

Bovine Leukemia Virus (BLV) & Lymphoma

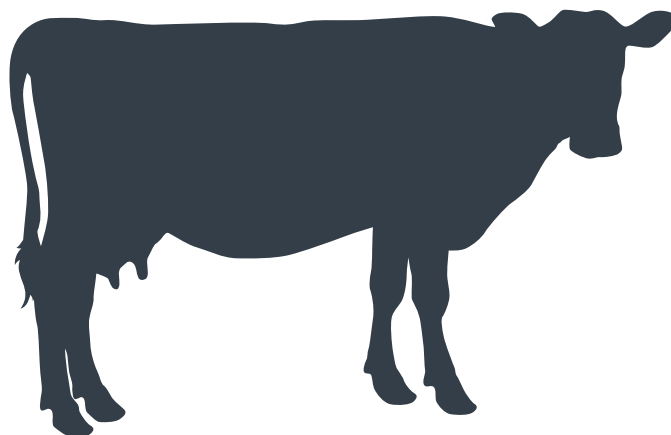
FARM ANIMAL SERVICES

Why is testing for BLV important?

Most cattle infected with BLV are asymptomatic. More importantly, these cattle serve as a source of infection for other cattle in the herd. Viral infection can transform to cancer (lymphoma) in some animals, which leads to decreased milk production, shorter life spans, and thus economic losses.

General information

BLV is a retrovirus that results in lifelong infection in cattle. Upwards of 80% of all dairy herds and 40% of all individual dairy cows in the United States are affected with BLV. Similarly, an estimated 38% of all beef operations and 10% of all beef cows tested are affected, especially those in the southcentral and southeast regions. The virus replicates in a specific type of white blood cell, called a B lymphocyte. Approximately 30% of infected cattle have persistently elevated lymphocytes in circulation (lymphocytosis), which increases the risk of transmission and production losses. A small percentage (1-5%) of infected cattle develop lymphoma from the virus. Although often infected when young, clinical signs of lymphoma most commonly develop in adults between 4 and 8 years of age. Rare sporadic forms are seen in young animals, but these are not associated with the BLV virus.



Symptoms

Clinical signs in cattle with BLV-induced lymphoma are highly variable and depend on the organs involved. Common sites of tumor invasion are the heart, abomasum (stomach), uterus, lymph nodes, and spinal cord, but other organs and tissues are possible. Clinical signs include weight loss, anorexia, fever, enlarged lymph nodes, brisket edema, black tarry stool, bloat (abdominal distension from pyloric outflow obstruction), bulging or inflamed eyes, infertility, and weakness or paralysis of the hindlimbs. However, as mentioned earlier, subclinical infection with the virus results in the greatest milk or beef production losses and an increased risk of transmission to herd mates.

Transmission and prevention

Viral transmission between cattle is not completely understood. Potential routes of infection involve blood, colostrum, milk, saliva and semen, and a fetus can be infected before birth in the uterus. An integral part of controlling spread is the identification of infected animals by testing individuals in the herd, or pooled blood or milk samples. Steps to reduce transmission include separating or culling BLV-positive animals; disinfecting tools for dehorning, castration, tattooing and tagging, and other equipment; feeding BLV-free colostrum; implementing effective insect control protocols; changing needles between animals; and changing gloves between rectal palpations. No vaccine is available to prevent BLV, and no effective treatment for lymphoma has been developed. Carcasses with lymphoma are condemned at slaughter, so cattle that develop cancer should be humanely euthanized.

Good management practices are the key to limiting production and economic losses from BLV. Consult with your veterinarian on the most appropriate steps to take with your herd.