Diagnostic Center News

Winter 2008

University of Nebraska Veterinary Diagnostic Center

Co-Editors: Dr. D. Scott McVey & Mavis Seelmeyer

In This Issue:

Veterinary Diagnostic Center

Announcement From Our Department Head

It is with a great deal of enthusiasm that I announce Dr. Scott McVey as the new Director of the Veterinary Diagnostic Center, University of Nebraska – Lincoln. Dr. McVey brings a rich background of experiences to the position. Dr. McVey received his DVM degree from the University of Tennessee in 1980. He was the owner/operator of McVey Veterinary Services, Athens TN from 1980 to 1983. In 1983 he decided to continue his education and entered a Ph.D. program in microbiology at Texas A&M University. Upon completion of his Ph.D., he joined the faculty at the College of Veterinary Medicine, Kansas State University were he advanced to the rank of Associate Professor with tenure. In 1995, Dr. McVey joined the production group at Rhone Merieux and in 1998 moved to a position at Pfizer Animal Health where he advanced to Director of Analytical Development and Laboratory Sciences. In 2006, Dr. McVey joined the Department of Veterinary & Biomedical Sciences as the section head for bacteriology in the VDC. Dr. McVey is committed to quality service and will be a great asset as we strive to enhance the services that we can bring to the veterinary community.

David Hardin, DVM
Department Head

Did You Know??

Donkey Plus Horse Equals?

When a female horse and a male donkey mate, the offspring is called a mule, but when a male horse and a female donkey mate, the offspring is called a hinny. When a male zebra and a female donkey mate the offspring is called a 'zedonk' or 'zebrass'. All of these resulting offspring are sterile (can't have babies).

Notes From The Director

It is a pleasure to address our clients as Director of the Nebraska Veterinary Diagnostic Center. In my time at the VDC, I have come to appreciate the talents and dedication of the staff directed towards providing excellent diagnostic services. In this role, we see ourselves as an extension of the many veterinarians of the State of Nebraska. Our corporate goal is to enhance animal and public health and to support animal agriculture in the State of Nebraska and beyond. In order to do this, we need to continue strong partnerships and to build new relationships. We ask for your patronage and your support. I invite your comments, suggestions and questions at anytime (402-472-8469 / dmcvey2@unl.edu). We share a common goal - to sustain veterinary medicine for the future of Nebraska. All of our achievements towards this goal will be based on the cornerstone of consistent, high-quality service. All of the faculty and staff of the Nebraska Veterinary Diagnostic Center will work hard to achieve this goal.

Scott

Scott McVey, DVM, PhD, DACVM
Director, Veterinary Diagnostic Center

Trich PCR Testing

The "gold standard" for the detection of *Tritrichomonas foetus* is and has been culture followed by microscopic examination, most typically performed on three consecutive specimens (generally preputial washes). The enhanced sensitivity of performing successive cultures results in a relative sensitivity of greater than 99%. The specificity of this method is also enhanced though the use of PCR methods to confirm the presence of *T. foetus* and differentiate *T. foetus* from morphologically similar trichimonads. Further, the same PCR assay has been used directly on clinical specimens or all in cultured clinical specimens with equal or improved sensitivity to culture and microscopic detection. Recent improvements in DNA extraction methods have increased the relative sensitivity of PCR methods for detection of *T. foetus*. These improvements have made it possible to use abbreviated culture methods followed by the PCR testing of the culture. For this method, clinical specimens are inoculated into the commercial trich pouches and submitted to the laboratory as for standard culture. After an abbreviated incubation period (24 to 36 hours), the culture is tested by PCR to detect the presence of *T. foetus*. This test is in clinical specimens. When the new test is available specimens should still be submitted in the commercial Trich pouches. This new approach using novel methods of DNA extraction and the 5' *Taq* polymerase assay has been demonstrated to be 500 times more sensitive than culture with microscopic detection and/or conventional PCR testing. The major disadvantage of using PCR testing is cost. Each culture test costs seven dollars while the PCR test will cost between 25 and 30 dollars. A new real-time PCR test should be available by March 2008.

There are other advantages and disadvantages to the PCR testing strategies. Generally PCR assays are designed to provide maximum sensitivity. In theory, a real time PCR assay can detect one copy of the target DNA in the clinical specimen. At this level of sensitivity is possible to have rare positive tests that are the result of false annealing events in the chemical reaction. Therefore, although the relative sensitivity of the real-time PCR is very much enhanced, there is a possibility of a false positive reaction. In addition, false negatives have been reported. Unfortunately there are no perfect tests, but the frequency of false positives is actually quite low. Although the increase in sensitivity with real-time PCR allows us to test bulls with just one specimen collection (instead of three), there is a very small chance of a false positive test result. This will require repeating the test on occasion and in some cases follow-up examinations with selective culture. Within the next several weeks we will be able to report on the relative sensitivity and specificity of the real-time PCR. The availability of these data will subsequently allow us to calculate the predictive power of positive and negative tests.

-- - submitted by Dr. Scott McVey, Bacteriology Faculty Supervisor

Virology Updates

New Testing:

We now offer a realtime PCR for IBR. Turn-around time will be 24 hours.

European PRRS

In January we detected an animal from Washington county which was positive for European PRRS by PCR. The realtime PCR which we currently use will detect both European and North American PRRS in one PCR.

Serology Turn-Around Times:

For those of you who send in serums for SN (serum neutralization) testing for BVD 1 & 2, IBR, BRSV and PI-3, just a reminder that this is a 5 day test which is set up on Mondays and Fridays. If it seems as if it is taking forever to get your results, it is not that we are ignoring you! If you have an urgent need for results by a certain date, please indicate this on the paperwork and we will do everything we can to accommodate your needs.

Rotavirus and Coronavirus fecal testing:

For cattle: we need a minimum of 5 g of feces

For pigs: we need a minimum of 20 g of feces

These amounts will also provide enough for bacteriological testing as well.

Please give us feedback:

What can we do differently that would be helpful to you?

What new testing would you like to see?

Any other suggestions?

Call: 402-472-9416 or email vdc2@unl.edu and let us know!

Employee Retiring

Donna Henning

After 19 years of service to the University of Nebraska Veterinary Diagnostic Center, Donna Henning will be retiring on March 3, 2008. Donna has been a very valuable employee and she will certainly be hard to replace.

Donna previously served as the receptionist for the Diagnostic Center and was working as a clerical assistant in the Front Office. Many of you have probably talked on the telephone with Donna from time to time.

Donna and her husband Jerry live on a farm near Crete, Nebraska. Donna's hobbies and interests include following her 8 grandchildren with their activities, doing some traveling and playing bridge.

We would like to thank Donna for all of her years of dedicated service and wish her all of the best in her retirement!

University of Nebraska Veterinary Diagnostic

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The Nebraska Veterinary Diagnostic Center is accredited by the American Association of Veterinary Laboratory Diagnosticians

All regulatory testing for export is done in compliance with the code of federal regulations and technicians performing the test have been tested annually by the USDA through the National Veterinary Services Laboratories check-testing program. Additional assays within the lab regarding toxicology, microbiology and parasitology are assessed annually by check testing through the Veterinary Laboratory Association. Positive and negative control samples are included in all serologic and toxicologic testing protocols that require them.

Ancillary testing is reviewed by a single case coordinator who assures that test results are in agreement and any unusual test results are investigated to ensure that standard operating procedures are followed and that results can be replicated. Standard operating procedures are on file in each of the laboratories and available for inspection. A copy of our Quality Manual is available upon request.

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