Payne, director of Veterinary Extension & Continuing Education, University of Missouri.

that the biggest source of economic loss is from the reduction of the calf crop. This isn't to mention the cost of testing, culling and replacing infected bulls and females, all of which are big economic hits for trich-infected operations.

Borrowed or leased bulls

Veterinarians greatly caution producers on the practice of borrowing, leasing or buying used bulls, but Step does acknowledge there can be economics and genetics involved, especially for seedstock producers.

He explains, "There are some older bulls that are very high quality, very fertile and have good genetics. They just need to be tested before use." This is a requirement in many states, including in his home state of Oklahoma, that have intrastate (in-state) regulations in place that require trich-testing of bulls that have a change in ownership/management.

"There are going to be cases in which you know the bull, it's test-negative, and you should be OK. However if you don't know the history, it's not tested, and is having reproductive problems, then that should be a flag. Have him tested or look for another bull," he recommends. "It all goes back to risk, assessing the risk, and working with your veterinarian."

Preventing the disease

Experts like Step agree that if you can keep trich out of your herd in the first place, you'll be money ahead. One of the biggest

keys to prevention, they say, is know your bull source — buy from a reputable breeder.

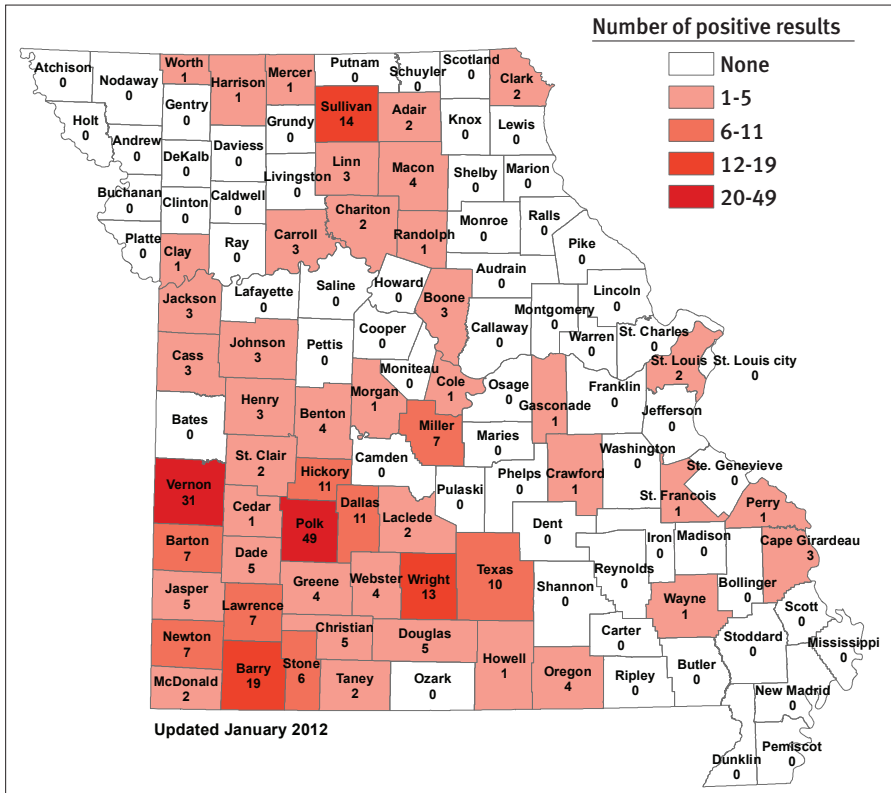
Step also recommends these trich-prevention measures:

- ▶ Keep records in order to evaluate the reproductive status of your herd. These can help alert you to a potential problem.
- ▶ Diagnose pregnancy (i.e., preg-check in a timely fashion).
- ▶ Cull any open female.
- ▶ Trich-test bulls about two weeks after breeding season. This is the best early indicator of a trich problem. Cull any positive bulls immediately for harvest.
- ▶ Keep young virgin bulls or test-negative bulls in fences; assess the risk if they cross fence lines or commingle with neighboring bulls.
- ▶ Employ trich vaccination as a management tool in at-risk herds.
- ▶ Utilize good husbandry practices: prevent and control other reproductive diseases, keep cows in proper body condition so they can maintain pregnancy.

Other management practices that may be helpful for trich prevention include the purchase of virgin replacement heifers from known sources. If cattle do run in common on rangelands, make sure the majority of cows are bred before turning out or that only clean, tested bulls are allowed.

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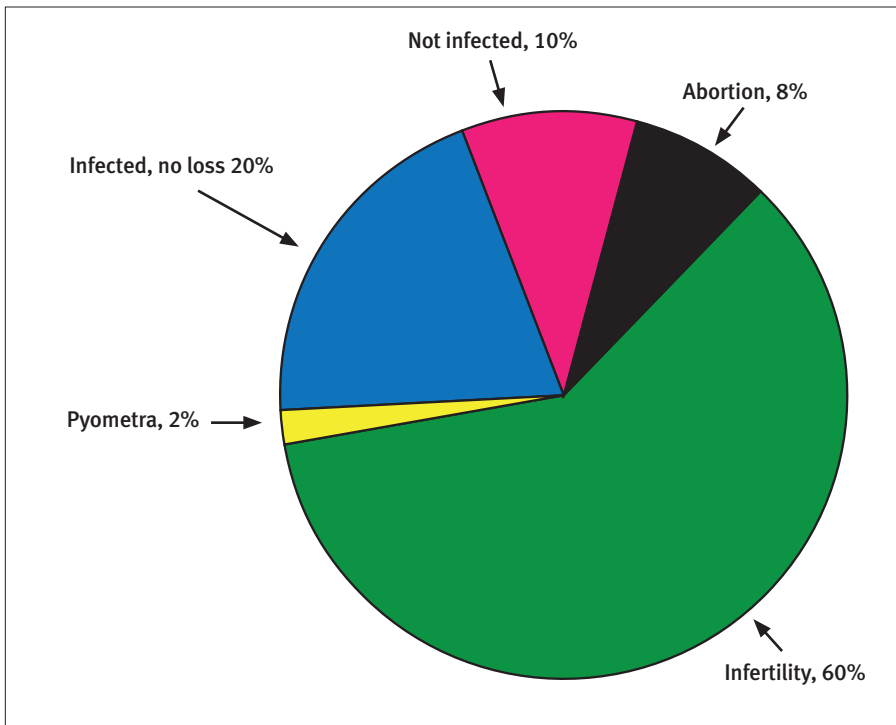
Fig. 2: Number of trichomoniasis-positive results by county, January 2012



Source: Map provided by Missouri Department of Agriculture.

Chart 1: Example trich infection in 100-head herd

Trichomoniasis is very efficient at transmission within a herd. “An infected bull can infect up to 80% to 90% of the cows he breeds,” reports Oklahoma State University’s D.L. Step, veterinarian. This chart is a good example of what a herd could experience if 100 cows are exposed to a percentage of infected bulls within a defined 60-90-day breeding season.



Source: Oklahoma State University Food Animal Extension

people from buying cows that are open without first isolating them thoroughly and undertaking management practices before they’re introduced into the main cow herd.” This can help negate trich problems, he says.

He adds, “We’ve been a little more aggressive about focusing on trich down here; more veterinarians have been involved. In fact, one veterinarian developed it in his own herd, and that made him very aware.”

Payne shares that the state of Missouri conducted an “all-out effort” for a year and a half to make producers aware of the problem, and to inform and educate them, as well as train veterinarians on how to test for this disease, which can unknowingly steal calf crops and livelihoods.

Until this past February, Payne says, it seemed like trich was all he discussed at meetings. He and Cole say the state has been saturated with trich information. State Veterinarian Linda Hickman says this educational effort is helping the state gain control over the disease.

Payne adds, “It was interesting over time to watch the awareness grow. Trich had typically been thought of as a western states disease, so nobody thought of it.”

Early on, few hands went up at producer meetings when he questioned if any had heard or knew about trich. But toward the end of the educational campaign, Payne shares that some three-quarters of participants would raise their hands.

“We’ve had good press coverage of trich. Most people realize they are at risk of losing a part or big part of a calf crop if they do not utilize proper diagnostics to find out what the problem is,” Cole says.

“Unfortunately, we don’t have a lot of people who do trich testing when they pull the bulls out. Also, we wish there was more pregnancy-testing done. Preg-checking is the basis for a lot of good management decisions,” he explains. “That’s a good way to find out if you have an open cow a little bit ahead of time rather than waiting to see if she has a calf in her.”

Cole continues, “We try to encourage good vigilant observation of pregnant cows to see if they come back into heat. The one thing I try to get across to producers is they will save some money in the long run if they just do some preventative medicine.”

For a number of years, Extension, in cooperation with several veterinarians, has hosted one-day bull clinics in southwestern Missouri. These clinics encourage producers to bring their bulls and have them tested for breeding soundness.

“In the last several years, we’ve tried to focus more on getting them to trich-test bulls, too,” Cole says. “We get pretty good response. Some clinics might have 30 to 40 bulls come in.”

He says that, in his region, they also have a number of folks whose livelihood is renting out several hundred bulls a year. “They have bought into this (testing) pretty well. That was an educational coup for us.”

As a state, Missouri used to just require interstate trich-testing of bulls, but added intrastate rules last September. Non-virgin bulls and all bulls over the age of 24 months must be trich-tested before changing ownership or possession within the state.

Testing is the only way to confirm trich, and requirements do vary by state. Modern

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— Craig Payne

PCR (polymerase chain reaction) tests are far more sensitive than the traditional method of

culturing samples and looking for the trich organism under a microscope.

A bull can be declared trich-free with one negative PCR test, whereas the culture method requires three negative tests. Management of the disease involves culling infected bulls and open cows and replacing them with young, tested bulls and/or virgin heifers.

“This disease can have a devastating financial impact because of poor calf crops and expenses associated with cleaning up an infected herd,” Payne reminds. “At today’s calf prices, that is a significant financial loss.”

