Conquering Johne's

Herd testing and enlightened management overcome dread disease

When Ted Brown got a test positive result for Johne's disease almost a decade ago, he saw two clear choices for the future. He could ignore the results and carry on as he had been, or he could take steps to eliminate the disease from his dairy herd.

"We took the philosophy that we could get rid of this disease," recalls Ted, who farms just north of London, Ont. That determination has paid off. The most recent results from herd screening tests done in November 2009 came back completely negative.

In the late 1990s, he strongly suspected one cow in his herd had Johne's. He had her put down and disposed of but never tested. Then, in 2000, a test confirmed another cow had the disease. She was taken out of the dairy herd, too.

"She was very sick with it," says Ted. "She showed all the clinical signs—off-feed, losing condition, diarrhea."

On the advice of his veterinary clinic, he had the herd screened with a blood serum test. Two of the 33 cows tested slightly positive, although they showed no outward symptoms, and were later culled for beef.

Ted's decision to screen his herd was a big step back then. No one talked much about the disease, and few farms were testing for it. "We have a lot of trust in our vet clinic, and it seemed like the right thing to do," Ted says.

A bacterium called *Mycobacterium paratuberculosis*, more commonly known as MAP, causes this production-limiting disease in ruminant animals, including dairy cattle. Infections occur primarily among young calves through contaminated manure from infected older animals. An infected dam can also pass on the disease through her colostrum.

A positive dairy cow usually won't exhibit clinical signs of the disease for several years after she was infected as a calf. A large percentage of infected animals never show symptoms, but continue to shed MAP in their manure.

Exacting management required

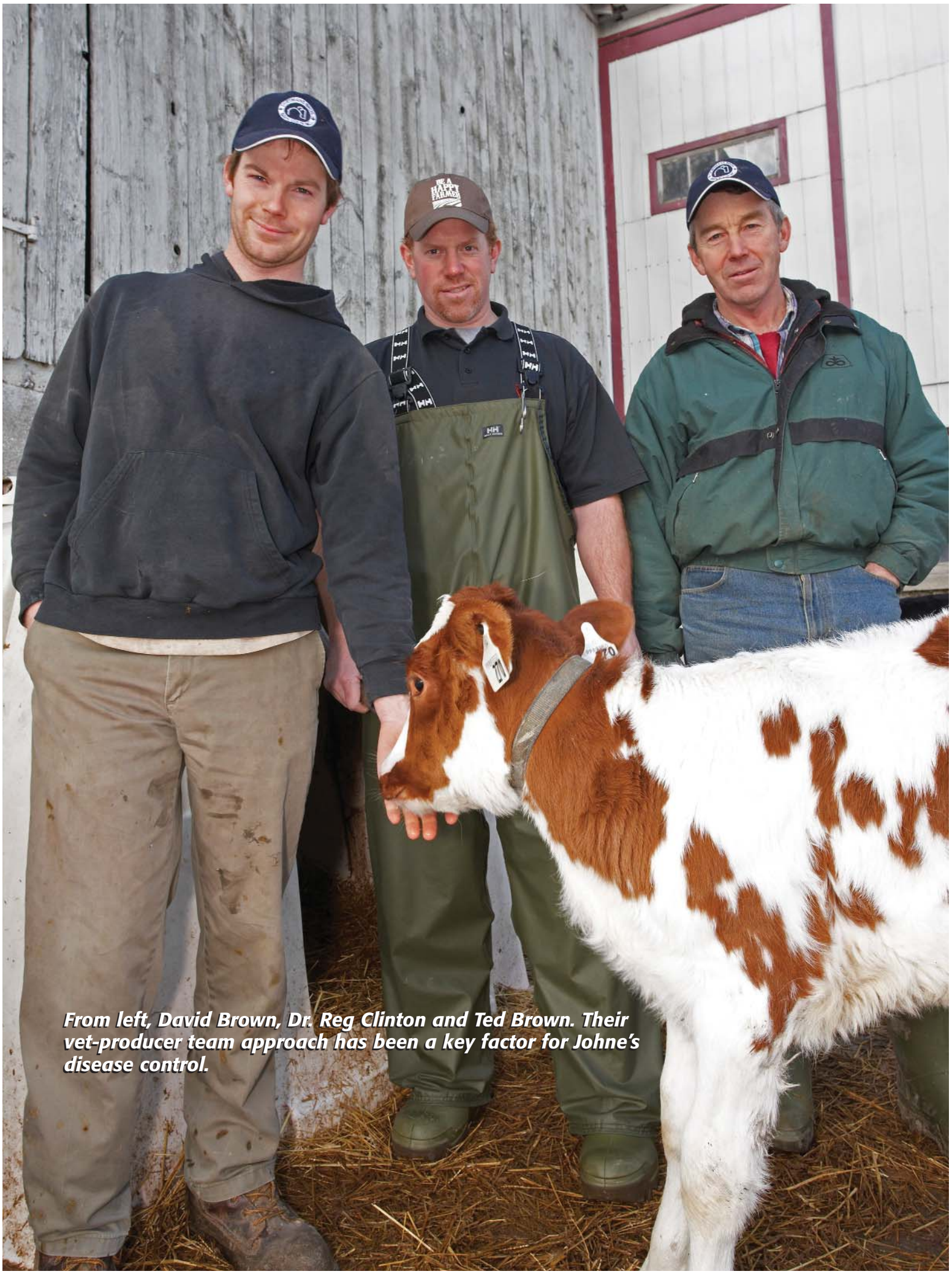
Testing is a valuable tool for combating Johne's, notes the Browns' veterinarian Dr. Reg Clinton. "However, you can't test your way out of it. Testing your animals is not much of a benefit if you don't change your management to prevent its spread."

Control and prevention call for an exacting farm management approach. Ted, who farms with his son, David, started making the first changes after the tests in 2000. For example, he removed calves from their mothers shortly after birth, stopped feeding pooled, soured colostrum to calves and no longer spread cow manure on pastures where young heifers might come into contact with it.

In November 2001, further test results came back negative, as did tests on pooled manure samples in March 2003. "We thought we were making progress," says Ted.

Blood test results in January 2004 showed they hadn't yet achieved their goal. Results turned up one positive cow. A year later, the DHI milk test identified two positives out of 38 sampled.

One was the cow identified in 2004 and the other was her mother. The mother again tested positive in November 2008. Since these infected animals showed no clinical symptoms, the Browns were able to man-



From left, David Brown, Dr. Reg Clinton and Ted Brown. Their vet-producer team approach has been a key factor for Johne's disease control.

Ted, Reg and David plan to continue the rigorous management program that has resulted in the Browns' herd testing negative for Johne's.

Test-negative status ahead?

While there is no current formal status for herds that achieve test-negative results for Johne's disease, that could change, says Dr. Ann Godkin, chair of the Johne's Disease Industry Working Group. "It is something everyone wants to have," she says.

A subcommittee of the working group has been developing a recognition program. "We hope to introduce it later on as the program progresses to recognize achievement and to encourage others with these success stories."

Designating herds as "free" of Johne's, based on simple testing, would be difficult. Testing doesn't work for Johne's the same way it does for other diseases, especially on a single round of testing, she says.

"But we also know that showing a track record of repeated negative herd tests, successfully completing risk assessment and management plans, along with animal identification and an ongoing vet-producer team approach, would be very convincing for folks looking to buy cattle from low-risk herds."

She points to the Browns' operation as a prime example. "Isn't this the kind of herd everyone would like to source replacements from?" she asks. "Isn't this the kind of herd we want to be typical of all our Ontario herds for our milk buyers?"

Efforts by the Browns and other like-minded producers should reassure cattle buyers their herds are low risk for many diseases, not just Johne's, Godkin says. "These efforts should also assure consumers that care is taken to ensure the production of safe wholesome food by healthy, well-cared-for animals."

age around the disease. However, both have since been culled, the mother only recently after 13 years in the milking herd.

When a pilot Johne's control program was launched through CanWest DHI in 2005, the Browns enrolled. The program was extended to Western provinces the following year to assist vets and producers in developing calf-rearing programs that help prevent Johne's from spreading.

Developing these programs starts with a risk assessment questionnaire, explains Reg. "It was very detailed and really helpful."

"I had to break some old habits after we went through the list," Ted adds.

The risk assessment and management changes coincided with the Browns' plan to move into a freestall barn and parlour set-up in December 2005. They were determined to keep problems out of the new barn.

Expansion plans

Ted had been milking about 35 cows in the old tiestall barn since he purchased the farm in 1974 after graduating from Centralia Agricultural College. Prompting the expansion, which doubled the herd size, was the

Plan gets broad support

One of the questions posed during a recent survey of 88 dairy producers asked whether they thought the province needed a Johne's prevention program on every farm. Almost two-thirds of producers, or 55, agreed, and another 17 strongly agreed. Just eight disagreed, and one strongly disagreed. Three said they didn't know about Johne's and four didn't respond to the question. The survey was done during the Outdoor Farm Show last September in Woodstock, Ont.

An information package about the Ontario Johne's Education and Management Assistance Program was included with copies of the December issue of *The Milk Producer* sent to Ontario producers. For more information, contact program co-ordinator, Nicole Perkins, johnes@uoguelph.ca or 226-979-1664, or program chair, Ann Godkin, ann.godkin@ontario.ca or 519-846-3409.

desire by David, now 26, to join the family operation and make dairy farming his career.

The youngest of Ted's three sons, David had been keenly interested in dairying since he was a small boy. That interest led to an agricultural diploma at the University of Guelph before he returned to Londedge Farm full time. The operation was incorporated and a succession plan put in place in 2003.

The father-son team works closely with Reg, and Johne's control was one of the factors considered when the Browns designed the new barn where they milk 74 Holsteins. For example, when the barn is cleaned, manure is never dragged past young heifers.

Calf-rearing key

Calf rearing is widely considered the key to keeping Johne's disease in check. The Browns remove heifer calves from their mothers to individual outdoor hutches within an hour after they are born on a bed of fresh, clean straw.

After their time in the hutches, they are moved to a pen. Movement is always forward, explains Ted. "They're never allowed to go back and mingle with younger animals."

The primary transmission route for Johne's is manure from an infected older cow getting into a calf's mouth, notes Reg. Steps like those the Browns take minimize the chances of that happening.

Another transmission route is colostrum. In 2007, the Browns got access to a pasteurizer owned by another producer a few kilometres away. They collect colostrum from cows that have just calved, pasteurize it and store it frozen until needed for newborn calves.

Ted finds this extra chore pays dividends. "It's really not a big deal. Besides, our calves get off to a really good start."

He feels the same way about how the management changes have improved herd health generally. "There's no doubt about it," he says. "Even if you don't have Johne's, these practices make your calves healthier."

Dr. Ann Godkin, veterinary scientist with the Ontario Ministry of Agriculture, Food and Rural Affairs, has been following the progress of the Browns and other producers involved in the 2005 pilot program. "That was the precursor for the current program that is being introduced for all Ontario producers starting January 2010," she says. "It is very closely modeled on what they have done."

Anecdotal evidence, like reports from the Browns, plus a formal scientific evaluation done by Dr. Ulrike Sorge of the Ontario Veterinary College show this approach works.

As part of her PhD, Sorge conducted a follow-up study to see what happened on pilot farms two years later. These herds successfully lowered the prevalence of test-positive cattle.

"As well, participating producers convinced her (Sorge) the occurrence of other calfhood diseases like scours and pneumonia also went down," Godkin adds. "And even better, they liked the process of learning firsthand about Johne's prevention and better calf-raising tailored to their own farm situation by working closely with their veterinarians."

Encouraging signs

Godkin also chairs the industry-wide Johne's Disease Industry Working Group responsible for the new provincial program. She finds it encouraging, but not surprising, to see the success these producers and their vets have had working together.

"Johne's disease and testing can be confusing. Sometimes the information that producers and veterinarians get from various sources seems hard to decipher and turn into action. This can be solved with good communication and teamwork," she says.

The Browns and Reg Clinton provide a good example of how this approach can succeed, Godkin says. "Good animal husbandry, with attention to a few specific disease details, wins again. Everyone can do this. The Ontario program strives to clear away the confusion and help everyone get down to the basics that work."

"It seems like extra work but there is a direct payoff," says Reg. "Most vet clinics are ready to go (with the new program). It's easy to establish a risk assessment and testing regime. I really believe that no matter what your prevalence is you will see immediate results with calf health. Basically, high- or low-prevalence herds can be turned around and headed in a healthier direction from a milk quality and an economic standpoint."

Even with the recent encouraging test results, Ted and David Brown plan to stay on top of Johne's. "You have to stay vigilant. You can't ever relax on the management," says Ted.

He also takes a much broader view beyond their individual farm. "It's important, too, from an industry standpoint."