

What Do the Test Results Mean?





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The current tests for Johne's disease are not perfect, but if used appropriately, they can provide valuable information for understanding the disease in a herd and guiding management decisions. When interpreting test results, it is important to understand what positive and negative results can really mean.

Four Categories of Results

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| <p>A. True negative -
Test negative and not infected.</p> <p>B. False negative -
Test negative but infected.</p> | <p>C. True positive -
Test positive and infected.</p> <p>D. False positive -
Test positive but not infected.</p> |
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Imagine a farmer who tests 100 cows with an ELISA (enzyme-linked immunosorbent assay) that has a **sensitivity** of 40 percent and a **specificity** of 99 percent. If the actual prevalence of Johne's disease in the herd is 20 percent, the results might look like the following:

		TRUE ANIMAL STATUS	
		+	-
TEST RESULT	+	 8 C	 1 D
	-	 12 B	 79 A

More information on test interpretation can be found at:
www.uvm.edu/extension/johnes-disease

Key Points for Interpreting Test Results

- Animals less than 24–36 months of age are more likely to have false negative test results than older animals, so they are not usually sampled when screening a herd.
- Available tests do not have 100 percent sensitivity; that is, they do not detect all infected cattle.
- As more information is gained about the prevalence of Johne's disease in a herd, test interpretation improves.

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Johne's Disease Facts

Sensitivity

The proportion of infected animals a test correctly identifies as positive. Higher values of sensitivity mean a test will have fewer false negative results.

Specificity

The proportion of non-infected animals correctly identified as negative. Higher values of specificity mean a test will have fewer false positive results.

Herd prevalence determines the predictive values of tests. The higher the prevalence of disease in a herd, the more likely a positive test result will accurately reflect the true disease status of an animal.

Work with your veterinarian to help interpret Johne's disease test results.

No test is perfect. There may be false positive or false negative results based on the sensitivity and specificity of the test.



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