

# JOHNE'S DISEASE (MAP) EFFICIENT DAIRY HERD MONITORING

(SERUM AND MILK TESTING)



## Key Notes:

- Convenient**  
Testing can be done on serum/plasma and fresh, frozen or preserved routine DHI milk samples.
- Accuracy**  
Detects Johne's disease in milk with a sensitivity of 52% and specificity of 98%. Detects Johne's disease in serum with a sensitivity of 68% and specificity of 99%.  
**Test negative cows are Johne's disease free.**
- Cost-effective and Easier**  
Johne's disease ELISAs represents an efficient and cost-effective method to evaluate and monitor Johne's disease status in dairy herds.
- Flexible**  
Schedule testing when it is right for you. Samples can be sent for testing to UBRL at any time during our operation hours; Monday-Friday 8.30am-5.00pm PST.
- Fast Results**  
Results can be available by phone, fax or email within 24 hours of sample arriving to the UBRL testing center.
- Multiple Testing Options**
- Additional diagnostic testing, such as BVD, BLV and Pregnancy, is available using the same serum or milk sample.

## Introduction

**Johne's Disease ELISA Test<sup>1</sup>** is a highly specific and effective method for producers and veterinarians to detect and control Johne's disease in their cattle operations. This assay can be performed using serum, fresh, frozen or preserved milk samples.

Johne's disease is an infectious bacterial disease of livestock that mainly affects the intestinal tract. The cost of Johne's disease for dairy producers can be up to \$250 per infected cow per year<sup>2</sup>. NAHMS\*\* study shows that 68.1% of U.S. dairy operations are infected with Johne's disease causing decreased milk production, diminished fertility and a shortened production life. Also, 25% U.S. dairy operations may have a relatively high percentage of Johne's infected cows in their herds<sup>3</sup>.

For U.S. beef herds it is estimated that 8 out of 100 U.S. herds are infected with Johne's disease<sup>3</sup>.

## Sample Kits

For sample collection kit options, submission forms and sending samples directly to the laboratory please contact:

Universal Biomedical Research Laboratory (UBRL)  
Phone: (559) 498-0820

Email: [ubrl@universalbiopharma.org](mailto:ubrl@universalbiopharma.org)

## Test Description

UBRL Johne's Disease ELISA Test is a quantitative IDEXX USDA approved ELISA (enzyme linked immunoassay) designed to detect the presence of antibody to *Mycobacterium paratuberculosis* in bovine serum and milk.

## Johne's ELISA Test Sensitivity and Specificity

**Sensitivity** is defined as the capability of a test to accurately diagnose diseased animals as test positive.  
**Specificity** is defined as the capability of a test to accurately diagnose non-diseased animals as negative.

Milk			Serum		
Known Status**			Known Status**		
	Positive	Negative		Positive	Negative
Positive	64	9	Positive	84	8
Negative	60	550	Negative	39	693
Totals	124	559	Totals	123	701
Sensitivity=52% Specificity=98%			Sensitivity=68% Specificity=99%		

\* Sample status was determined by fecal culture method or samples were from herds with known positive status.  
† For Positive samples, suspect results were treated as negative (not detected); for negative samples, suspect results were treated as positive (detected).

## Result Interpretation

Milk		Serum	
ELISA Reading	Interpretation	ELISA Reading	Interpretation
≤0.30	NEGATIVE	≤0.60	NEGATIVE
0.30<OD<0.40	SUSPECT	0.60<OD<0.70	SUSPECT
≥0.40	POSITIVE	≥0.70	POSITIVE

**Milk:** The result is reported as NEGATIVE if the OD is ≤0.30 and POSITIVE if OD is ≥0.40. Sample values between 0.3 and 0.40 are reported as SUSPECT.

**Serum:** The result is reported as NEGATIVE if the OD is ≤0.60 and POSITIVE if OD is ≥0.70. Sample values between 0.60 and 0.70 are reported as SUSPECT.

A second sample will be necessary to confirm the sample status for 'SUSPECT'.

## MAP Serum & Milk Assay validation Summary (UBRL)

Comparison Method (ANTEL BIO/ Proficiency Samples)

New Method (UBRL)	Milk			Serum			
	Positive	Negative	Total	Positive	Negative	Total	
	Positive	10	0	10	Positive	10	0
Negative	0	12	12	Negative	0	12	12
Total	10	12	22	Total	10	12	22

  

Number of Observations	22
Negative Agreement	100.00%
Positive Agreement	100.00%
Total Agreement	100.00%

  

Number of Observations	22
Negative Agreement	100.00%
Positive Agreement	100.00%
Total Agreement	100.00%

## Key to Successful Testing

- Accurate identification of cows and samples is critical.
- Milk samples should be taken carefully. Residual milk in meters, hoses or pipes may result in unacceptable carry-over from one sample to another.
- Johne's ELISA Test is effective on fresh, frozen or DHIA preserved samples.
- Johne's Milk ELISA Test is not effective on colostrum.

<sup>1</sup> Johne's ELISA is performed with the IDEXX MAP Ab Test

<sup>2</sup> Wells S. What is the value of Johne's testing? Hoard's Dairyman. April 10, 2003.

<sup>3</sup> Johne's Information Central. -A Part of the National Johne's Education Initiative. Accessed August 13, 2014. < <http://www.johnesdisease.org/> >

\*\*NAHMS: National Animal Health Monitoring Systems