University of Nebraska Lincoln

Diagnostic Center News

University of Nebraska Veterinary Diagnostic Center

Volume 1, Issue 1 August 2004

Co-Editors: Dr. David Steffen and Mavis Seelmeyer

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Quality Corner

The VDC is always improving the way we do business. We have recently begun implementing new standards for quality so that we can better serve the needs of our clients. By complying with international standards for testing we can deliver more reproducible results which are accepted by government regulated agencies and many trading nations. For more information, stay tuned to future QUALITY CORNER articles. If you have questions or comments on how we can improve our service, contact the VDC Quality Assurance Regulatory Compliance Manager, Marci Pedersen, at 402-472-4650 or mpedersen2@unl.edu

Diagnostic Center to Undergo Renovation of the HVAC

Beginning the first week of September, the Diagnostic Center will be undergoing replacement of the heating ventilation and cooling system (HVAC). This renovation will allow the Diagnostic Center to increase the number of exhaust hoods and maintain operational temperatures throughout the year for diagnostic testing. The current system was effective when the Diagnostic Center was built, but it no longer is keeping up with the challenges presented. We currently rely on numerous space heaters in winter and strategically placed dehumidifiers in summer to keep the laboratory operational and keep work areas within parameters needed for the test being performed. During the renovation, the virology section will be fully operational at the technology park location near 1st and Superior. The bacteriology laboratory will be located off 14th and highway 2 in space leased from the Department of Agriculture. The toxicology lab and some IHC testing will be moved to Animal Science. The front office staff and pathologists will be located in the Veterinary Basic Sciences building. Histology and necropsy areas will remain operational as they are on there own HVAC system.

The renovation is scheduled to be completed within 6 months. Our address and phone numbers are expected to remain the same and deliveries to the laboratory will be to the east necropsy dock. Signs will be posted to direct visitors to the front office staff at the temporary location in the VBMS building. We anticipate a few days during the move where we might be a bit disorganized. We are hopeful that you will notice very little change in service during this period.—by Dr. David Steffen

Fescue Grass and Fungal Infections

—by Michael P. Carlson, PhD, Diagnostic Toxicologist/Analytical Chemist

In early July we received two cases involving fescue grass. What is conventionally assumed to be fescue toxicosis may be ergot toxicosis. The risk of toxicosis is usually greater from consumption of ergot-infected plants than from endophyte-infected fescue, because the concentrations of ergot alkaloids in ergot sclerotia are much greater than they are in endophyte-infected fescue.

The cool, wet weather that we have experienced in the eastern part of Nebraska during late June and early July favors *Claviceps* infection of grasses and cereal grains. Ergot toxicosis should be included in the differential diagnosis for animals consuming such plants who exhibit signs of lameness, reduced milk production, or heat intolerance.

(cont'd. on page 2)

Ergot-contaminated fescue grass:

A client from Otoe County, concerned about the possibility of fescue toxicosis brought in a specimen of fescue grass collected from a 30 year old pasture, originally seeded with a mixture of grasses. The fescue now dominates the pasture. Milk production in his dairy herd was down. Several seed heads contaminated with sclerotia were identified in the specimen. Figure 1 illustrates the infection. Sclerotia are the fruiting bodies and fungi germinate from them under favorable conditions, infecting other plants.

Figure 1. Three seed heads from fescue collected in Otoe County, Nebraska, in early July 2004. Sclerotia, the elongated, dark bodies in the seed head and are most likely *Claviceps* sp. A sclerotium separated from its seed head lies between the middle and bottom seed heads.

The sclerotia found in the fescue are not produced by the enophyte that naturally affects fescue. Plant pathologists at the UNL Plant and Pest Clinic, identified the sclerotia from the submitted fescue as *Claviceps*.

Additional information about fescue grasses may be found at the Oregon Forage Enterprise Tall Fescue Information System website at http://forages.oregonstate.edu/is/tfis/enmain.cfm?PageID=124. You may also refer to NebGuide G03-1513-A *Understanding Fungal (Mold) Toxins (Mycotoxins)*, June 2003.

Tips For Collecting Specimens For Bacterial Culture Specimens

When collecting a specimen for bacterial culture, it is very important to collect the specimen as aseptically as possible, otherwise the relevant pathogen may be overgrown by numerous contaminating bacteria. Please use the following guidelines when collecting specimens for bacterial culture.

- Collect specimens from live or recently dead animals so that the normal flora will not have an opportunity to overgrow the pathogens.
- Use sterile containers or swabs when collecting a specimen to avoid introducing contamination from the collection supplies.
- Use sterile scalpels or knives to avoid introducing contamination.
- Use leak proof containers to avoid contamination or loss of sample during transport.
- Try to avoid gross contamination such as soil and manure. It is difficult if not impossible to isolate pathogenic bacteria once overgrown with contamination.
- Transport specimens as soon as possible, but if it is to be delayed store samples at 4 degree C. If mailing a specimen include and ice pack to keep it cold. Cold temperatures slow the growth of bacterial contamination.
- Do not freeze. Freezing can kill some pathogenic bacteria.

- - contributed by Deb Royal, Bacteriology Supervisor

News From Virology

Rapid testing is now available for EIA (Coggins). Samples delivered to the Diagnostic Center by 1 p.m. will be tested and reported the same day.

WNV serology is currently run twice weekly due to the small number of samples being received. If you have an urgent need for more rapid results, please contact the laboratory before you ship the sample. We try to accommodate all urgent requests as best possible.

ELISA testing is available for West Nile virus antibody on equine, canine, ovine, caprine and avian serum. IgM and IgG antibodies can be detected. Serology for other species is sent to Cornell University for serum neutralization testing. SN testing for this agent requires BL-3 lab facilities which are unavailable at the Nebraska Veterinary Diagnostic Center.

- - contributed by Judi Galeota, Virology Supervisor

New Employees

Jamie Henningson recently began working in the Diagnostic Center as a Pathology Resident. Jamie is studying under the direction of Dr. David Steffen. Jamie is originally from Topeka, Kansas. She has a BS in Agriculture and recently received her DVM degree from Kansas State University. Jamie's hobbies include training horses and running. Jamie is currently training for a marathon!

Jamie Henningson

Deb Royal

Deb Royal is the new Laboratory Manager for the Bacteriology laboratory at the Diagnostic Center. Deb is originally from Nebraska City, but has been living in the Lincoln area for approximately 20 years. Deb has an AS degree from Southeast Community College in Medical Laboratory Technology and a BS in Allied Health from Doane College. Deb has also furthered her education by attend several other classes and has ten years of experience as a clinical microbiologist. Deb is married and the mother of two children, ages 16 and 14. Deb's hobbies include gardening and participating in her children's activities.

Pack It Right!!

Formalin and blood leakage - - this scares package carriers beyond words. When sending us tissues, please go overboard on the bags , padding and insulation. It is the law! Diagnostic specimens containing liquid must be packed in a leak proof primary vessel, surrounded by enough absorbent material to absorb complete leakage. The primary package and the absorbent material must be surrounded by a second leak proof layer. Whirl-Pac bags make a great primary vessel, as do screw cap jars and vacutainers if sufficient vacuum remains in the tubes. Remember Whirl-pacs work BUT you have to whirl them. Please don't just fold them over once or twice. If you have more than one primary container you can place them all into a single large secondary vessel.

If you are sending us specimens from more than one animal, label each bag with the animal ID number. Tissue specimens should be sent in thick sturdy insulated two-piece foam coolers. Boxes lined with six Styrofoam pieces are inferior. These foam containers are not leak proof so do not qualify as the secondary vessel. Lining them with a sealable plastic liner is a suggestion.

Place ice packs on the bottom and on the top of the specimens in the box. Do not place insulating material between the specimen and the coolant unless you are using dry-ice. Padding material should be packed around the specimens to fill the entire package to prevent jarring and shifting of samples. Newspaper works well, because it is also absorbent. Packing peanuts are a MESS and should be avoided. They stick to everything when gel packs leak or condensation makes them wet.

Try to send fresh tissues overnight if at all possible. If not, or during these summer months, be sure to add extra coolant and use extra thick insulating packaging. Ground delivery routinely takes 2 days and can take 3-4 days. Green tissues are a poor specimen.

When sending tubes of ear notches or serum, make sure all of the tubes are secure in something and well insulated from damage. Pad the samples: tubes tend to shift around and can be broken when not packed properly. Never send glass tubes or slides in padded envelopes. The glass gets crushed.

Make sure all the paperwork is filled out **completely and legibly**. Special requests for testing, return of specimens, cosmetic necropsy etc. should be written larger, in bold or with a marking pen to draw attention to it as the packages are being processed. Paper work is best folded into a zip lock bag to protect it from being leaked on.

The specific legal requirements for shipping diagnostic specimens are available from IATA entitled Infectious Substances and Diagnostic Specimens Shipping Guidelines. If you would like a copy for your clinic it can be purchased for $70 from IATAs' On-Line store at http://www.iataonline.com/store/products. Contact the lab if you have problems accessing the document or if you would like organized training for your staff at a future NVMA meeting.

—contributed by Chris Riggert, Necropsy Technician

University of Nebraska Veterinary Diagnostic

Nebr. Veterinary Diagnostic Center
Univ. of Nebraska
Fair St. & E. Campus Loop
P. O. Box 82646
Lincoln, NE 68501-2646

Phone: 402-472-1434
Fax: 402-472-3094
E-mail: vdc@unl.edu

We're On the Web:
http://vbms.unl.edu/

The Nebraska Veterinary Diagnostic Center is fully 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.

Nebr. Veterinary Diag. Ctr.
Univ. of Nebr.
Fair St. & E. Campus Loop
P. O. Box 82646
Lincoln, NE 68501-2646