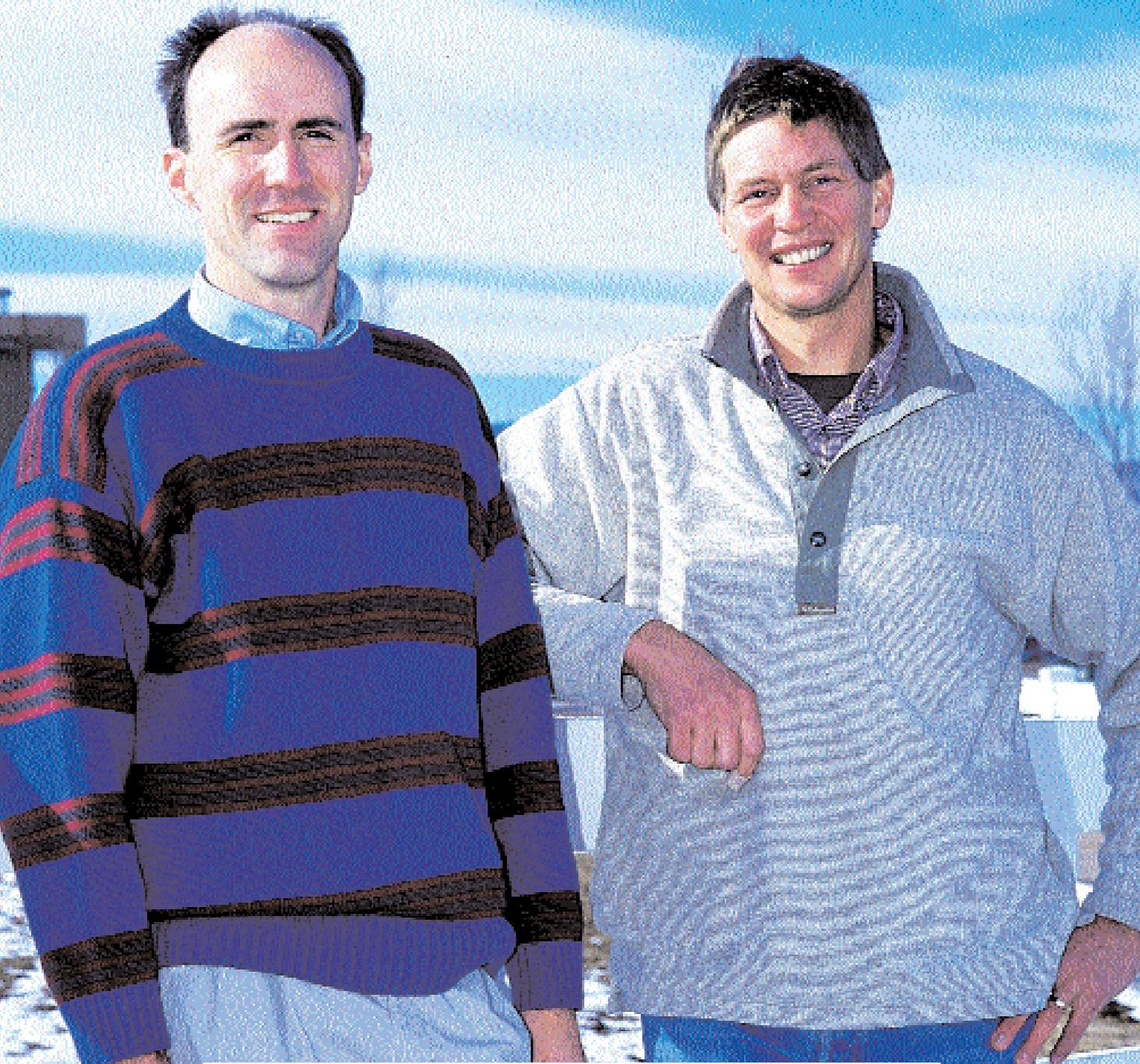


# Bovine Veterinarian

February 1998

A supplement to Dairy Herd Management and Drovers for bovine practitioners



**JOHNE'S DISEASE**  
Prepare yourself for the challenge  
Also: Ectoparasites

Vance

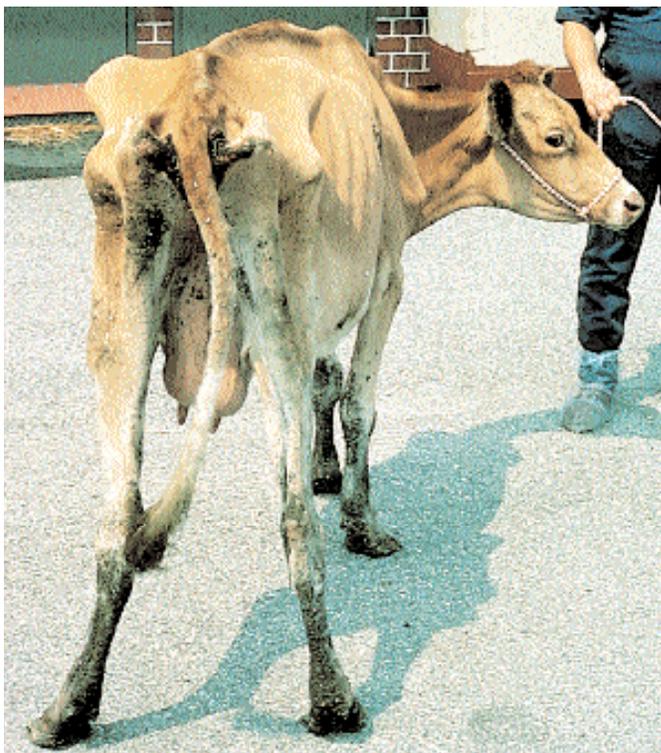
A VANCE PUBLICATION

# Bovine Veterinarian

February 1998 Section B

A supplement to *Dairy Herd Management* and *Drovers* for bovine practitioners

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*COVER: Scott Wells, DVM, PhD (left) and Frank Garry, DVM, MS, are two members of the National Johne's Working Group who are working toward consistent information and regulations on the disease. Geni Wren*

## Johne's funding needed

Johne's disease is becoming an important issue in the cattle industry, and is becoming talked about in consumer press because of suspected links to Crohn's disease in humans. So why isn't anyone funding research on the disease?

"Government funding for animal disease research has been shrinking for nearly a decade while this prevalent, infectious disease has been spreading," says Mike Collins, DVM, PhD, University of Wisconsin. "Of 307 USDA-NRICGP grants funded in 1992-1996, only two went to support paratuberculosis. The shrinking pool of USDA funds is pitting ARS and academic veterinary scientists against each other as they compete for grants. The USDA-NRICGP funding system makes virtually no allowance for the importance of the Johne's disease problem to the country. If the fundamental science was interesting, the grant would get funded."

"We have tended in recent years to fund research only when it becomes clear that a disaster is pending or has occurred," says Frank Garry, DVM, MS, Colorado State University. "A careful evaluation reveals Johne's disease to be widespread, economically important to producers, and of potential importance regarding human health as well. There are many important questions that need to be addressed to answer the challenges the disease poses."

"The level of funding for Johne's research is totally inadequate and minuscule by comparison to the magnitude of the Johne's problem in the U.S.," says Collins. "Another problem is that research on such a chronic disease and slow growing bacterium is expensive. Academic researchers shy away from studying this bug as it is hard to generate the numerous publications needed for tenure."

"Here's a disease that has national prevalence yet almost no federal or industry dollars are focused on it," adds Garry. "We need more information, yet no one is funding research. Funding of Johne's research should come from multiple sources, including federal agencies, human and animal health interest groups, and the livestock industries. It's in the best interest of all concerned to solve this problem."

In this issue, *Bovine Veterinarian* will begin a series on Johne's disease and how you can become more involved in its control.

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Next *Bovine Veterinarian* issue: March 1998

# Will you take on Johne's disease?

*Before you approach your clients about a Johne's disease program, educate yourself and plan ahead for effective strategies.*

**By Geni Wren**

*Editor's note: First in a series on Johne's disease.*

As veterinarians, you've probably been familiar with Johne's disease for many years (it was identified nearly a century ago), yet a NAHMS Dairy '96 Study shows that 45 percent of dairy producers and more than 80 percent of beef producers were either unaware of the disease or recognized the name only. "This lack of familiarity has hindered control and prevention of Johne's disease

in this country, and efforts are currently underway to change this state of awareness," says Scott Wells, DVM, PhD, USDA:APHIS:VS.

To identify the problems with Johne's as well as its economic impact and management strategies to control it, the U.S. Animal Health Association's Johne's Committee has developed the National Johne's Working Group (NJWG) (see box on page 16) to identify risks and opportunities for controlling and preventing the disease in U.S. dairy herds (information that will also apply to beef herds). The NJWG is working through state and Area Veterinarians In Charge to appoint a person in each state who can serve as a contact for Johne's disease information.

## Why you need to know

Frank Garry, DVM, MS, Colorado State University, a member of the NJWG, says many producers' impression of Johne's is that it is hard to assess the economic impact of the disease; testing is a nuisance and can be a big economic drain; and because it's a chronic, insidious disease with poor testing methodology, it's hard to make progress in its prevention and control.

"There's an overwhelming attitude that it's such a gnarly problem that it can't be solved," says Garry. "There's a tremendous pressure to not look and test for the disease. But according to the NAHMS survey, if 40 percent of the large herds have the disease, that means 60 percent don't. That to me is a compelling reason for producers to test their herds, find out if they have it or not, and if they don't, put in place management strategies to keep it out of the herds in the future. We know the risk factors for introduction of Johne's in the herd. There's no quick fix, but if we can beat a disease like brucellosis, we can take on Johne's. Ignorance of the disease and its control measures is just going to allow it to creep into herds."

Though economic parameters are hard to define for Johne's, Wells says the NAHMS Dairy '96 Study showed that in infected herds where at least 10 percent of the cull cows showed clinical

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MIKE COLLINS, DVM, PhD

***Paratuberculosis is an infectious disease that can be controlled.***

**The veterinarian needs to tell the client how it could potentially affect him, how the disease transmits and that there are management strategies they can implement**

signs like those of Johne's disease, the average cost to those producers was \$227 for each cow in the herd per year. "In other words, the cost for a 100-cow dairy with at least this number of Johne's cull cows with clinical disease would be about \$23,000 each year, the majority of this loss

## What your clients should know about Johne's disease

Mike Collins, DVM, PhD, says the following facts about paratuberculosis should be stressed to herd owners:

- 1 Paratuberculosis decreases milk production of subclinically infected cows as early as first lactation.
- 2 Paratuberculosis shortens the productive herd-life of cattle.
- 3 Young cattle are more susceptible than are older animals. The critical window of susceptibility is roughly the first six months of life.
- 4 *Mycobacterium paratuberculosis* is principally transmitted by the fecal/oral route, but can also be transmitted *in utero* and from milk of infected cows, more so in cows with late-stage infections. Because of this, calves born to infected cows have higher likelihood of becoming infected than do calves born to noninfected cows.
- 5 Because cattle herds are usually closed self-replicating populations, unless something is done to intervene, the *M. paratuberculosis* infection rate in the herd will increase with time.
- 6 Control of paratuberculosis takes time and requires management changes to minimize the chances of infecting calves, and culling of *M. paratuberculosis*-infected adults from the herd. Culling only clinically ill cows with paratuberculosis is not sufficient to control spread of the infection.

due to reduced milk production," he says. "Johne's disease is a herd problem that worsens with time, reducing production and profit. Implications of Johne's disease should be considered by all dairy producers and their veterinarians."

Garry adds that veterinarians need to educate clients that there may be a likelihood of a problem in their herds. "The veterinarian needs to tell the client how it could potentially affect him, how the disease transmits and that there are management strategies they can implement. You can't realistically be of help to clients in working with the disease unless they are first educated about it. Veterinarians need to educate themselves and convey to their clients that education is an essential first step in working with the disease."

### Three questions

Unlike what you might think, just going out and testing a herd is not the first thing you should do until you know what to do with the information. Each client's situation will be different, and you need to have some plans in place before you test. Mike Collins, DVM, PhD, University of Wisconsin School of Veterinary Medicine, also on the NJWG committee, has outlined three questions to discuss with your client before starting a testing or control program:

#### 1 What is the primary business objective of the cattle enterprise: milk production, meat production or rearing of breeding stock?

Commercial milk producers may not be appreciably affected economically by paratuberculosis, provided the infection rate in the herd is <5 percent. The disease causes 5 to 25 percent reduction in milk production and shortens the productive life of a cow in a herd.

Breeders and owners of registered cattle provide seedstock for other herds and have an obligation to prevent transmission of *M. paratuberculosis*. Essentially every herd that becomes infected with *M. paratuberculosis* does so by purchase of an infected animal, cow or bull. Consequently, herds of breeding cattle or any herd that sells herd replacements should become *M. paratuberculosis* free for the benefit of the industry.

#### 2 How long does the owner intend to stay in business?

Johne's is among the slowest progressing infectious diseases of cattle. It takes a considerable number of years for clinical disease to become evident after introduction of the infection into a herd, and it takes a similarly long period, five or more years, to erad-

icate the infection, depending on how aggressively eradication is pursued. Unless the owner intends to keep his/her herd for more than five years, little profit will be realized from a paratuberculosis program.

### **3 How aggressively does the owner want to tackle paratuberculosis?**

Many factors enter into the decision: type of cattle, business, profitability of the particular enterprise, indebtedness and cash flow of the business, knowledge and understanding of paratuberculosis, and perception of the client, or perhaps those of his/her neighbors, about the disease.

"Veterinarians should try to provide the most accurate, current knowledge about paratuberculosis," says Collins. "It is up to owners to decide how much they can afford to spend to control the infection. The difficulty comes in evaluating the long-term benefits of investment in paratuberculosis control."

### **State regulations**

Before you jump into Johne's disease control and testing programs for your clients, you should find out what regulations your particular state has on the books concerning the disease. Federal regulations developed in the 1950s have rules on interstate shipment of cattle with Johne's, though Garry says these rules don't identify the test methods that are accepted nor do they explain how veterinarians are to handle these situations.

"What this means is that the state veterinarians have an obligation to have something about identification of these cattle in their regulations, which many choose not to enforce," Garry says. "This leaves the practitioner in a quandary. He or she should call the state veterinarian and ask, at the present time, what is the state's take on the regulations? Is it a notifiable disease? What is a notifiable test? What rules apply if I test animals by fecal culture or serology? At the very least this may get state veterinarians thinking about what they should do."

"It is particularly important for veterinarians working with registered beef herds and exportation of cattle to know within their state what kind of regulations and regulatory implications apply," adds Wells of the USDA.

In 1997 the National Johne's Working Group sent out a survey concerning the status of a Johne's Disease program in each state and the territories of Guam, Puerto Rico and the Virgin Islands. "Overall, the results to this survey were very interesting and indicated that there is still a long way to go before Johne's disease is recognized as a disease that plays an important role in



**Scott Wells, DVM, PhD,** says a lack of producer knowledge of Johne's has hindered the prevention and control of the disease.



**Frank Garry, DVM, MS,** says there's a movement to make the Johne's regulations across the country more uniform and consistent.

ruminant production," says Joseph Van Tiem, DVM, MS, of the USDA:APHIS.

Forty-three states plus Guam, Puerto Rico and the Virgin Islands responded to the survey. Those that didn't respond were Delaware, Hawaii, Idaho, Kentucky, Maine, New Mexico and South Carolina. States with a Johne's disease certification program included Maryland, Min-

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### **Johne's disease information**

For additional information about Johne's disease, the following are available:

- National Johne's Working Group, Education Subcommittee Chair, Don Hansen, DVM, Oregon State University, 541-737-6533, or [hansen@ccmail.orst.edu](mailto:hansen@ccmail.orst.edu).
- Your state Johne's Disease Committee (if formed).
- *Paratuberculosis, Veterinary Clinics of North America — Food Animal Practice*, July 1996.
- Johne's disease on U.S. Dairy Operations, USDA:APHIS:VS, 1997, found on the web at <http://www.aphis.usda.gov/ceah/cahm>, then look under dairy.
- Johne's Information Center on the World Wide Web at <http://www.vetmed.wisc.edu/pbs/johnes>.



THOMAS QUARE

**Veterinarians need to assess their clients' situations, future goals and type of operation before implementing a Johne's program, says Mike Collins, DVM, PhD.**

nesota, Missouri, New York, Ohio, Pennsylvania, South Dakota and Wisconsin. Those with a Johne's disease control program include Illinois, Indiana, Iowa, Michigan, New Jersey and New York.

"The survey responses indicate that most states are waiting for the USAHA Johne's Committee, and specifically the NJWG, to develop recommendations that would be easy to enact uniformly in the United States," says Van Tiem. "Most of the respondents said their respective ruminant production industries were not interested in a Johne's disease program or they have not listed Johne's disease as a priority. These results indicate a need to educate producers of the potential benefits

of Johne's disease control."

One problem with differing state regulations is that there is no consistency in the vaccination and testing policies between states, whether the states have Johne's programs or not.

For example, Wisconsin requires responders to the ELISA test be sent to slaughter. New Jersey, New York, Ohio, Pennsylvania, South Dakota and Wisconsin require culture positive animals be sent to slaughter.

States requiring veterinarians or laboratories to report positive tests to the state are:

**1. Single animal in herd with ELISA positive results:** Florida, Massachusetts, Michigan, North Dakota, Oregon, Virginia. Animals restricted from interstate movement in Oklahoma.

**2. Multiple animals in herd with ELISA positive results:** Florida, Massachusetts, Michigan, North Dakota, Oregon, Virginia. Animals restricted from interstate movement in Oklahoma.

**3. Positive culture results:** Florida, Massachusetts, Michigan, Minnesota, Missouri, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, Virginia.

To find your state's specific regulations concerning Johne's disease, contact your state veterinarian.

Garry says there's a movement by the National Johne's Working Group to try to make the rules across the country somewhat uniform and more consistent. "It will be important for veterinarians in the coming years to stay up-to-date on the regulations because it will have an influence on what you do. If you test a herd then later find out the state has a policy but it just hasn't been publicized or enforced, it puts you in a difficult situation. What do you do about signing health

certificates that ask about known infectious diseases? Veterinarians need to, on a personal level, decide how to come to terms with this as they work with their clients, and they will probably need to work with their state veterinarian."

"As veterinarians we need to stand up and take professional responsibility to help control this infection," says Collins. "We need to advise our clients to do the right thing for themselves and the industry, or they should get out of the business." ■

*In the next issue: Johne's control strategies.*

## What is the National Johne's Working Group?

The National Johne's Working Group (NJWG) is a subcommittee of the Johne's Disease Committee of the U.S. Animal Health Association. Its many and diverse members are veterinarians, state and federal representatives, academicians, industry personnel (dairy and beef) and others. Its goal is to develop and coordinate implementation of a national Johne's program.

The three co-chairs of the NJWG are Robert Whitlock, DVM, PhD, University of Pennsylvania; John Adams, National Milk Producers Federation; and Gary Weber, National Cattlemen's Beef Association.

The objectives for the NJWG are:

- 1** Evaluate information suggesting *M. paratuberculosis* is a zoonotic pathogen; assess the likelihood that animals serve as a reservoir of infection.
- 2** Evaluate the potential for the organism to contaminate foods of animal origin.
- 3** Identify and encourage research for control and herd certification.
- 4** Evaluate domestic and international economic impacts of Johne's disease and update currently suggested good management practices to prevent entry and spread of infection in livestock.
- 5** Develop a set of policy objectives and goals to enhance development and implementation of Johne's disease control and herd certification program.