

Wisconsin Veterinary Diagnostic Laboratory University of Wisconsin-Madison

Johne's Disease Interpretation Chart

Valuable diagnostic information can be gained from quantitative interpretation of the Johne's ELISA. In general, the ELISA value is a measure of the concentration of serum antibodies to *Mycobacterium paratuberculosis*. Generally, serum antibody levels increase as the infection progresses. Animals with higher ELISA values are more likely to be shedding the bacterium in milk and colostrum and be heavy fecal shedders than lower scored animals. High ELISA scored animals are also at increased risk of developing clinical Johne's disease. The following numerical scoring system is designed to aid in the clinical management of Johne's disease in tested herds using the PARACHEK™ ELISA assay. Interpretation of individual animal results should be done by the herd veterinarian in conjunction with a thorough consideration of on-farm management practices, herd history for Johne's disease and concurrent testing information gathered from several animals in the herd.

Interpretation	Explanation & Recommendation
0.0 - .49 Negative	Antibodies to <i>M. paratuberculosis</i> were not detected. In <i>M. paratuberculosis</i> infected herds, a number of animals may be fecal culture positive but ELISA negative. A negative fecal culture test in 6-12 months will increase confidence the animal is free of infection.
.50 - .99 Inconclusive	Cattle with ELISA results in this range are more likely to be <i>M. paratuberculosis</i> -infected than the ELISA negative animals. Retesting these animals in 30-60 days is recommended. Animals that remain inconclusive on retest should have a fecal sample submitted to a diagnostic laboratory for a fecal culture test.
≥ 1.00 Positive	A few clinically normal animals with high ELISA values (≥ 5.0) will be fecal culture negative and may not be infected with <i>M. paratuberculosis</i> . Animals with ELISA values of ≥ 5.0 have a higher probability of developing clinical Johne's disease within the next 12 months than lower scored animals.

Note: Occasionally clinically ill cattle with advanced Johne's disease confirmed by a positive fecal culture test are negative when tested with the ELISA assay. The reason for this is unknown. ELISA results should not replace sound clinical judgment based in part on herd history, experience, herd testing information and use of ancillary diagnostic tests such as fecal culture.

ELISA values are calculated using the formula: (O.D. test sample – mean O.D. of the negative control) X 10.

O.D. = Optical density units.

Serum samples with ELISA values of 0.50 – 3.50 are verified by repeat analysis.

PARACHEK™: Biocor Animal Health Inc. Omaha, NE.

- Collins MT and DC Sockett. Accuracy and economics of the USDA-licensed enzyme-linked immunosorbent assay for bovine paratuberculosis. *J Am Vet Med Assoc* 1993; 203: 1456-1463.