# The Johne's test decision

JANUARY 2010 BROUGHT THE roll out of the Ontario Johne's Education and Management Assistance Program, and with it some questions from producers and their veterinarians about specific herd situations.

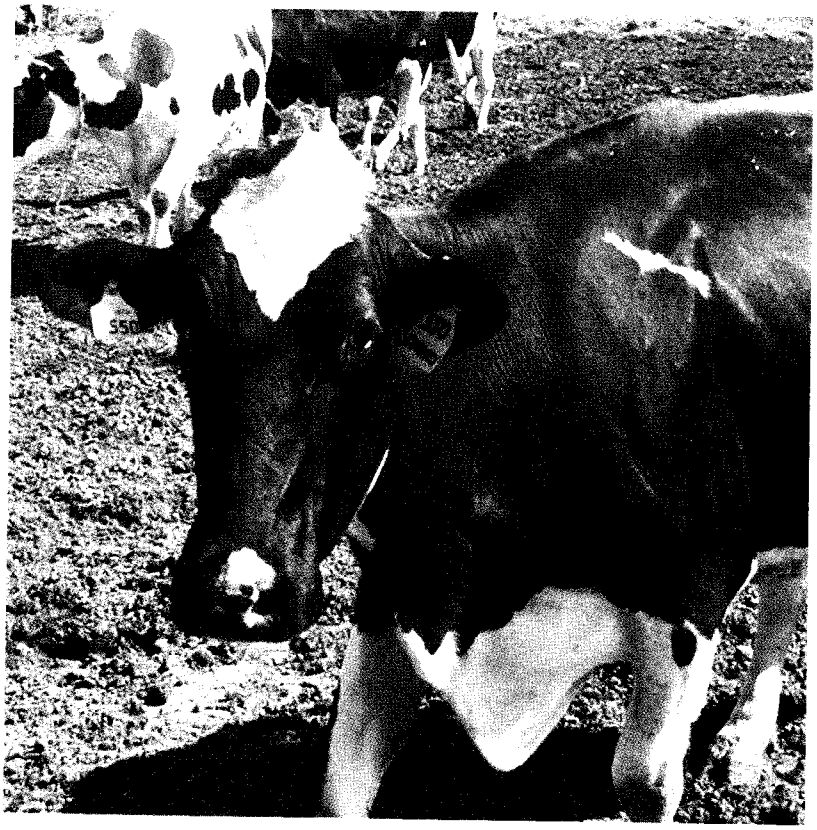
Last week a producer called to ask about testing. He and his veterinarian had discussed the Johne's program but he still had some questions and some concerns. Two years ago, his veterinarian confirmed Johne's Disease in two sick cows. These cows had developed diarrhea and weight loss as mature cows and had been euthanized on the farm.

**Fear of what testing will reveal has caused many producers to think hard about doing the testing**

Post mortem and further lab examination confirmed the diagnosis of Johne's Disease. Because these were the first cases of Johne's Disease on this farm it was important to be sure. There were implications for the rest of the herd.

The vet was keen for the producer to get started in the Ontario program and tackle the problem. The producer was keen too. He had worried about Johne's for some time, but he was also concerned about what might be revealed by testing. His vet had told him to be prepared for more cows with MAP (the bacterium that causes Johne's Disease in cattle) because Johne's is a contagious disease.

He warned that sometimes the cows that get sick with Johne's are just the "tip of the iceberg" of all the infected cows in the herd. Compounding the producer's worries were other "dairy problems". Milk production was tight. He didn't want to lose more sick cows, but he also didn't want to have to cull cows right away because he needed them for milk production.



**It's highly recommended that cows which test as having high titres for Johne's be culled from the herd and not sold as milk cows**

Under the new Johne's program there were some good things and some worrisome ones for this producer. The good things were that the program would provide him with reimbursement for testing (at $8 per cow tested) if he tested the whole herd at one time using the milk or blood ELISA tests.

He would get a chance to talk to his vet about his Johne's situation and he would get a thorough review of

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calf and heifer raising targeting exactly what was being done and how it might affect the spread of Johne's.

But worrisome was the stipulation in the program that "high titre cows (HTCs) found on testing be permanently removed from the herd (to composting, burial or rendering) within 90 days to be eligible for the testing reimbursement". He wondered how many of these cows he would have and what would happen if he had to cull them.

In the Ontario program a high titre cow (HTC) is a cow that has an ELISA test result of 1.0 or higher. The same cut-off value, 1.0, is used for both milk and blood ELISA tests. These are the cows whose removal is encouraged. The HTC classification does not include all test positive cows. To put this in perspective, from previous Ontario surveys we estimate that about two per cent or 6400 of about 320,000 dairy cows in Ontario could have a positive ELISA test for Johne's Disease.

In the two Johne's projects in 2005 to 2008, about 0.36 per cent of all these cows (or about 1100) would have been classified as HTCs.

Looking at testing over the last five years, 595 herd owners have tested their entire lactating herd (31,970 cows) on one herd test using the milk ELISA at CanWest DHI. Among these cows, 116 (0.36 per cent) had a positive test that classified them as a HTC. Among the 595 herds, 74 (12 per cent of tested herds) had at least one HTC.

Of these 74 herds, 46 (62 per cent) had only one HTC in the herd, 20 had two, and eight had three or more. If this group of herds (which is about 15% of all Ontario herds) is representative, then about one in 10 Ontario herds tested could have a HTC.

Most herds (around 2/3rds) will have only one HTC per herd test.

Having a high titre on the ELISA test indicates reliably that the cow is infected with MAP and that she is in the advanced stages of infection. Johne's Disease illness may be imminent although it can't be predicted when, or even if, it will occur for sure.

Some HTCs are already sick when they are tested so their result will not be a surprise and their removal is pretty easy to accept, however this is not always the case.

So if some of the HTCs aren't even sick or low production yet, why are they such a problem?

If they are milking and appear healthy, the producer wanted to know why their removal was so essential. Why couldn't he wait until they got sick (if nothing else caused them to be culled

before hand) and then remove them?

Unfortunately these cows are not just a risk to themselves. Of greater concern is the risk they pose to future replacements. Over 90 per cent of the HTC cows have reliably been shown to be actively shedding MAP bacteria.

They shed MAP in manure and occasionally in milk and colostrum too. This means they contaminate the bedding, alleyways, pens, yards and other areas with their manure.

MAP can get into feed and water through manure contamination of shovels, on other equipment, in bedding, on cow's feet, by splashing, by flow along floors to other pens, and so on.

If the cow is pregnant when she has advanced Johne's Disease, it is estimated that over 50 per cent of calves born to these cows are infected before birth and may be at higher risk for developing advanced Johne's Disease at a young age in the future.

If one HTC only infected her own calf, Johne's Disease likely would not develop into a herd epidemic and we wouldn't need a provincial program. However if the HTC gets a chance to contaminate the dry cow or calving area, or milk or colostrum fed to young calves, she can infect multiple calves with MAP.

This changes Johne's Disease from occurring as a rare, sporadic illness in a cow here and there, to becoming an expanding herd problem that greatly affects production, cow health and product quality.

As the Ontario program was being developed, dairy producers and veterinarians on the Johne's Working Group who helped write the program requirements strongly requested that the removal of HTCs be included. They were concerned that little progress would be made with on-farm prevention of Johne's if producers didn't learn about the important risk these cows pose.

Producers and veterinarians were concerned that Johne's would be spread from herd to herd by the movement of HTCs following herd testing. No one wanted to unwittingly buy a HTC as a replacement animal.

Producers who find a cow with a titre of 1.0 or higher are strongly encouraged to remove her permanently by euthanasia and on-farm burial or composting, or by having her picked up by a deadstock collector for rendering.

Immediate removal stops the spread and protects young stock from getting infected. Preventing the movement or sale of these cows to other herds prevents the spread of MAP infection to other herds. Removal is voluntary – there are no regulations in the Ontario Johne's program that require identification of these cows or prevent their sale. Remember this if you buy cows.

It would be wise to ask about a herd's Johne's Disease history and testing record. It remains buyer beware!

So what did this producer decide to do? He and his veterinarian thought long and hard. It was clear that a program needed to be started and that the sooner they got going the better it would be. Johne's problems aren't fixed easily. In a situation like this, it is reasonable to plan on a five to 10 year endeavour to get things under control.

To make the most of the assistance being offered in the Johne's program the producer and the vet decided to test the whole herd, both lactating and dry cows using milk and blood testing, to establish a baseline of what

the infection level likely was.

The producer decided to do this at his own expense outside the program – that way if needed, he could take some time to remove cattle as milk production and replacements allowed. After reviewing the schedule for program's testing, he found that his county was not due for testing for about two years. His plan is to test the whole herd again then and apply for the reimbursement at that time.

His concerns about Johne's in his herd turned out to be well founded, but his culling worries less so. When the herd was tested 12 cows (about 10 per cent of the herd) were test positive. Three lactating and one dry cow were HTCs. One of these four HTCs was already thin and had diarrhea and another had dropped very significantly in production over the last three months. The other two appeared normal. He plans to remove the two with problems immediately and the other two later.

All of the HTCs were home raised. They likely became infected on this producer's farm as baby calves. As part of the overall Johne's program, the producer and the veterinarian did the annual Risk Assessment and Management Plan (the RAMP) for the herd.

Several changes were made to how the maternity pen and the young calves are managed to protect future calves from MAP infection. But the details of that are parts of another story.

The producer has a grasp on his Johne's herd problem. The news wasn't good, but it turned out to be manageable with a plan. The changes he made to calf raising were not onerous. Testing the whole herd gave him a baseline on the infection rate in his herd and put the Johne's problem in perspective.

While it's a serious concern for this herd, it's now defined and it doesn't lurk under the surface as an unknown. Some cows will be removed, both now based on this herd test and likely some in the future too as further testing occurs.

The good news is that as the Johne's problem is addressed with good maternity pen and calf management the number of HTCs, sick cows and the test positive cows will go down quickly. Calves will grow up uninfected.

The future generations of "Johne's-free", home-raised heifers will calve and eventually populate the entire milking herd. As older shedding cows move out, it will just get easier and easier to stop milking MAP infected cows. ◘