The Johne's disease question box

Why remove high-titre cows?

By Ann Godkin

If testing detects a so-called high-titre (HT) cow in your herd, you can be certain she is infected with Johne's disease and shedding bacteria that cause the affliction into your farm's environment.

Most cows infected with *Mycobacterium avium paratuberculosis* (MAP), the bacteria causing Johne's disease, produce an antibody against MAP. The ELISA test can detect and measure the antibody in their blood or milk. The antibody level is called the antibody titre. As infection advances, the antibody titre rises.

The MAP antibody is difficult to detect at lower levels. Hence, some infected cows have negative test results. Antibody levels can also fluctuate, resulting in variable test levels and sometimes conflicting test results.

Uncertainty about test results disappears when an ELISA test report shows a result of 1.0 or higher in milk or blood. In the Ontario Johne's program, 1.0 indicates a HT cow, reliably considered infected at a high level. More than 90 per cent of these HT cows are actively shedding MAP bacteria in their manure, research shows.

That makes these cows a serious hazard. Removing them from your herd stops them from adding more MAP to the farm and calf environment. As well, it is estimated more than 50 per cent of calves from HT cows will be born infected, and may develop advanced Johne's disease at a young age.

You cannot identify HT cows visually. Some will have diarrhea or be close to illness, but you can't predict when they become shedders. Many shed before you see symptoms.

Part of the Ontario program strongly encourages producers to permanently remove HT cows. Although voluntary, it is required for reimbursement of herd testing costs at $8 per cow. Recommended removal procedures are euthanasia and on-farm burial or composting, or collection for rendering.

So far in Ontario, HT cows are most likely to be found in herds where Johne's disease has already occurred, but no herd testing has been done and no management changes have been made to protect young calves.

More than 90 per cent of herds tested will not identify a HT cow. For the 10 per cent that do, removing these cows is essential to prevent infection spread.

We hope owners finding HT cows will do the right thing, and permanently remove these animals for the good of their own herds. However, some may not. Remember this if you buy cows: the only protection you have against buying a HT cow is to ask for the seller's herd Johne's testing history.

Dr. Ann Godkin, disease prevention veterinarian with the Ontario Ministry of Agriculture, Food and Rural Affairs, chairs the Ontario Johne's Disease Industry Working Group.

Ontario Johne's testing statistics over five years:

- 31,970 cows tested
- 116 (0.36 per cent of cows) were HT
- 595 whole herd tests done, about 15 per cent of Ontario herds
- 74 herds (12 per cent of 595) had at least one HT cow
- 46 (62 per cent of the 74) had only one HT cow in the herd
- 20 had two HT cows
- 8 had 3 or more

If this group is representative of Ontario herds, then about 1 in 10 might harbour a HT cow.