Test your cows for Johne’s Disease

Just because your cows aren’t experiencing long-lasting diarrhea and weight loss, despite a good appetite, doesn’t mean your herd is free of Johne’s Disease. Unbeknownst to you, it may be reducing your herd’s productivity. It is estimated that Johne’s rob’s dairy producers of $227 per animal annually – infected or not, and is in more than one-third of the herds. Costs associated with Johne’s include decreased milk production, increased services per conception and decreased carcass value at slaughter.

Johne’s Disease, also known as paratuberculosis, is a chronic mycobacterial infection affecting the lower small intestine of ruminants. A slow-growing bacteria, Mycobacterium Paratuberculosis is very resistant in damp environmental conditions – surviving up to nine months in manure pits and anaerobic manure slurry, 11 months in soil and 17 months in water.

Direct sunlight, heat and specific disinfectants will kill the organism. As the bacteria slowly grow in the small intestines of infected animals, the intestinal walls become thickened and unable to absorb nutrients.

Like most diseases, preventing Johne’s is easier than curing it. In fact, there is no cure for Johne’s Disease.

Prevention starts with dry cow management

Because newborn calves are the most susceptible to infection, prevention starts with dry cow management. Set up a regular testing program to prevent Johne’s from deteriorating your herd.

According to Libby Balzer, D.V.M., of the Johne’s Disease Program, Wisconsin Department of Agriculture, Trade and Consumer Protection - Division of Animal Health, calves must not ingest Johne’s-contaminated manure. Experimentally, a calf was infected with Johne’s with less than one-eighth teaspoon of manure from a cow with clinical signs of Johne’s Disease.

Kettle Edge Dairy, Plymouth, Wisconsin, tests all cows that just reached their dry period and heifers approaching parturition once a month. The enzyme-linked immunosorbent assay (ELISA) test categorizes the cows’ blood samples as negative, suspect, weak positive, positive and strong positive.

“I view Johne’s testing as a long-term investment,” stated Joe Hemauer, owner of Kettle Edge Dairy with his wife Sylvia. “If I’m going to dairy and bring my son into the operation, it’s one step we have to take.”

Hemauer said when he discovers a test-positive Johne’s cow he puts her on the potential cull list. If she has other strikes against her, such as difficulty breeding or low milk production, she moves up higher on the cull list. And if she shows clinical signs of Johne’s, she is gone.

The model illustrates:

- It takes many years for the M. Paratuberculosis infection to reach 10%.
- Once it gets started, the infection spreads quickly.
- Different methods of control decrease the prevalence of infection at different rates.
- The fastest method of infection control results when animal husbandry changes are made and a test-and-cull program is instituted.

Disclaimer: This is only a mathematical model based on probability statistics and epidemiology. It is not designed to predict real results in herds. Successful control of Johne’s Disease may be accomplished much faster or slower depending on many conditions specific to each farm or herd. Models of this type are most useful to demonstrate concepts and relationships.

Source: Johne’s Information Center. Reprinted with permission from the University of Wisconsin School of Veterinary Medicine.
Be Proactive

Professional heifer growers can provide their clients,” stated Barbara Drewy-Zimmerman, Plymouth, Wisconsin, who manages 900 heifers. Hemauer is one of her six clients.

Dave Ohman, D.V.M. of Plymouth, Wisconsin, concurred with Drewy-Zimmerman. “A well-managed custom heifer-growing service can be a positive step for controlling Johne’s Disease in your herd,” he stated.

Smaller dairies or those with limited heifer facilities are more apt to commingle young and old animals. Ohman described this as a poor Johne’s biosecurity practice. “Separating animals by age, and separating the young stock herd from the cow herd helps prevent Johne’s transmission,” he stated.

The veterinarian for both Hemauer and Drewy-Zimmerman, Ohman noted, “Having your heifers custom raised, and paying strict attention to other Johne’s critical control points can help you effectively manage this disease.”

“As a heifer grower, I encourage all of my clients to test dry cows for Johne’s,” Drewy-Zimmerman, the Professional Dairy Heifer Growers Association first vice president, explained. “If a cow is positive, that doesn’t mean she has to be culled. But, don’t feed her colostrum.”

Drewy-Zimmerman said she does not require Johne’s testing as part of her contract. However, she encourages clients to test all dry cows to screen colostrum and for herd monitoring purposes.

This heifer grower houses calves in individual pens up to 8 weeks of age. She commingles heifers once they get past the most disease-susceptible age.

Growing dairies must deal with Johne’s

“Anybody that’s expanding will have to deal with Johne’s,” Drewy-Zimmerman claimed. “The most cost-effective way is to test dry cows so you have the results before they freshen.”

In an ideal world, Johne’s-free herds can protect against the disease by keeping the herd closed. As many dairies continue to grow, however, they often secure animals from other sources. If you are expanding your herd, seek cattle from low risk and/or Johne’s test-negative herds. Since current Johne’s tests are not completely accurate, remember that knowing the risk status of a herd is more powerful than knowing the test results of a specific animal.

“As dairies increase in size and take on more of a business approach, more and more dairy producers are willing to test for Johne’s,” Ohman commented. “The disease needs to be managed. I see many dairy producers taking the appropriate steps so we can move forward in controlling this disease.”

Because Johne’s is silent in its early stages, experts recommend waiting to test cows until they reach 36 months of age. The ELISA test becomes more accurate as cows mature.

However, Hemauer always tests heifers he plans to purchase. He realizes he is taking a risk because a carrier may test negative, due to her young age. But if a heifer tests positive, he definitely does not want to bring her into the herd.

What about vaccination?

According to Balzer, a Johne’s vaccine is available. However, she does not recommend it for routine use in most herds. Use of this vaccine requires permission from the state veterinarian, since it can interfere with TB testing results. And, it interferes with Johne’s testing. Vaccinating for Johne’s can reduce the number of cows showing clinical signs, thereby reducing the number of cows shedding the Johne’s microbe.

In an effort to better manage the disease, Wisconsin recently developed Johne’s Disease testing rules. No one will make a dairy producer test animals for the disease. But, those who test will add value to their herd.

The rules encourage dairy producers to test their herds annually. Based on the results, a farm receives a ranking – A, B, C or D (see chart).

Wisconsin’s Johne’s Grading System

<table>
<thead>
<tr>
<th>Preventative Management Level</th>
<th>Number of Animals Tested</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>30 head or 10%</td>
<td>No animals test positive</td>
</tr>
<tr>
<td>B</td>
<td>Entire herd</td>
<td>Fewer than 5% positive</td>
</tr>
<tr>
<td>C</td>
<td>Entire herd</td>
<td>Fewer than 15% positive</td>
</tr>
<tr>
<td>D</td>
<td>Entire herd</td>
<td>More than 15% positive</td>
</tr>
<tr>
<td>Maximum risk</td>
<td>30 head or 10%</td>
<td>One or more animals test positive</td>
</tr>
<tr>
<td></td>
<td>No official herd test</td>
<td>Automatically classified as maximum risk</td>
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For more information about Johne’s Disease, visit the Johne’s Information at: http://www.vetmed.wisc.edu/bsfjohnes/index.html.

For more information on Johne’s Disease and control programs, contact:

- Illinois: Dr. Richard Hull 217-782-4944
- Indiana: Dr. Bret Marsh 317-227-0300
- Iowa: Dr. Charles Thoen 515-294-7608
- Kansas: George Teagarden 913-296-2326
- Michigan: Dr. Nathan Zuel 517-373-1077
- Minnesota: Dr. Bill Hartmann 651-296-2942 ext. 27
- Missouri: Dr. Richard Stringer 573-751-3377
- Nebraska: Dr. Larry Williams 402-471-2351
- North Dakota: Dr. Larry Schuler 701-328-2655
- Ohio: Dr. Lee McPhail 614-728-6220
- South Dakota: Dr. Sam Holland 605-773-3320
- Wisconsin: Dr. Libby Balzer 608-269-0604
- USDA: Dr. Bill Buisch 303-784-6200
Admitting that it is difficult to determine his return on investment, Hemauer believes that business-minded dairy producers should follow recommended testing and biosecurity procedures.

Hemauer said educating dairy producers about Johne’s prevention is key to managing the spread of this economically devastating disease. “I firmly believe the dairymen that are going to be milking cows 10 years from now are eager for information and will take a proactive stance once fully informed,” he remarked. “We need to put some money toward education.”

Believing that the marketplace will cure Johne’s, Hemauer continued, “Just as I would never buy a cow without knowing her somatic cell count, I will not buy a cow without knowing her Johne’s status. This ‘free market’ approach will force the dairymen who choose to exit the business to know what their Johne’s status is and take steps now to correct the situation.”

“Just like we’ve been instructed to prep cows with individual towels and use A.I. university and Extension specialists need to tell dairy producers to annually test each cow for Johne’s Disease,” Hemauer adds.

Minnesota provides funding for Johne’s testing

The Minnesota state legislature authorized $300,000 in fiscal year 2000 for Johne’s Disease testing and educational programs. This past year, Minnesota dairy producers had access to $200,000.

According to Bill Hartmann, D.V.M., of the Minnesota Board of Animal Health, 261,387 head in 702 herds were tested in fiscal year 1999. Nearly 10% of the animals tested positive based on the ELISA test.

Any dairy producer is eligible to receive financial assistance for Johne’s testing. Each herd can test up to 30 cows and the state will pay for the entire laboratory cost.

For herds that want to test more than 30 cows, the state pays half of the laboratory cost after the first 30 head. The owner must meet with the herd veterinarian and district veterinarian to develop a Johne’s control and testing program to be eligible for cost-sharing on additional cattle.

Hartmann noted that occasionally the ELISA test comes up with a false positive. The state will then pay for fecal culture testing on animals that test positive.

Keep in mind that state funds only cover laboratory fees. Dairy producers incur any related veterinary fees.

Ohio also covers testing costs

The Ohio Department of Agriculture Animal Disease Diagnostic Laboratory provides free Johne’s Disease testing to any herd associated with the Ohio Johne’s Test Negative Status Herd Program. According to Lee McPhail, D.V.M., of the Ohio Department of Agriculture, more than 50 of the state’s herds currently test their cows annually.

Participating herds test all animals more than 24 months old every 10 to 14 months. The ELISA test is done one year, with the fecal test being run the next year.

Fecal culture test-positive cows cannot be sold, except for slaughter. Ohio dairy producers work with their herd veterinarian and state and federal field veterinarians to develop herd plans to prevent and control Johne’s Disease. Ohio awards a status level for each participating herd, from one through six. The level is based on the number of years the herd has maintained Johne’s test-negative status.

Eliminate fecal contamination

According to Balzer, the primary route of Johne’s transmission within a herd is fecal contamination. To be on the safe side, all manure should be considered Johne’s manure. Thus, biosecurity measures aimed at reducing or eliminating fecal contamination of calves is the most powerful tool available.

Because calves are the most susceptible to contracting Johne’s, cows must freshen in a clean and dry environment, used only for calving. Remove calves from dams immediately. (Refer to the calf management chart for additional tips.)

Along with testing all dry cows and heifers, Hemauer’s 400 cows calve in a calving pen – not a hospital pen. Calves are immediately removed from their dams to a holding box where they are fed one gallon of Johne’s-free colostrum. Hemauer also tests colostrum for immunoglobulin.

Protect calves from Johne’s

- Calve cows in a clean, dry environment
- Isolate calves from dams immediately
- Don’t let calves nurse
- Feed milk replacer
- Do not feed refused feed from cows to young stock
- House young stock separately from cows
- Don’t permit direct contact with manure or run-off from cows
- House calves in individual pens/hutches
- Keep waterers and feed from manure contamination

“Use colostrum from dam to calf only – never pooled colostrum,” explained Balzer. If a cow has Johne’s Disease, however, do not feed her colostrum to the newborn calf. For calves coming from test-positive Johne’s cows, feed colostrum that has been saved from mature cows that have consistently tested negative for Johne’s Disease.

To protect animals of all ages, preventing feed and water fecal contamination is vital. Pasture heifers and feed them separately from adult cows. Keep supplemental feed up off the ground.

Dual-purpose skid steers, a “no no”

Skid steers are common labor-saving devices – used for feeding and manure removal. Do not use the same skid steer for both of these jobs. A skid steer bucket and tires laden with manure can quickly contaminate feed. Ponds and puddles can easily be contaminated with manure. Keep young stock and adults from these water-holding areas.

Housing young calves and heifers separately from adult females and males is another key prevention tool. Utilizing custom heifer rearing services is one way to separate young stock from adults.

Custom heifer raising helps

“Getting calves away from cows is one of the best services pro-