

# Educate yourself about Johne's

By Kimberlee Schoonmaker

Use these frequently-asked questions to expand your knowledge of Johne's disease.

In 1997, the National Animal Health Monitoring System released a study about Johne's disease on U.S. dairy operations. According to that study, dairy producers didn't know a whole lot about this disease. In fact, about 45 percent of producers were either unaware of or knew very little about Johne's.

Today, more producers are aware of Johne's and are taking steps to protect their herds through aggressive management and testing.

Following is a list of frequently-asked questions about Johne's and their answers which have been provided by the leading experts in the field. Use this information to learn more about Johne's disease and how to take action against it on your dairy.

**Q:** **Question:** How soon should I remove a calf from the

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maternity pen in a Johne's-infected herd?

**A:** **Answer:** "The maternity area is a very high-risk area," notes Scott Wells, veterinarian at the University of Minnesota. "We need to look long and hard at where cows calve and what sort of risk we expose calves to."

Calves contract Johne's when they consume milk or manure which contains *Mycobacterium paratuberculosis*, the organism which causes Johne's disease. Allowing a calf to remain in the maternity pen — even in a well-managed one — provides ample opportunity for her to consume the organism from contaminated bedding or by nursing from an infected cow.

The longer you keep calves in the maternity pen, the greater their risk of contracting Johne's, says Don Hansen, veterinarian at Oregon State University. Thus, remove calves from the maternity area immediately or as soon as possible after calving.

**Q:** **Question:** Will pasteurization kill the Johne's organism in waste milk?

**A:** **Answer:** "The work we've done this far shows it does," says Judy Stabel, veterinarian at the National Animal Disease Center in Ames, Iowa.

The research, published in the February 2001 *Journal of Dairy Science*, found that a low-temperature, high-duration system, or "batch" pasteurization, was very effective at killing the Johne's organism when the milk was heated to 150 F for 30 minutes. The researchers are now investigating the effect of pasteurizing waste milk with a high-temperature, low-duration system.

Until this research becomes available, you should pasteurize waste milk at a temperature of 150 F for 30 minutes, or feed milk replacer instead.

Calves also can contract Johne's when they consume infected colostrum. To avoid this situation, feed high-quality colostrum from Johne's-negative animals only.

**Q:** **Question:** Can a calf become infected with Johne's before birth?

**A:** **Answer:** While Johne's primarily infects animals when they consume infected manure, colostrum or milk, it can sometimes transfer to a calf in the uterus.

In fact, researchers at the University of Pennsylvania



To reduce a calf's chances of contracting Johne's, remove her from the maternity area immediately following calving or as soon as possible.

and Ohio State University have cultured the Johne's organism from the fetuses of infected cows. They recovered the organism from the fetuses of subclinical cows — animals shedding low numbers of the Johne's organism, yet not showing any signs of infection — about 10 percent of the time. In addition, the risk of finding the organism in fetuses from clinical cows — animals experiencing rapid weight loss, severe diarrhea and reduced milk production — as well as cows shedding a large number of organisms, increased



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to 20 percent to 40 percent. "Inter-uterine risk occurs, but becomes much greater in animals that have progressed to advanced levels of infection," notes Christine Rossiter, veterinarian at Cornell University.

**Q:** **Question:** If my herd is infected, and I apply manure or lagoon water on my cropland or pastures, can I spread the disease to uninfected animals?

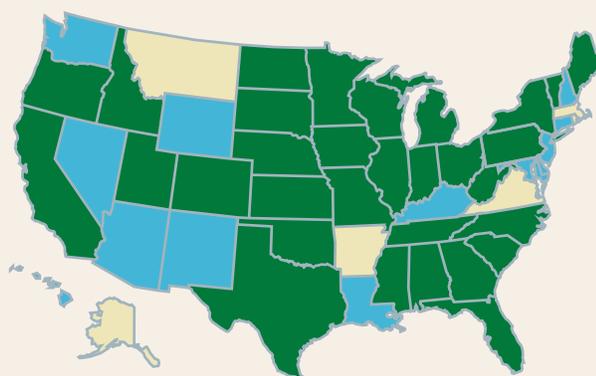
**A:** **Answer:** Researchers across the country are just beginning to look for the presence of Johne's in manure and lagoon water. So far, they have been able to find the organism in lagoons and pasture areas. For example, prelimi-

nary work at Cornell University indicates the Johne's organism is probably quite prevalent in lagoons, Rossiter says. Meanwhile, collaborators at the University of Minnesota, the University of Pennsylvania, and the National Animal Disease Center in Ames, Iowa, have cultured the organism from pasture-type areas, notes Wells.

Despite this progress, there is very little, if any, research to identify the risk associated with applying lagoon water or manure to pastures or cropland.

However, the Johne's organism is very resistant to heat, cold and drying, notes Mike Collins, veterinarian at the University of Wisconsin. Because of this, it can

#### WHERE ARE THE JOHNE'S PROGRAMS?



■ Yes    ■ No    ■ No, but plan to

This map shows which states currently have Johne's disease committees or programs.

Source: USDA

survive in the environment for at least a year, although it can't grow or replicate outside of the animal.

"Use common sense to limit the accumulation of Johne's manure in the environment," Rossiter says. Use these precautions when applying manure or lagoon water to

pastures or cropland:

- Apply manure or lagoon water in the fall after you have harvested your forages.
  - If you must apply manure during the growing season, feed those forages to adult animals only.
  - Don't allow youngstock
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to graze pastures which contain raw manure or were previously grazed by adult animals, especially Johne's-positive animals.

■ Prevent Johne's-positive animals from grazing with healthy animals.

**Q:** **Question:** How much of a risk are Johne's-positive cows to other adult animals in a free-stall or tie-stall barn?

**A:** **Answer:** In general, animals that are at least two years of age have a low risk for contracting Johne's. "It takes an awful lot of organisms — more than it takes to infect a calf or heifer — to establish an infection in a cow," Hansen says.

Before you rule out the threat of Johne's to your cows, take a walk through your facilities and assess the risk presented by the environment. For example, manure-laden alleys or pools of dirty water in the free-stall alley may present a risk to your cows. Likewise, using the same skid-steer loader or shovel to handle manure and feed presents a risk.

Use sound management practices — separate equipment to handle feed and manure, for example — in your free-stall or tie-stall barns to prevent Johne's-infected manure from contaminating feed and water.

**Q:** **Question:** What is the status of national and state Johne's-control programs?

**A:** **Answer:** Currently, there is no national program to help you control Johne's in your herd.

There is, however, a voluntary herd status program, developed by the National Johne's Working

Group. This program is designed to help producers identify the level of Johne's in their herds and work toward certifying their herds as free of Johne's or at a low risk of harboring Johne's.

Meanwhile, several states have developed similar voluntary status programs. And some states have established a Johne's committee to investigate or set up a Johne's program. (To find out if your state offers a program or has formed a Johne's committee, please see, "Where are the Johne's programs?" on page 47.)

Despite these efforts, there is very little uniformity from one state program to the next.

**Q:** **Question:** When is the best time to test for Johne's in my herd?

**A:** **Answer:** The best way to determine when to test is after completing a risk assessment with your veterinarian, Wells says. This assessment will identify areas where disease is most likely to be transferred on your dairy.

For example, let's say you've assessed the risk of Johne's on your dairy and have identified the maternity area as a high-risk area. Therefore, implement management practices to control Johne's in the maternity pen.

Then, add a testing program to aid these control efforts. For example, test animals about 120 to 150 days prior to calving to determine their Johne's status, Rossiter says. Then, use the test results to make management decisions — such as preventing a Johne's-positive animal



If you spread manure from a Johne's-infected herd on your cropland, feed forages harvested from those fields to your adult herd in order to minimize the risk of infection in heifers.

### ON-LINE RESOURCE MATERIALS

The following web sites contain information to increase your knowledge of Johne's, as well as help you assess the risk of Johne's on your dairy.

■ Johne's Information Center, developed by Mike Collins at the University of Wisconsin, can be found at the following web site: [www.vetmed.wisc.edu/pbs/johnes](http://www.vetmed.wisc.edu/pbs/johnes)

■ "Prevention and Control of Johne's Disease in Dairy

Cattle," a herd risk-assessment, is available at the National Johne's Working Group's web site: [www.usaha.org/njwg/njwg.html](http://www.usaha.org/njwg/njwg.html)

■ The National Animal Health Monitoring System's (NAHMS) Dairy '96 Study: "Johne's Disease on U.S. Dairy Operations" can be viewed at the following web site: [www.aphis.usda.gov/vs/caeah/cahm](http://www.aphis.usda.gov/vs/caeah/cahm)

Once there, click on "Dairy Cattle".

from calving in a group pen and feeding Johne's-negative colostrum — to minimize the spread of Johne's at calving.

It's not always necessary to test the whole herd all at once. Work with your veterinarian to identify high-risk areas and set some objectives for controlling Johne's in

these areas. Then, "use the test as a tool to enhance your management," Hansen says. <sup>RH</sup>

