

JOHNE'S Factsheet

HEALTHY COWS, QUALITY MILK

Using Results from the DHI Milk ELISA Test for Johne's Disease

A cow infected with Johne's Disease (JD) will produce antibodies to fight off the infection. The DHI milk Enzyme-Linked ImmunoSorbent Assay (ELISA) test for Johne's Disease detects the antibody in a sample of milk. Testing for Johne's disease using the DHI milk sample is an efficient, cost effective method for herd screening that provides results quickly.

About the test

Like all Johne's Disease tests the milk test does not accurately identify the infection status of every cow. On average, about 40% to 60% of infected cows will be found positive by this test. This is similar to test results done using blood serum. While this may seem low, the good news is that the more serious the disease becomes, the more likely the milk test is to be positive. About 80% of cows that are shedding lots of JD bacteria in the manure (possibly causing JD to spread to herd mates) will be called positive by the milk test. About 50% of cows shedding moderate amounts of JD bacteria will be positive on the milk test. This means the milk test is likely to identify infected cows that are a problem for disease spread.

The test tries to be sure the antibody it finds is truly the one made to fight JD. Most of the time (95%) it is correct. Unfortunately, the test will occasionally be positive in cows that are apparently uninfected. This means a few of the positive test results will be false positives.

Once JD infection is found in a herd, actions MUST be taken to prevent the calves from becoming infected. To be effective JD prevention must primarily focus on protecting young calves and heifers from infection after birth.

What to do with JD test results

Contact your veterinarian to assist in the interpretation of your Johne's test results. Even if all cows test negative it is still possible for there to be some truly infected cows in the herd. Testing more than once is advisable as:

- Not all cows may have been tested;
- A few infected cows may have low antibody levels that were not detected by the test;
- Some infected cows may be too early in the stage of infection for antibodies to have been present at test time;

- Some infected cows may have been dry or heifers not yet calved when milk samples for testing were collected, or
- Infected cows may have been purchased since the test was done.

If very few cows have tested positive on the milk test, then the risk of JD infection spreading may be low. Culling positive cows based on the milk test result alone will not eliminate a herd's JD problem. Discuss potential changes to calf rearing with your herd veterinarian.

If multiple cows have tested positive on the JD milk test, and this is the first time you have used this test, you may want to confirm these results for this herd by submitting manure from some of these cows for fecal culture at a veterinary diagnostic laboratory.

If the fecal cultures of some of these cows are positive for JD it is highly likely that the disease is present in this herd. When multiple infected cows are identified then the risk of baby calves becoming infected is high. If the infected cow(s) was home-raised, you need to change calf raising so that your calves will:

- Be separate from mature cows and older heifers;
- Have no contact with manure from cows or equipment used to handle cow manure;
- Eat feed and drink water that is never contaminated by manure or manure run-off;
- Be fed only milk from known JD-negative cows and heifers OR are fed milk replacer and
- Be fed 4 litres of colostrum at less than 6 hours of age, from JD-negative cows or heifers.

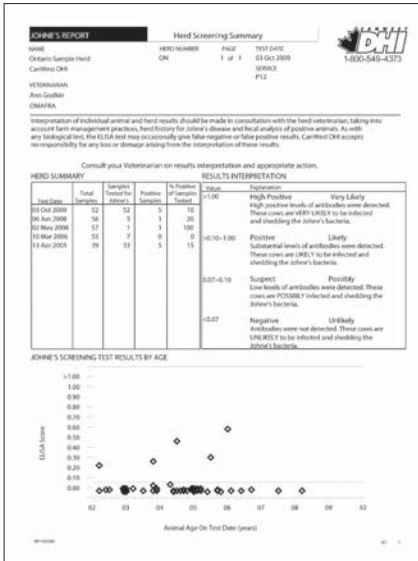
Follow-up or future testing

Lastly, make a plan for follow-up herd testing. Testing programs depend on the herd's status, the speed with which the herd owner wants to control the disease, cost, management strategies and many other herd specific factors. Your veterinarian can help you to design an appropriate testing program.

Understanding your DHI Johne's Reports

Herd owners and their veterinarian receive two reports each time animals from the herd are tested using DHI's milk ELISA test for Johne's:

The **Herd Screening Summary** provides a summary of the results of the tested samples. The **Cow Screening** report provides detailed results for each cow tested. Each report will be sent to the herd owner and the herd veterinarian (the name and contact information for the herd veterinarian must be provided to DHI before testing is done) by fax, internet, or mail. Herd owners should discuss the results of the DHI Johne's screening test with their veterinarian. Further action could involve further testing through DHI and/or testing animals using the fecal test for Johne's.



Herd Screening Summary

This report has three areas of information:

1. Herd Summary

This table provides a report of the overall results of the samples tested including:

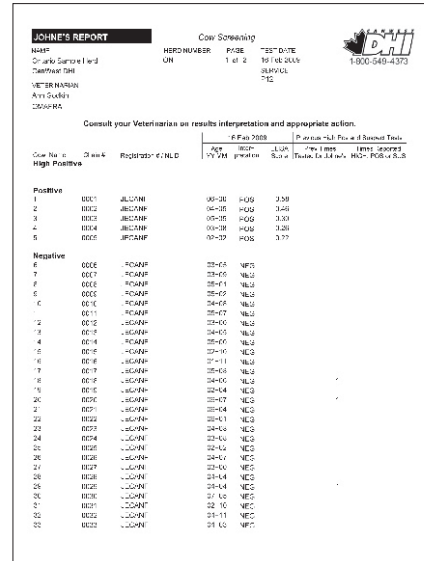
- Number of DHI samples in the herd
- Number of samples tested for JD this test
- Number of positive samples this test
- Percent of Johne's positive tests this test

2. Results Interpretation

This chart provides information on how to read the individual herd results on the Cow Screening Summary. Milk ELISA scores range from 0 to 3.00. Any cow scoring greater than 1.00 is indicated in the >1.00 area. A Johne's positive result is interpreted for any sample with an ELISA score of more than 0.10.

3. Johne's Screening Test Results by Age

This graph provides a quick overview of the herds test results for Johne's as well as showing the impact of management changes designed to stop the spread of Johne's in a herd. Older cows are more likely to test positive for Johne's due to the slow growing nature of the bacteria that causes the disease. The implementation of effective Johne's management strategies should show a decrease in the ELISA scores of animals born after the implementation.



Cow Screening

This report provides detailed information on the test results from each sample tested. The table has three main sections:

- Animal identification (by chain, name, NLID#)
- Information from the current test (age of cow, test results and interpretation)
- Results from previous DHI Johne's screening tests

Tested cows are ranked on the report by their ELISA score. Animals with the highest ELISA scores are listed at the top; animals with lower scores are listed at the bottom.

Headings identify which animals have scores that put them in the High Positive, Positive, Suspect or Negative range based on their ELISA score and the Results Interpretation chart on the Herd Screening Summary.

The management of cows that receive a High Positive (>=1.00) and Positive (>0.10) score should be discussed with the herd veterinarian before any action is taken. The herd's history with Johne's Disease, the age of the cow(s), and whether she was born on the farm or purchased should all be considered.