



**Wisconsin Veterinary
Diagnostic Laboratory**
UNIVERSITY OF WISCONSIN-MADISON

Leptospirosis Titers For Large Animals Interpretation Guidelines

The Microscopic Agglutination Test (MAT) is the standard serological test used in the United States for diagnosis of Leptospirosis. The following six serovars are used in the assay: *L. bratislava*, *L. canicola*, *L. grippityphosa*, *L. hardjo-bovis*, *L. icterohaemorrhagiae* and *L. pomona*. Generally, the serovar with the highest titer is the infecting serovar but cross-reactions do occur albeit at a lower level. Titers should be interpreted in the context of clinical findings, laboratory data and Leptospirosis vaccination history.

For all species of animals, when chronic Leptospirosis is suspected (abortion, anterior uveitis, hepatitis and nephritis etc.) it is not necessary to collect a convalescent serum sample. Horses that abort due to Leptospirosis exposure tend to have very high MAT titers. In equine abortion cases, a MAT titer of 1:6400 or higher is considered positive.

MAT Titer	Interpretation
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$\leq 1:100$	Negative
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$\leq 1:400$	Suspicious
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$\geq 1:800$	Positive
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The MAT cannot distinguish between antibodies produced by vaccination and those produced from exposure to the bacterium. Vaccine titers are seldom higher than 1:400 to 1:800 and often decline to 1:200 or less within 90 days after vaccination. Typically, vaccinated animals have titer elevation for only the serovars found in the vaccine. Animals suffering from acute or chronic Leptospirosis usually have 1 serovar that is at least 4-fold higher than all the other serovars tested. In cattle, a 1:200 MAT titer for *L. hardjo-bovis* may be diagnostically significant particularly if all the other serovars are negative at the 1:100 dilution.