



Repro Tracks

► by **Bill Beal**, beef cattle reproductive physiologist, Virginia Tech

‘Little things’ that take bulls out of a sale

It is devastating enough when one of your best bulls fails a semen test or has a scrotal circumference that won't pass the breeding soundness exam. At least those are “real” reproductive problems that you don't want to hand off to a bull customer. However, the frustration level is higher when a top bull is out of the sale because he has a corn between his toes or warts on his penis. Those are annoying problems that can be avoided.

Breeder question:

This spring I had two bulls rejected by the sale committee of a state bull test for having warts on their penises. I have never had warts on the cattle on my farm and was disappointed about “losing” the income from these two bulls. Is there anything I can do to avoid this in the future?

Response:

Warts are a nasty inconvenience. Just as in humans, a wart (papilloma) in cattle is caused by a virus (bovine papilloma virus; BPV). Fortunately, however, humans are not susceptible to the same viruses that cause warts in cattle.

Your bulls probably contracted the virus when placed in close contact with bulls from other farms and ranches. One or more of those bulls probably came to the bull test carrying the virus and/or having warts. Warts are highly contagious and can spread rapidly by animal-to-animal contact when cattle are in confinement. Yearling bulls riding other bulls can readily pick up BPV from another bull.

There are six types of wart-causing viruses in cattle. However, only one type (BPV-Type 1) is reported to cause warts on the penis of a bull. Warts caused by BPV-Type 1 also occur on the nose and teats and usually appear three to eight weeks after the virus enters the animal's system through an abrasion or laceration to the skin.

Warts are most common in young cattle (<2 years) when their immune system is in the developmental stage. Warts that appear on the body of young cattle will persist for six to 12 months and regress spontaneously (without treatment). As an animal with warts ages, it develops an immune response to the virus, and the warts regress, leaving little or no scarring. It is unclear if penile warts would disappear spontaneously without surgical removal or treatment.

Mature cattle have an immune system capable of responding to the virus. Hence, the likelihood of older animals developing warts

after exposure to BPV is markedly reduced.

Finding warts on yearling bulls undergoing breeding soundness exams is not uncommon. In a study of 10,940 bulls examined for breeding soundness (*J Am Vet Med Assoc.* 1963 Vol. 142; pp. 1,105-1,111), veterinary researchers reported that approximately 1% of the bulls tested had warts on the penis.

I surveyed three veterinarians who perform more than 3,000 breeding soundness exams annually. They estimated 0.5% of the young bulls they tested had one or more warts. They were quick to point out, however, that you could find groups of bulls where the rate was as high as 20%. Usually, those groups tended to have a high proportion of bulls with large patches of warts on the skin of the body as well.

Mounting and intromission can irritate or dislodge warts on the penis, causing inflammation and pain. The principal concern about young bulls with penile warts is their unwillingness to mount and breed due to the pain.

If warts are small, few in number and do not envelop the urethra, they can be removed surgically at chuteside during a breeding soundness exam. If the mass of tissue is more diffuse, if it restricts the penis from being extended (phimosis) or if once extended the penis can't be retracted back into the prepuce (paraphimosis), surgery is more complicated and the prognosis for recovery is poorer.

Bulls that have warts removed should be provided sexual rest for two to four weeks after surgery. Recurrence of warts on the penis is possible after surgical removal. Therefore, the safest practice is to restrain the bulls and extend the penis again two weeks after removal of penile warts to check for recurrence.

Prevention of penile warts can come from avoiding transmission of the virus and/or vaccination of young bulls with wart vaccine. Isolation of bulls with visible warts on the body can be used to reduce transfer from

bull-to-bull. Vaccines containing killed BPV are available from more than one supplier and cost approximately \$8-\$10 per head to administer an initial dose and a booster (three to five weeks later). Several researchers and Extension veterinarians have reported that response to the vaccines can be variable. They indicated vaccines are beneficial for prevention of warts, but seem to be of little or no value in treating animals with active cases.

Breeder question:

We had two bulls scheduled for this year's sale that developed a corn and were so lame they had to be removed from the sale. We have never had this problem before. What causes a corn, and how can we fix the problem?

Response:

“Corn” is the street term for an “interdigital fibroma.” Simply put, when the soft tissue between the toes is chronically irritated it becomes inflamed and a mass of fibrous tissue develops between the toes. The corn looks like a large wart (papilloma) protruding forward and upward from the area between the toes. Once the interdigital tissue is inflamed, infection often follows. The soft tissue between the toes is sensitive; hence, the animal quickly becomes lame.

The cause of a corn is considered to be the chronic, uneven pressure placed on the interdigital tissue by the two toes. The uneven pressure results from uneven growth of the two claws or damage to one claw. If detected early, development of a corn that results in severe lameness can be avoided by corrective hoof trimming.

If the corn becomes infected, it is often necessary to remove it surgically. Surgical removal does not immediately alleviate the pain nor reduce the lameness. However, by removing the tissue and relieving the underlying cause (hoof problem) the animal should recover without long-term effects.

Removing a corn may make the bull susceptible to a secondary infection, such as foot rot. Care should be taken to maximize the hygiene following corn removal. In the best of situations, the bull will require two to four weeks to heal before exhibiting normal movement without lameness following corn removal.

Editor's Note: Bill Beal is a beef cattle reproductive physiologist at Virginia Tech. This column is designed to provide answers to questions about reproductive management commonly posed by commercial and purebred breeders. Direct questions or comments to wbeal@vt.edu or mail them to him at the Dept. of Animal & Poultry Sciences, Virginia Tech, Blacksburg, VA 24061-0306.