

# Ag Officials Eyeing Johne's Disease

by **CANDICE POLLOCK**

An incurable ruminant disease that is difficult and expensive to eradicate and that can cause large production losses is becoming more prominent across the country. Ohio State University (OSU)

Extension specialists want cattle producers to be more aware of it.

Bill Shulaw, an OSU Extension beef and sheep veterinarian, says Johne's disease, which has been around for more than 100 years, is now considered a major

disease problem, especially for the cattle industry.

Johne's disease is a chronic bacterial intestinal infection that infects silently and is hard to eradicate. It can affect a large proportion of the herd and cause

production losses, premature culling and loss of seedstock marketability. Johne's disease is caused by a bacterium called *Mycobacterium paratuberculosis*, a hardy organism related to those that cause tuberculosis and leprosy.

"Current estimates from the USDA (U.S. Department of Agriculture) place the prevalence of the disease at about 22% of dairy herds and 8% of beef herds. These are conservative estimates," says Shulaw, adding that the disease is garnering more attention because of such concerns. "This year, the USDA made available about \$20 million to the states for Johne's disease control efforts. It is likely that there will be similar funding for the next fiscal year."

Johne's disease can cause large economic losses to the industry because of its ability to strike animals at a young age, yet remain hidden for many years. Once it's identified in a home-raised animal, a percentage of the rest of the herd may also be infected. A study conducted in 1996 by the USDA's National Animal Health Monitoring System (NAHMS) estimated a \$200-\$250 million loss to the dairy industry alone because of the disease.

## USDA approves test

The University of Minnesota (U of M) Veterinary Diagnostic Laboratory has received U.S. Department of Agriculture (USDA) approval to offer a new, rapid and low-cost diagnostic test for Johne's disease.

Johne's disease is a bacterial infection (*Mycobacterium paratuberculosis*) causing intestinal inflammation in ruminants. It poses a significant threat to dairy and beef production industries.

"Controlling Johne's disease is one of Minnesota's top agricultural priorities," says Jim Collins, director of the Veterinary Diagnostic Laboratory in U of M's College of Veterinary Medicine. It is estimated that, overall, 25% of Minnesota dairy herds are infected, and 40% of large dairy herds with more than 300 milk cows are infected. "We have been working closely with the Minnesota Board of Animal Health, U.S. Department of Agriculture and Minnesota livestock producers to fight this serious and growing problem."

Developed by U of M scientists Kay Faaberg and Carrie Wees, the new DNA-based PCR (polymerase chain reaction) test enables the

Animals may shed the *M. paratuberculosis* organism in their manure, exposing herd mates, for months to years before showing signs of the disease, Shulaw says. "The number of organisms that it takes to spread infection under a field setting is not well established, but we feel that somewhere around 1,000 to 10,000 organisms may be enough. Because infected animals may shed millions of the causative bacteria in their manure daily, the potential for contamination of the young animal's feed or environment is very high. For example, if you were able to mix the manure from a single cow shedding one million organisms per teaspoonful with the manure of 99 cows that were not shedding any, the resulting mix would still contain 10,000 organisms per teaspoonful."

In addition to transmitting the disease through manure, research suggests that the bacteria are finding their way into the energy-rich, antibody-rich colostrum, or first milk, calves receive from their mothers.

"If the udder of a cow is dirty and you get wash water down the side of the

*(Continued on page 136)*

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**for Johne's**



Veterinary Diagnostic Laboratory to test hundreds of animals at a time. It takes only 48 hours to complete, compared to four months for the standard test, and is affordable for livestock producers. The test is available only at the U of M Veterinary Diagnostic Laboratory.

"We have made great progress, but it isn't enough. Our intention is to further increase the speed and reduce the cost of the test," said Jeffrey Klausner, dean of the Veterinary College. "We won't be satisfied until Johne's disease is well on the way to being controlled in Minnesota."

For more information contact Jan Williams, U of M College of Veterinary Medicine, at (612) 624-6228.

**Editor's Note:** For more information regarding Johne's disease, visit [www.angusjournal.com](http://www.angusjournal.com) or [www.angusbeefbulletin.com](http://www.angusbeefbulletin.com). Click on "Search Back Issues" located above the publication logo. From the search page, enter Johne's as the key word, and click search. This will access a list of stories published in the respective publication. The stories are viewable with Adobe Acrobat, for which a free download is available from the site.

**Johne's Disease** *(from page 135)*

udder while milking, only a drop or two of manure at a concentration of a million bacteria per gram is enough to contaminate a five-gallon bucket of colostrum. Virtually all calves fed out of that bucket might be infected," Shulaw says.

**Prevention strategies**

Shulaw said signs of Johne's disease in cattle include chronic diarrhea that does not respond well to treatment and severe weight loss.

The key to controlling the disease is sanitation and preventing young animals from ingesting the bacteria.

Producers should adhere to the following control practices.

- Reduce environmental contamination by identifying infected animals and culling them from the herd.
- Provide clean, well-drained areas for calving. Dirty udders and cows are sources of bacteria for young calves at the time they are most susceptible.
- Remove cow-calf pairs from the calving area as soon as possible after

calving and place them on uncontaminated pasture. This recommendation is useful to prevent other calving diseases as well.

- When possible, raise heifers separate from adults. Adult cattle represent potential carriers of infective bacteria. Do not spread manure on heifer pastures.
- Isolate unthrifty animals or animals with diarrhea until a diagnosis is made or until the animal is culled.

"Ask about the status of a seller's herd before purchasing if possible.

Purchasing animals from herds participating in a testing program, such as Ohio's Johne's Disease Test-Negative Status Program, and finding out how long they have been testing is far, far less risky than buying from herds with unknown status," Shulaw says.

The following Web sites provide additional information on Johne's disease:

- [www.ag.ohio-state.edu/~vpm/](http://www.ag.ohio-state.edu/~vpm/)
- <http://ohioline.osu.edu/vme-fact/0003.html>
- [www.apbis.usda.gov/vs/ceah/cabm/Dairy\\_Cattle/johnsart.htm](http://www.apbis.usda.gov/vs/ceah/cabm/Dairy_Cattle/johnsart.htm)
- [www.apbis.usda.gov/vs/ceah/cabm/Beef\\_Cow-Calf/bf97john.pdf](http://www.apbis.usda.gov/vs/ceah/cabm/Beef_Cow-Calf/bf97john.pdf)

**Educational meetings**

OSU Extension will conduct a series of meetings about Johne's disease to inform producers about the disease and the programs available in Ohio for testing and control. Topics to be covered include symptoms and descriptions of the disease, methods of prevention and control, testing procedures and regulatory issues regarding the disease. Speakers will be from OSU Extension, the Ohio Department of Agriculture (ODA), the USDA and producer members from the ODA Cattle Health Advisory Committee.

The following is a list of meeting dates throughout Ohio. For more information, contact the OSU Extension offices.

- March 9, 12:30 p.m.-3 p.m., Salem
- March 9, 7 p.m.-9:30 p.m., Canfield
- March 10, 1 p.m.-3:30 p.m., Wooster
- March 15, noon-3:30 p.m., Maria Stein
- March 15, 7 p.m.-9:30 p.m., Sidney
- March 24, 7p.m.-9:30 p.m., Highland County



**Editor's Note:** This article was supplied by OSU News and Media Relations, Section of Communications and Technology, Columbus, Ohio.