



# John's Watch

A monthly bulletin for large animal veterinarians

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## Establishing a John's Control Program

Establishing effective John's disease control and prevention programs involves long-term commitments by both the veterinarian and the farm management team. Without the support and dedication of all individuals involved, the program will not yield the anticipated results.

Veterinarians can play a key role in establishing a team approach to this serious problem. Veterinarians bring their knowledge and experience to the farm to help control this complex, chronic disease. Their knowledge should help guide the producers in developing an individual farm program based on the management style of the farm. The producers need to be willing to make management changes when necessary and commit to controlling the disease within their herd.

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

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

John's disease diagnosis, particularly in Stage I or Stage II animals 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 *John's Watch: Testing Options and Diagnosis of John's Disease* for more detailed information.)

The first step in a John'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



## Control Objectives

of both types of tests. The test results can be used as part of the total management plan.

When designing a testing program for producers it is important to realize that 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.

There are different approaches and subsequently different outcomes for each control program. Each plan developed depends on the aggressiveness with which control efforts are designed and executed to meet a farm's decided objective. Some producers may choose only preventive management to control or eliminate the disease, whereas another farm may want to use a more aggressive management and strategy.

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.

Sockett stresses that testing without a complete management plan in place will lead to frustration and lack of commitment by the producer. He encourages veterinarians to develop individualized management plans that incorporate the farm's expected outcome.

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. An aggressive approach requires multiple tests several times a year and therefore requires a greater financial investment.

Producers wanting to take a less aggressive approach may opt for yearly serum 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 National Johne's Working Group (NJWG) outlines nine steps to develop a farm — or ranch- specific program:

1. Assess current and long-term goals of the operation's business.
2. Assemble a herd history for probable Johne's disease risk or prevalence.
3. Estimate a most-likely prevalence for Johne's disease in the herd.
4. Identify workplace-specific risks for preventing or spreading the disease.

## Voluntary Johne's Disease Herd Status Program

5. Examine various options to manage identified risks, including costs and benefits.
6. Consider diagnostic and herd testing strategies.
7. Define objectives and timeline to accomplish.
8. Tailor the program around long-term goals, management capabilities and commitment of personnel.
9. Monitor progress and success of the plan at regular intervals.

Hansen states that veterinarians are well suited to help clients and employees decide which control strategies may work best for the operation. Approaches may involve combinations of the main strategies; adopting specific management policies; implementing testing schemes with culling and/or managing test-positive animals; vaccination; and in extreme cases depopulating the herd. The most successful plan will be the one that best matches the farm objectives, and makes the best use of resources, capabilities and commitment of the veterinarian and client.

The NJWG has developed a workbook for veterinarians to use when developing a Johne's control program. To obtain a copy of the Johne's Disease . Manual for Veterinarians, contact Dr . Hansen at 541.737.6533 or Donald.Hansen@orst.edu or contact AntelBio at 800.631.3510 or northstarcoop@mindspring.com.

The NJWG has designed a scientifically sound herd control program to help veterinarians and producers develop effective programs. The plan submitted by the NJWG serves as a model program for individual State Johne s control programs. Many states have developed their own certification program.

Under the NJWG model, herds enter the program by two methods: Standard and Fast Track. The level obtained by individual herds indicates the likelihood that the herd is free from Johne's disease.

The Standard Track is designed to allow entry into the program with a minimal investment and gradually increases the producer's investment in the program. The standard track will require at least three years and four tests to reach Level 4. Maintenance of Level 4 status gives the producer a high level of certainty that their herd is free of infection.

Level 1 — program entry requirements met, negative ELISA on 30 second or higher lactation animals. A sample size of 30 was selected to optimize herd sensitivity and herd specificity and maintain a fixed cost for all herds entering the program.

Level 2 — met requirements for Level 1 and negative ELISA on a statistical subset of second or higher lactation animals. The Level 2 testing must be completed within 10-14 months of any Level 1 testing.

Level 3 — met requirements for Level 2 and have negative fecal culture results on a statistical subset of second or higher lactation herd members. Bulls two years of age and older must be included in this testing. The fecal culture must be collected within 10-14 months of Level 2 testing.

Level 4 — met requirements for Level 3 and have a negative ELISA on a statistical subset of second or higher lactation animals. Level 4 testing must be completed within 10-14 months of any Level 3 testing. Level 4 status is maintained by achieving negative ELISA results on 30 second or higher lactation animals every 10-14 months.



## Reporting Johne's Disease

The Fast Track allows producers to proceed to a higher level of confidence more quickly than the Standard Track, and requires greater financial investment at program entry. The Fast Track will allow herds to reach Level 4 in two years with three tests, therefore, participants in the Fast Track begin at Level 2.

Level 2 — program entry requirements for Fast Track met, negative ELISA statistical subset test of second or higher lactation animals.

Level 3 — met requirements for Level 2 Fast Track and have negative fecal culture results on 30 second or higher lactation animals. Level 3 testing must be completed within 10-14 months of any Level 2 testing.

Level 4 — met requirements for Fast Track Level 3 and have negative ELISA results on a statistical subset test of second or higher lactation animals. Level 4 testing must be completed within 10-14 months of any Level 3 testing. Level 4 status is maintained by achieving negative ELISA results on 30 second or higher lactation animals every 10-14 months.

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, discourages producers from beginning a management control program.

However, it is important for producers and veterinarians 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 as a necessary protection for the dairy industry. Producers taking the initiative to test and manage for Johne's are using smart management practices to protect their herd and the industry.

Producers marketing their 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

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National Johne's Working Group: [www.usaha.org/njwg/jdplan.html](http://www.usaha.org/njwg/jdplan.html)

Rossiter, C.A.; Hutchinson, L.J., et al; Johne's Disease: A Plan for Pathogen Reduction; Manual for Veterinarians. First Edition.