



Repro Tracks

► by **Cliff Lamb**, University of Florida

Venereal diseases

One of the primary “Keys to Success” of the Angus Journal for the September issue is herd health. Most beef cattle producers realize that having a sound herd health program is important for the success of their reproductive management program. Therefore, producers usually work with their veterinarians to develop a solid vaccination and pest-control protocol. However, we often do not consider the spread of venereal diseases that can be disseminated when cattle mate.

In recent years I have received several questions from producers associated with these diseases. The primary culprit that may cause significant losses to producers is bovine venereal trichomoniasis (*trich*), which is a disease that causes infertility, open cows and occasional abortions in cows and heifers. It can be economically devastating to infected herds. Hopefully, answering these questions in this column will provide a little clarity.

Bulls can be the source

What is bovine venereal trichomoniasis (*trich*)? *Trichomonas foetus* is a single-celled protozoan that is extremely sensitive to drying and heat. Therefore, the organism must reside in the cow or bull to survive and is transmitted only by breeding. Bulls infected by *T. foetus* are asymptomatic and semen quality and sexual behavior are not affected.

In bulls, the organism is found only on the penis and membranes inside the sheath, and it localizes in the secretions of the penis, sheath and end of the urethra. *T. foetus* does not normally live and reproduce in semen,



but semen can become contaminated with organisms from the epithelial lining of the penis, prepuce and urethra.

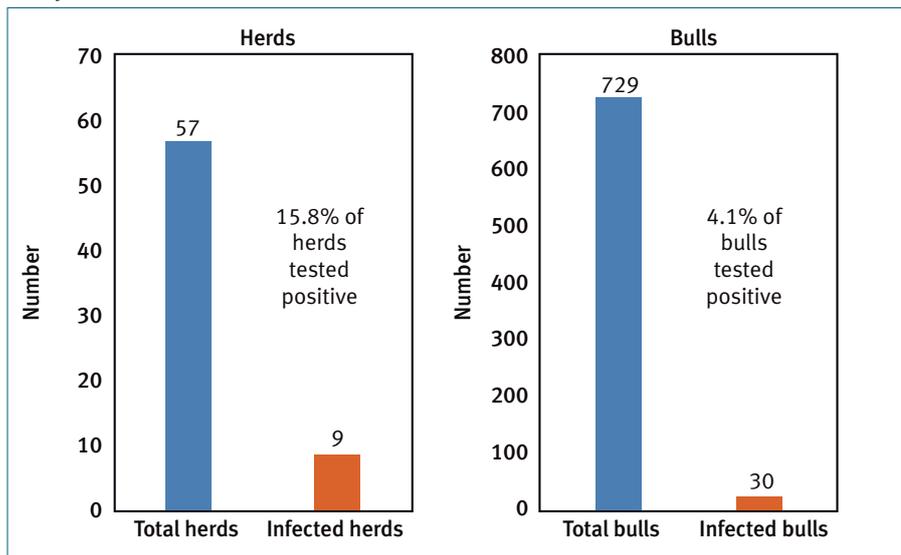
The penis and sheath have crypts and provide sites for localization of the organism. Because these crypts become deeper as the bull ages, there is an association between age and infection; mature bulls are more apt to become infected and stay infected for life.

When a bull is infected, 30%-90% of females inseminated by natural service may become infected with *T. foetus*.

What percentage of bulls in the United States are infected with *trich*? Today, there is little data indicating what percentage of bulls in the United States carry bovine venereal trichomoniasis; however, previous reports in the 1960s to 1980s indicated that between 5% and 8% of bulls in the western United States may carry the disease. In addition, in a California prevalence study summarized in 1990 (BonDuran et al., 1990; see Fig. 1), the infection rate for bulls older than 3 years old was 6.7%, while the rate for bulls 3 years old or younger was 2.0%.

During those periods of time, young and mature bulls likely were servicing cows in large, multi-sire herds. In addition, improvements in management, disease control and culling likely have resulted in a far reduced incidence among beef bulls in the United States. There is no published report to indicate the incidence of bovine venereal trichomoniasis in bulls acquired by Certified Semen Services (CSS) artificial insemination (AI) studs.

Fig. 1: Incidence of herds and bulls testing positive for *trich* in a California prevalence study in 1990



Source: Adapted from BonDuran et al., 1990.

If I purchase a bull with *trich*, what is the likelihood that my cows will become infected? When a bull is infected, 30%-90% of females inseminated by natural service may become infected with *T. foetus*. However, virgin bulls and bulls from single-sire herds that have not been exposed to *T. foetus* have a low risk of having *T. foetus*. Therefore, numerous states have implemented rules and regulations for importation of bulls for breeding that exclude the test of low-risk bulls. Producers in each state should be aware of the regulations associated with the importation of bulls into their state to ensure that bulls have been tested according to the necessary guidelines. In most cases, virgin bulls are exempt from testing for bovine venereal trichomoniasis.

CONTINUED ON PAGE 272

Can trich be transmitted through artificial insemination? Cases of transmission of *T. foetus* at AI bull studs have been reported, but this is presumed to have occurred through contact of the penis with the rump of the teaser animal that had been contaminated through similar contact with an infected bull. With the current biosecurity measures in place at major semen companies that follow CSS guidelines, the likelihood of semen containing trich is minimal compared to the opportunity to obtain trich through natural service.

Prevention options

Is there a vaccine available to help reduce the incidence of trich in my herd? A vaccine (TrichGuard®) has been developed to help reduce losses due to trich. The vaccine is administered in two doses four weeks apart to cows and heifers, with the second dose administered four weeks before initiation of the breeding season. In subsequent years the females will receive a single booster four weeks before the start of the breeding season. Before initiating a vaccination program, producers should consider consulting with

their veterinarian to determine if their risk factors are sufficiently high enough to consider vaccination.

What is the best way to prevent trich in my herd? The most effective way to control trich is to prevent the introduction of the organism into a herd. This can be accomplished through testing all new bulls prior to entry into the herd and preventing unwanted bulls from entering through damaged fences. Either purchasing or maintaining young bulls rather than older ones, and testing all bulls prior to each breeding season are all important strategies. Producers should consider working with their veterinarian to establish a sound biosecurity plan to prevent the introduction of trich into their herds.

Summary

From a herd-health standpoint, trich can be responsible for significant losses if producers do not have a sound biosecurity plan in place. In addition, becoming aware of the regulations associated with importation of bulls into each state will provide added

Establishing a defined breeding season and using early pregnancy diagnosis will aid in detection of pregnancy loss that could be associated with trich.

security against the potential spread of trich. Regardless, it appears that producers who have a defined breeding season and who utilize artificial insemination and early pregnancy detection likely will be at lower risk for trich than producers who forgo these management tools.



EMAIL: gclamb@ufl.edu

Editor's Note: *Cliff Lamb is a beef cattle specialist for the University of Florida and coordinator of the Florida Bull Test.*