PRODUCTION LIMITING DISEASE

INCOME AND PROFIT

Income and profit from a beef cattle cow/calf operation are affected primarily by nutrition and reproduction rates. Certainly, as a beef producer, two of your best investments on return are feed testing and pregnancy testing. But what else affects impacts income and profit? ….Disease.

Some diseases affect your bottom line in an obvious way. Calf scours is probably the best example of that, with obvious loss of animals and cost of treatment. Some diseases are less obvious and they are often referred to as production limiting diseases. They may not show obvious signs of disease in the infected animals, but they cause problems in your profit loss level just the same.

The big 4 for infectious production limiting diseases in cattle:

- Bovine Virus Diarrhea
- Neosporosis
- Enzootic Bovine Leukosis
- Johne's Disease

I have given information on Johne's Disease in this publication previously. The actual economic impact for Johne's Disease in a beef herd is not easy to find. Work has been done with Dairy cows where the losses from an infected cow are estimated at between $279 TO $441 over a lactation period and an additional cost of the cow being 3 times more likely to be culled. (Hoards Dairyman 2010)

BOVINE VIRAL DIARRHEA (BVD)

The bovine viral Diarrhea virus (BVDV) is widespread. It is the cause of a complicated cattle disease with unspecific symptoms that include reproductive losses, scours, increased rates of respiratory disease, ulcers in the mouth and digestive tract, and death. One study in beef cattle reported that every cow infected with BVD can cost producers $10 to $60 and that in the feedlot an animal with BVD infection can cost $7.60 per hundredweight of gain. (The Range Beef cow Proceedings XIX, 2005)

There are two types of infection with BVD; an acute transient infection (Classical BVD) and a persistent infection (PI). Then there are many expressions of infection with BVD. Which form of the disease an animal gets depends on a few factors:

- Age that the animal is when it is infected
- Whether the animal has had a previous infection
- Strain of BVD virus infecting the animal

The most dangerous form of BVD is the persistently infected animal or PI. This type of infection can only occur in a foetal calf at less than 4 months gestation. If a bred cow is infected with a strain of BVD virus that can cross the placental barrier, the calf's immature immune system, at this point of development, allows the virus to establish a lifelong or persistent infection. When born, these calves carry and shed BVDV for life and become the main reservoir for infection of other cattle. Most PI's die before they reach maturity from Mucosal Disease or secondary diseases such as pneumonia. Some PI`s reach reproductive age with PI dams always producing PI offspring and PI bulls shedding virus continually including in their semen. Vaccination will not help these animals. No treatment can 'cure' these animals from the persistent infection. They are persistently infected and shedding virus for life. These animals are the most common source of infection to other animals in the herd or pen. They shed large amounts of virus making the early detection and removal of PI animals crucial to control efforts. Infected bulls are often a large source of BVD virus in a cow calf operation as they shed the virus in the semen. PI bulls shed the virus in semen constantly, and transiently BVD infected bulls may shed the virus for months.

The least dangerous form of BVD is in healthy adult non pregnant cattle. These animals usually show mild or no sign of disease or infection.

In the feedlot, there is evidence that BVD may be the most economically important infection. BVD has been shown to make feedlot cattle more susceptible to bacterial infections, and in some cases to make these infections worse. The latest example of this is the proven relationship between Mycoplasma bovis pneumonia and BVD infection. Studies have shown that feedlot animals that have protection to BVD on arrival at the feedlot have a decreased risk of developing respiratory disease. Also the risk of treatment for respiratory disease was 43% higher in cattle that were exposed to a PI animal in the pen. That same study also reported that almost 16% of initial respiratory tract diseases were associated with exposure to a PI animal. (Vet Clinics of North America 2004)

BVD is also associated with congenital defects in calves, weak calves, abortion, stillbirths, mummified calves and poor conception rates in cows.

PREVENTION

The first step in control of BVD in your herd is to reduce the spread within the herd. The critical part of this control is to eliminate the animals shedding virus most especially the PI animals. The best prevention program starts with testing of the herd to identify the current PI animals and eliminating them. This is accompanied by a strong biosecurity program focused on preventing exposure, particularly of bulls and bred cows, to the virus as well as a recognized vaccination program. These three steps can effectively accomplish the prevention, control and ultimately, eradication of the virus from a herd.

New, reliable, faster and much more economically realistic tests are available to identify PI animals. Talk to your veterinarian about programs to identify PI cows and bulls to remove them from your herd.

Jane Pritchard is a veterinarian with the Ministry of Agriculture & Lands working in the Animal Health Branch at the Abbotsford office.
jane.pritchard@gov.bc.ca