Controlling Trich

As Western states contemplate a uniform trichomonosis control program, California confronts its trich problem with enhanced regulations.

Story by
MEGHAN RICHEY

With estimates as high as 16% of Western bulls infected with trichomonosis (trich), it's easy to understand why 11 out of 19 Western states have implemented trich control programs and state regulations. Requirements and procedures vary greatly by state, but few states have seen much reduction in the disease, which wreaks financial havoc for producers by causing early-term abortions, resulting in reduced calving percentages and extended calving seasons.

Fifteen Western states — including Alaska, Arizona, California, Colorado, Hawaii, Idaho, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oregon, South Dakota, Texas and Utah — have indicated they're interested in seeing uniform regulations across all Western states so the disease can be confronted with a united front.

California in particular has seen more problems with the disease despite having a control program in place since 2003 — at least 50 infected herds per year. For each infected herd there are usually four to six exposed herds, though the record stands at 13.

"The California program has great industry support, but we haven't seen great results. And so the cattle industry in our state pushed and said we really need to do something to get better results with this program," explains Kent Fowler, Animal Health Branch chief in the California Department of Food and Agriculture (CDFA). CDFA listened to the industry's requests, and in October 2007 the control program underwent significant enhancements.

"The most important change we made to the program is that upon confirmation of a positive animal, all herdmate bulls must be quarantined until they have had three negative tests at the owner's expense, and all positive bulls must be slaughtered since there is no cure for bulls and they continue to spread the disease," Fowler says.

As Western states consider uniform standards, here's a look at how the California program has been enhanced.

Control efforts

Sale bulls. Public saleyards must post a notice in a prominent place stating, "All bulls 18 months of age and older must have a negative trichomonosis test or be consigned as slaughter only."

Bulls 18 months and older must go direct to harvest or to a feedlot designated for harvest unless they have a negative trich test within 60 days of the sale. They can still sell at public saleyards, but must be "green-tagged" for harvest only.

Infected herds. Upon confirmation of a positive animal, all herdmate bulls must be quarantined until they have had three negative tests, at the owner's expense, at least seven days apart but not more than 28 days apart, in order to move anywhere except to harvest.

Written confirmation must be provided to CDFA once an infected animal is harvested.

Neighboring/exposed herds. Upon confirmation of a positive animal, an epidemiological investigation will be conducted by CDFA.

Bulls from exposed herds will be quarantined and require one negative test, at the owner's expense, to move anywhere except to harvest.

Pasture herds moving interstate. To move interstate, breeding bulls must have a negative trich test within the last 12 months.

State-to-state notification of positive herds is required.

Test requirements are the same as for infected or exposed herds.

Bulls entering the state. Bulls 18 months of age and older entering California require a negative test within the last 60 days.

Bulls moving into California on a pasture-to-pasture permit require a negative test within the last 12 months.

Exceptions: bulls entering the state for immediate harvest, semen collection or exhibition where they will not commingle with other cattle.

Tests and laboratories. All trich tests are now official and are reported on official state forms.

Veterinarians must be approved every two years through training provided by CDFA to perform trich sampling.

Labs and veterinary clinics must be approved through the California Animal Health and Food Safety (CAHFS) Laboratory training to culture trich samples.

Official identification (ID) of individual bulls is required, with options including U.S. Department of Agriculture (USDA) metal silver brite tags, USDA-approved electronic identification (EID) devices or breed registry tattoos with corresponding paperwork.

Positive test results must be reported to CDFA within two days of diagnosis, and the results of all tests, including negative tests, must be reported to a district Animal Health Branch within 30 days.

Positive samples may be confirmed through DNA testing by polymerase chain reaction (PCR) at the CAHFS lab, but it is not required.

New challenges

After the enhanced regulations had been in place for several months, it became apparent that some new challenges had arisen, so industry representatives including producers, livestock marketing associations and saleyards met with staff from CDFA earlier this year to discuss some of the issues.

Fowler says one problem has been that saleyards feel there is inequity built into the program since the regulations apply to bulls sold at auction but not those sold through private treaty. The perception is that more bulls are now being sold private treaty that previously would have been sold through salebarns.

"We didn't extend the enhanced regulations to private treaty sales for two reasons: First, most producers who buy bulls private treaty already take the initiative on their own to require a trich test before they'll purchase the bull. Second, we just don't have the personnel capabilities

Testing and retesting

There are many diseases that can cause fertility problems in a cattle herd, so Kent Fowler, Animal Health Branch chief of the California Department of Food and Agriculture (CDFA), says it's important to get a good sample when testing bulls for trichomonosis.

"The key is for an approved veterinarian to get a good scraping out of the preputial area, which includes the folds and inner sheath of the penis. Then the culture should be read by an approved lab every day for seven days," he says.

If you want the most accurate results, you'll have to trich-test multiple times. On a single test, sensitivity in detecting *Tritrichomonas* (or *Trichomonas) foetus* — the disease-causing agent — is around 80%-90%, Fowler says. But with each successive test, the sensitivity increases and results are more accurate. By the second test you can expect around 88%-93% sensitivity, and by the third test 99% can be expected.

"That's why CDFA requires infected and exposed herds to have three negative tests at least a week apart each before clearing them for any travel except to slaughter," Fowler says.

False-positive results can occur in up to approximately 5% of cases, as there are several different strains of trich that can be difficult to distinguish with just a microscope reading of a sample.

"PCR (polymerase chain reaction) is the solution to ruling out fecal trichomonads that often cause false-positive results in virgin bulls. The organism that causes the trich disease is *Tritrichomonas foetus,* not a fecal trich," Fowler explains. "The nice thing about PCR is that even if you don't get the sample to the lab fast enough for the organisms to still be alive, it can detect the DNA of even nonviable organisms that can't be seen under a microscope."

PCR offers promise in detecting *T. foetus* in samples faster and with more sensitivity, but it's expensive. Depending on the lab, you can expect costs of $17-$35 per sample. Additionally, there are several different PCR testing techniques used across the country. Fowler says standardization of the testing process would be of great benefit to the entire cattle industry.

to track down every single private treaty sale in the state to ensure testing and tagging procedures are correct," Fowler explains.

Green-tagged bulls, those without a negative trich test that are designated for harvest-only sale, have been a second source of challenges, he says.

"To avoid a green-tag slaughter-only designation, the negative trich test must have been within the last 60 days. But some buyers are having a hard time accepting this and still want the bull, so we've developed a compromise," Fowler says. "If all three parties — the seller, the buyer and the auction yard — agree in advance of the sale, we'll allow a green-tagged bull to stay at the auction yard for one week to allow for a new trich test.

"If he tests negative, the buyer can use him for breeding if he wants. If he tests positive, his slaughter-only designation stays intact," he continues.

Another challenge has been the discovery that some cattle owners prefer selling their entire battery of bulls for harvest rather than pay for the required tests if they've had an infection in their herd or have been exposed to an infected herd.

"This has been good in that we're eliminating further potential spread of trich. But the obvious drawback is that we haven't been able to do epidemiological investigations to trace other exposed herds that could possibly reveal additional infections," he says.

Regardless of these challenges, Fowler says he hopes the enhanced regulations help move California toward eliminating trich and that neighboring Western states follow suit in developing or enhancing their trich control programs. Ultimately, he says, uniform standards across states will be key in ridding the West of trich.

Disease prevention

"The most important thing I can say about trich is that there is no treatment for bulls. They must go to slaughter, so prevention is key. Good fences really do make good neighbors," says Kent Fowler, Animal Health Branch chief of the California Department of Food and Agriculture (CDFA). However, he notes that fences alone won't secure your herd's safety from the disease and offers these prevention tips:

- Bulls should be tested before the start of each breeding season.
- Bulls should be tested again at the end of the breeding season after 10 days of sexual rest.
- All purchased bulls, either private treaty or from sale barns, should test negative for trich before you introduce them to your herd. Keep a closed herd, if possible.
- Replace herd bulls as they reach 4 years old, as chances of disease infection increase with age.
- Consider using the TrichGuard vaccine made by Fort Dodge Animal Health to help females clear infection faster if you think you have chronic carriers.
- Without vaccination most cows will clear themselves of the disease within four months, but about one or two out of every 2,000 females is a chronic carrier of trich.

"The vaccine does not prevent a cow from getting trich, but it does lessen the risk of that cow maintaining the organism for any period of time," Fowler explains. "It's approved for use only on cows, not bulls, but recent data I've seen tells me we ought to be vaccinating bulls as well. But we'll have to wait for FDA (Food and Drug Administration) approval before we can legally do that."