



Johne's Watch

A monthly bulletin for livestock producers

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Establishing a Johne's Control Program

Establishing an effective Johne's disease control and prevention program on the farm requires long-term commitments by herd owners, managers and their veterinarian. To be successful, the plan needs to be fully integrated into the farm's total management practices.

There is a clear-cut recipe for Johne's disease control in many herds, says Donald Hansen, DVM, Oregon State University. It requires long-term effort and sustained vigilance and is likely to impact many management areas on the farm and many employees' daily routines.

Determining the approach to be taken on the farm depends on the producer's anticipated outcome and goals. Hansen states that specific goals for Johne's control should be to preserve a herd's uninfected status, minimize its introduction, prevent spread and reduce infection if already present in the herd.

He adds that control of Johne's disease needs to be approached on a whole-herd rather than an individual animal level. Because Johne's disease has a long incubation period, most infected animals show no signs. The individual clinical Johne's case is merely a hint of the magnitude of subclinical infection that may exist.

Determining the presence of Johne's on a whole-herd level is best achieved by a whole-herd screening test. Most Johne's control programs start with a whole-herd blood ELISA test to achieve baseline prevalence.

Johne's disease diagnosis, particularly in Stage I or Stage II animals (subclinical) is a challenge because of the prolonged incubation period and slow development of an immune response. The diagnostic tests are in two categories: detection of the infectious agent, *Mycobacterium paratuberculosis*, and detection of the animal's humoral immune response to infection with that agent. (See *Johne's Watch: Testing Options and Diagnosis of Johne's Disease* for more detailed information.)

The first step in a Johne's disease control program is to estimate the prevalence of *M. paratuberculosis* infection on the farm, states Dr. Donald Sockett, DVM, Wisconsin Veterinary Diagnostic Laboratory — Madison.

This is best achieved by conducting a whole-herd screening test on all animals three years of age or older. He recommends the herd be tested with a whole-herd ELISA test followed by a fecal culture test within a 12-month period.

Follow-up testing should be done on a routine basis (12-14 months) to complement and enhance preventative management efforts. Alternating whole-herd ELISA and fecal culture is recommended to take advantage of the benefits of both types of tests. The test results can be used as part of the total management plan.



Developing a Farm- Specific Program

When designing a testing program on the farm it is important to realize that all the Johne's tests currently available are approved as whole-herd not individual animal tests.

Many people are using the tests wrong, says Todd Byrem, Ph.D., manager of technology for AntelBio. Using the tests on individual animals rather than whole-herds gives misleading results. Producers have to conduct whole-herd tests to determine the prevalence of Johne's disease in the herd.

Byrem adds that when buying cattle producers should be looking for animals from herds that have tested negative rather than an individual cow that tests negative for Johne's disease.

We had a case where a producer had an individual animal test negative on the ELISA only to show up less than six months later with clinical Johne's disease and test positive, Byrem comments.

The herd owners and management team wanting to implement a Johne's control plan should follow these steps:

Education: Producers need to be well informed about Johne's disease and how it impacts their current operation. Understanding how the disease spreads and the possible points of infection on the farm is critical to developing effective control measures. Producers should also become familiar with the available testing methods to achieve realistic expectations. Decisions regarding the type of testing to use and control measures implemented should be based on the producer and veterinarian's knowledge and experience. (See *Johne's Watch: Testing Options and Diagnosis of Johne's Disease* for more detailed information.)

State control programs: Many states have developed a State Johne's Control Program, tailored after the National Johne's Working Group Herd Status Program. The state programs are designed to help producers achieve a certain amount of confidence that their herd is free of Johne's disease. The control programs give producers flexibility in the level of aggressiveness and amount of time taken to complete the program. In most states, the State Veterinarian is the person responsible for the Johne's control program. Producers entering into a Johne's control program on their farm may want to tailor it to their state's control program to gain the benefits of the program.

Assess current management practices: Producers should carefully evaluate the risk factors on the farm for spreading the disease. Areas such as manure management, calf raising, colostrum management and new herd additions should be assessed.

Develop a herd management plan: Management actions to prevent or control Johne's disease are typically sound management practices that are also effective against other serious diseases. According to Hansen, plans should take into consideration the long-term goals, management, desires and capabilities of herd owners and others working on or for the farming operation. The National Johne's Working Group has published a helpful manual for dairy farmers to use when designing their Johne's control program. Copies of the manual can be obtained by contacting: Dr. Hansen at 541.737.6533 or Donald.Hansen@orst.edu, or by contacting AntelBio at 800.631.3510 or northstarcoop@mindspring.com.

Control Objectives

Determine prevalence of the disease in the herd: Conducting whole-herd screening tests will give producers a baseline to begin implementing their control program. The extent and method of testing should be done in the context of a total herd plan to help accomplish the established goals.

The aggressiveness of the individual farm program will depend on the producer's intent in establishing a Johne's disease control program. Those with a high prevalence of the disease or those selling breeding stock may want to take a more aggressive approach, which requires multiple tests several times a year and therefore requires a greater financial investment.

Those producers wanting to take a less aggressive approach may opt for yearly blood ELISA tests, followed by fecal cultures on the ELISA positive animals. For those who want to know the status of the herd, but are not looking to market breeding stock may take the least aggressive approach using limited testing and few, if any, management changes.

The time it will take to achieve goals will depend on the prevalence of the infection and aggressiveness of the control efforts. The more infection, the more difficult and time-consuming Johne's disease control will be. Therefore, Hansen stresses that for most low-risk, low-prevalence herds, the best time to start a control plan is now! The longer the delay the more difficult and expensive control becomes.

Sockett stresses that testing without a complete management plan in place will lead to frustration and lack of success. He adds that the plan should be in place before testing begins.

Producers should work closely with their veterinarians in developing a control and prevention plan. In addition to facilitating the testing, veterinarians can do a risk assessment of the farm, indicating where infection can spread and indicate management practices that can be implemented to reduce or eliminate Johne's.

Some Plan Control Options

Producers should first determine how aggressively they want to approach the Johne's situation in their herd. Some options include:

Management only: Management changes are essential to the success of all the program options. A management only program is generally more affordable than other choices. However, without a baseline-screening test, producers will not know the extent of the infection in their herd.

General management practices should include: calving cows in a clean, sanitary environment; removing the calf from the cow as soon as possible and feeding it colostrum from known Johne's-negative cows; minimizing exposure of a calf to manure from the adult cattle; and raising young stock in a separate area.

Test and remove: This option combines the adoption of improved management practices with whole-herd testing. Whole-herd tests are recommended at least once a year. Records should be kept to identify infected family lines and introduced Johne's cases. Confirmed test-positive animals should be culled when possible to prevent further infection.

The test and remove option permits assessment of the whole-herd



Reporting Johne's Disease

status, identifying high-risk groups and monitors the progress. Another advantage to this program is the ability to have an objective assessment of herd status for selling breeding stock.

The disadvantage to this program is the cost associated with testing and the loss of animals through culling.

Contract raising heifers: Some producers may use an off-farm facility to raise heifers. Removing the young stock from the farm prevents the transmission of the disease from older cattle to calves. This option should be evaluated in terms of an aggressive control program.

Some states require reporting of all Johne's disease test-positive results. Some states also require official action to be initiated by their Office of the State Veterinarian or Department of Agriculture as a follow-up to a positive test report. Additionally, in some states the animal is permanently marked (J-punched) as a test-positive animal. This reporting and in some cases marking of the animal, may discourage producers from beginning a management program.

However, it is important for producers to note that while Johne's disease is reportable it is not actionable. In other words, the state regulatory agency is not going to forcibly remove the test-positive animals. Producers should view the reporting of Johne's disease as a necessary protection for the dairy and beef industries. Producers taking the initiative to test and manage for Johne's are using smart management practices to protect their herd and be proactive with industry matters.

Producers marketing animals may wish to be proactive about Johne's disease prevention or control yet are inhibited by the fear that prospective buyers will find out they are testing for Johne's disease and stop buying animals, Hansen states. Safeguards need to be in place in each state to prevent such unfavorable action from taking place while encouraging producers to address the concerns Johne's disease poses to their herd.

Hansen encourages producers and veterinarians to become aware and involved in their own State Johne's Disease Advisory Group. In most states the State Veterinarian is the official contact for Johne's control programs or advisory groups.

Management options to prevent the introduction of Johne's disease and to control the disease will be covered in the next issue of *Johne's Watch*.

References

National Johne's Working Group: www.usaha.org/njwg/jdplan.html

Hansen, D; Rossiter, C.; *Johne's Disease: A Model for Pathogen Reduction; Manual for Dairy Farmers*. First Edition.

National Cattlemen's Beef Association; *Johne's Disease-Should you be concerned?*