



Vet Call

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Bovine leukosis — BLV

I receive a number of questions about bovine leukosis or bovine leukemia virus (BLV) every year. This disease has implications for trade with Canada and other countries and can cause minimal to moderate health problems in infected herds. The virus is very common in U.S. herds, and many herds have from a few to most of the cows infected with the virus. The virus does not cause disease in humans and is not associated with leukosis or leukemia in people.

BLV tumors

Many infected cows show no signs of disease even when infected with the virus for years, but a few cattle will develop tumors in response to the virus. These tumors cause a variety of problems depending on where they develop. In general, tumors develop in about 1%-5% of infected cows; but the percentage can be higher since some herds appear to be more susceptible to tumor formation.

The tumors induced by BLV can develop in the gut, uterus, heart, spinal column or behind the eye. The signs of tumors being present are associated with their location. Tumors in the gut may result in ulcer formation, weight loss and severe damage to the intestine. Tumors in the heart can cause heart failure, while tumors in the spinal column can lead to rear leg weakness or paralysis. Cows with tumors behind the eye will appear “bug-eyed,” and tumors in the uterus will cause infertility.

The leukosis virus is found in white blood cells and can be passed from one animal to another when blood is transferred by injection needles, palpation sleeves, dehorning or castrating equipment, or biting insects. Because the virus can only be passed by blood transfer, natural breeding, artificial insemination (AI) and embryo transfer (ET) are not considered routes of transmission — even though some countries prohibit the importation of semen from BLV-positive bulls. Infected pregnant cows can pass the virus to their offspring during pregnancy or through colostrum (or milk) after birth.

Control methods

Several methods to control the spread of BLV through a herd have been investigated. Reducing activities that could cause blood to be passed from one animal to another, such as using one palpation sleeve per cow and one injection needle per cow along with

careful cleaning of dehorning and castration equipment between animals, should reduce the spread of the virus.

If you are interested in instituting a BLV control program that includes culling of infected cattle, the first step is to take a blood sample from every animal in the herd older than 8 months of age and determine the percentage of the herd that is infected. If few animals in a herd are positive for the virus, some producers will cull all the test-positive animals or will isolate the positive cattle away from the negative herd. Because insects can move the virus in blood meals, complete isolation of your herd if other herds in the area are positive for the virus may be impossible. We do not have any treatments that can clear the virus from infected cows.

Some purebred herds that are currently negative for the virus institute strict test-and-cull strategies to keep the virus out of the herd. The virus can usually be detected by 12 weeks after exposure, but some animals with low antibody titers may not be detected. If purchased animals

are tested at arrival and isolated until they are tested again 12 or more weeks later, risk of importing the virus can be greatly reduced. Some producers participate in voluntary certification programs for the virus that include an initial test of all cattle on the farm older than 8 months of age, and then annual testing of all cattle older than 18 months of age.

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Summary

BLV is a fairly common virus that can occasionally infect enough animals in a herd to cause a noticeable increase in health problems.

Control strategies are expensive and must be maintained indefinitely. Some herds can gain marketing advantages by maintaining a BLV-free herd, particularly if they are exporting animals, semen or embryos to countries with BLV restrictions. A test-and-cull strategy to remove the virus (or prevent its introduction) can be very effective, but it may be prohibitively expensive if a lot of cattle in the herd are infected.

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