



Wisconsin Veterinary Diagnostic Laboratory

UNIVERSITY OF WISCONSIN-MADISON

Newsletter - Spring 2016

Message From the Director

We would like to thank everyone who took the time to respond to our customer service survey. We had 139 respondents, which was 15% higher than our 2015 survey; your thoughts, ideas, and opinions, including critiques, are important to us. We are working through all the comments with an eye toward ways to improve WVDL's service and responsiveness for your practice or business.



In April we welcomed new administrative team members. Our new human resources specialist is Corissa Daines. Corissa comes to the WVDL from the University of Wisconsin Madison Campus central Office of Human Resources. She brings with her important and relevant experience and skills, insight and positive energy which will benefit the WVDL Staff and WVDL in general. Welcome Corissa!

We are also happy to announce the advancement of Dr. Nicole Aulik to the Interim Section Head of Microbiology. Dr. Aulik has already been doing a great job of science management and supervising the

section for the past 1-2 years and we are looking forward to having her insight, skills, and expertise on the administrative team. Congratulations, Dr. Aulik, and we at WVDL and our valued clients look forward to working with you.

We hope you have a great summer. Please contact WVDL including me or our Client Services and Outreach Coordinator Dr. Keith Poulsen, directly, anytime with questions, concerns, and/or comments.

Phil Bochsler, DVM PhD, DACVP
Director

Microbiology

Shipping Isolates for Autogenous Vaccine Development: The bacteriology section would like to ask clients to make requests for isolates to be shipped for autogenous vaccine development as immediately as possible. Please write on the WVDL General Submission Form if you suspect that a pathogen might be isolated that could be used for an autogenous vaccine. Although the WVDL understands that it takes time to determine if an isolate is to be used for autogenous vaccine development, it is imperative that the isolate be as healthy as possible prior to shipment to an autogenous vaccine development laboratory. When isolates are either subcultured or maintained for long periods of time at refrigeration or room temperature, the bacteria alter their gene expression, which could affect vaccine efficacy. Please call (608-262-5432) or email the WVDL if you require an isolate to be shipped for autogenous vaccine development. Isolates are shipped from both the Barron and Madison laboratories.

Avian Mycoplasma Culture: The avian *Mycoplasma* culture has been discontinued and replaced with the Avian *Mycoplasma* RT-PCR, which includes three *Mycoplasma* targets: *M. synoviae*, *M. meleagridis*, and *M. gallisepticum*. These can be ordered as a multiplex PCR or as individual PCR targets. The switch from culture to PCR greatly enhances the turnaround time as culture could take up to four weeks. The PCR is run at the Madison laboratory.



***Prototheca* Isolation Media:** Additionally, the WVDL has been validating a *Prototheca* isolation media, which has recently passed approval. *Prototheca* isolation media will now be automatically added to bulk tank cultures. Internal observations have demonstrated a 10% reduction in sensitivity (to 89.7%) when milk is frozen. If you suspect *Prototheca* will be isolated from a bulk tank sample(s), please save a small aliquot of the bulk tank sample(s) and do not

freeze that sample(s). The rest of the bulk tank sample should be frozen since the bulk tank culture is quantitative. Freezing the sample insures accurate bacterial counts, but since *Prototheca* species are an algae, freezing compromises their cell wall.

To keep costs low, we ask that clients specifically request the *Prototheca* isolation media when needed for mastitis milk culture submissions. *Prototheca* may be requested for milk mastitis culture submissions by checking the box for *Prototheca* on the Milk culture Submission Form. The specific media aids in the sensitivity of *Prototheca* detection although *Prototheca* do grow readily on blood agar. *Prototheca*, isolation can be added to any mastitis milk culture for \$2.75. *Prototheca* isolation is available at both the Barron and Madison laboratories.

***Tritrichomonas foetus* Submissions:** The bacteriology section would like to ask clients who submit genital washings in the InPouch™ for *Tritrichomonas foetus* culture or PCR to please roll down the pouches prior to submission if no direct read is needed. The genital washing needs to be mixed with the contents of the InPouch™ within 24 hours in order to inhibit bacterial growth and promote *Tritrichomonas* growth. However, if direct reads are desired, please keep the genital washing in the top of the InPouch™. A reminder that the culture requires 7 days and the PCR requires a full 24 hours incubation prior to PCR, which are run on Mondays at the Madison laboratory.

Client Services

New Team Member - In May, we will be welcoming a new member to the Client Services Team. Rachel Pressley will be working with sample login, accessioning, and reception. Rachel is moving back to the Midwest from North Carolina, welcome Rachel!



Annual Bull Stud/Bovine Genetics Meeting - We have been busy with outreach and extension, working with the Professional Dairy Producers of Wisconsin, the Dairy Calf and Heifer Conference, and the Dane County Regional Veterinary Medical Association. On

Tuesday, July 25th, 2016 we will host our annual Summer Bull Stud/Bovine Genetics Meeting. The meeting focuses on testing for export and regulatory purposes. Please contact us if you are interested in joining the meeting in July. This meeting is free of charge.

Charges Added for Media and Supplies Orders - Effective June 1st, we will be adding a flat rate shipping and handling charge on all media and supply orders. In Wisconsin and surrounding areas, media and testing kits will be sent UPS ground for next day delivery. For all other destinations, UPS next day air service will be used. All box and liquid nitrogen tank returns will be sent UPS ground. *See below for flat fee pricing schedule.*

Media/Kit Orders

Next Day Air: New Flat Shipping and Handling = \$25.00

Ground: New Flat Shipping and Handling = \$10.00

Returns

Box Returns: New Flat rate = \$6.00

Liquid Nitrogen Tank Returns: New Flat Rate = \$10.00

Electronic Spreadsheet Submissions - We appreciate the adoption by many of our clients of our electronic spreadsheet submissions. On any case with more than 10 animals in the submission we estimate our accessioning process to be 10 times faster compared to handwritten or typed forms. Electronic spreadsheets also eliminate data transfer errors. For perspective on a busy day, the WVDL receives ~2000 specimens, which have ~10,000 data fields to be filled or confirmed for accuracy by the Client Services staff!! Gradual movement of large accessions to electronic spreadsheets allows us to be more accurate and efficient and decreases turnaround time for results. Please contact us with questions about how to use electronic spreadsheet submissions.

Staff Spotlight: Dr. Don Sockett, DVM PhD, DACVIM



Where are you from and how did you become a WVDL team member?

I was born on a dairy farm in Ontario, Canada and attended veterinary school at the University of Guelph. I did an internship and residency program in food animal medicine and surgery at the University of Minnesota and Colorado State University, respectively. I did my PhD at the University of Wisconsin-Madison. I worked in the state veterinarians' office (DATCP) for 4 years as the ruminant species epidemiologist and came to the WVDL in 1995.

How long have you been working at WVDL?

21 years

What parts of your job do you enjoy the most?

Interacting with practicing veterinarians and dairyman plus discussing interesting cases with WVDL staff.

Do you have any hobbies?

Competitive horse riding. My son is a world champion equestrian having won a world championship in 2011 riding his American Saddlebred at Louisville, KY.



Dr. Sockett talking to the Dairy Calf and Heifer Association in April of 2016 about cleaning and sanitation of automated calf feeders.

Pathology Sciences

Pathology Services

Due to an influx of cases with potential legal ramifications to our Diagnostic Pathology service we have a few frequently asked questions (FAQs) that can help save time and money for you and your clients while getting the highest quality diagnostic work.



What types of cases might be considered to be "legal"?

These are examples of situations that might define a "legal" case:

- Cases in which there is potential litigation that may be initiated by the animal owner, legal authority, veterinarian, or other party.
- The necropsy, or other testing, is required for an insurance claim or other settlement.
- The necropsy, or other testing, is required as part of a police investigation.

How are legal cases handled differently?

Legal cases are handled at WVDL with additional documentation, sample retention and communication.

- Documentation includes:
 - Maintaining a chain of custody
 - Taking photographs of case materials and findings +/- radiographs
- Our usual attention to detail and record-keeping. All sample material that is not consumed in the process of testing is retained in long-term secure storage.
- Potential communication with law enforcement, humane officers, attorneys, government officials, etc.

Does WVDL have special credentials for handling legal cases?

Credible expertise is very important under the scrutiny of litigation. Our proof of expert status takes several forms, including our AAVLD* accreditation. To be fully accredited, such as WVDL, a lab must maintain impeccable records, perform regular proficiency testing, and employ credentialed professionals such as board-certified veterinarians (ACVP*, ACVIM*).

**AAVLD = American Association of Veterinary Laboratory Diagnosticians*

**ACVP = American College of Veterinary Pathologists*

**ACVIM = American College of Veterinary Internal Medicine*

Is there a fee for legal cases?

Yes, it is currently \$165. The fee is only applied to cases in which the additional considerations for legal cases were actually applied. Therefore, there is no harm in communicating that there is even the potential legal concern so that samples are not discarded before legal status is decided. In the long run, a legal necropsy handled properly could save thousands of dollars in legal fees and lost time.

When/how should legal concerns be communicated to WVDL?

Inform us on the submission form or by any other means of verbal or written communication. Please notify the WVDL staff at the time of, or prior to, submission. Knowing of legal concerns as soon as possible will ensure that a proper chain of custody is initiated. Also, we want to be sure to retain sample material, making sure that sample(s) are not accidentally discarded as part of normal disposal of non-legal cases.

How does legal status affect disposition of an animal's remains?

Even though cremation may be requested, invoiced and paid, the animal is not released until we have signed approval for release of remains from the submitter. In general, we advise against release as long as litigation is pending.

Other considerations:

- As for all cases, legal necropsies must be submitted by a veterinarian and are not accepted directly from animal owners.
- WVDL retains the right to refuse out-of-state legal cases.

Chemistry & Toxicology Report Changes - There are a few changes to our chemistry and toxicology reports. First, element values for tissues (kidney, liver and brain) will now be reported on a dry weight basis, which is consistent with our peer veterinary diagnostic laboratories. Additionally, the reference ranges reported for tissues and serums analyzed for elements, Vitamins A and E will be updated to those compiled between 2009 and 2014 at the Diagnostic Center of Population and Animal Health (DCPAH) at Michigan State University. Prior to the update, WVDL used the previous ranges from DCPAH, published in the 1980's. As a result of the adoption of the DCPAH reference ranges, the following elements will be reported with the Element Panel for liver and kidney; arsenic, cobalt, copper, iron, lead, manganese, molybdenum, selenium and zinc. Copper, iron, selenium and zinc will be reported in the element panel for serum. Heavy metals and other elements may be requested



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Barron Laboratory



EIA Testing - Equine Infectious Anemia (EIA) submissions are tested daily at the WVDL Barron Laboratory. Submissions received by noon will have same day testing. Samples should contain 1 ml serum, be refrigerated and shipped with a cold pack. WVDL accepts three submission types for EIA testing:

1. Electronic submissions through the **APHIS Veterinary Services Process Streaming (VSPS)** database. VSPS provides free data repository for laboratory test submissions and results. An accredited veterinarian account with VSPS is required. Results are available via the VSPS portal by the end of the testing day.
2. Electronic submissions through **Global Vet Link**. Global Vet Link provides a real-time data repository for laboratory test submissions and results. A veterinary account with Global Vet Link is required. Test results are available by the end of the testing day via the Global Vet Link web site.
3. **Official Federal VS Form 10-11**. Test results are recorded on this form. Veterinarian and owner copies are placed in USPS mail the day after testing.

Please ensure that the animal name/identification on the tube clearly matches the submission form. Samples that cannot be matched to the submission form may result in delayed testing, or require resubmission.

Please visit our website for additional information regarding the EIA submission options.

Liquid Feed Bacteria Counts - The WVDL Barron Laboratory offers testing for Bacteria Counts in Neonatal Mammalian Liquid Feeds (CFU/mL). Remember to package and ship appropriately especially as the weather gets warmer in order to keep samples frozen during transit.

- Acceptable sample type= colostrum, raw/pasteurized waste milk & reconstituted milk replacer
- Collect samples in vials and immediately freeze. A half-filled vial is sufficient sample amount.
- Sample must remain frozen in transit. See WVDL's shipping program.
- Use Milk Submission form, check "aerobic/coliform/E. coli count" test and indicate the sample type.
- Send directly to Barron to avoid delays in test results turnaround time.
- Set up M, T, W if received by noon. Results in 48 hrs.

Please visit our website for Submission and Interpretation Guidelines for this test type.

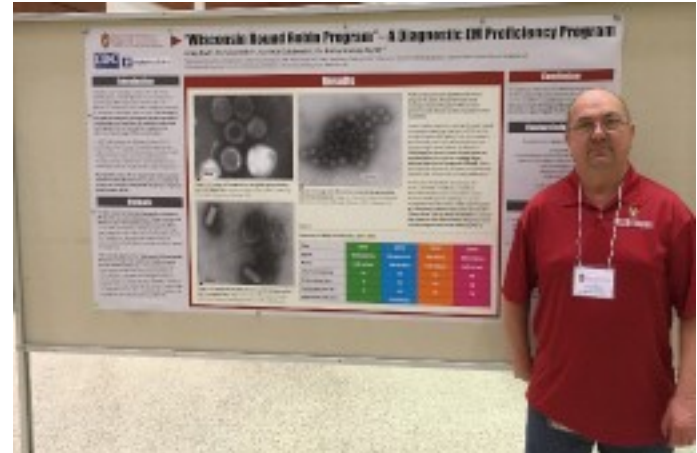
Virology

Canine Influenza Testing & Research - The virology unit has been at the forefront of testing and research for canine influenza since the outbreak started in 2015. We have tested thousands of samples for the University of Wisconsin School of Veterinary Medicine (SVM) shelter medicine program and for veterinarians around the state. Practitioners were alerted to several localized outbreaks in mid-March but

there have been no additional positive cases in Wisconsin identified at our laboratory or the Cornell Diagnostic Laboratory in April. We do not have access to results tested by private laboratories. On the research front, we have collaborated with Dr Sandra Newbury (Director of the SVM Shelter Medicine Program) on two studies. Our first joint publication detailing the extended shedding found in dogs with H3N2 can be found in this month's JAVMA (May 1, 2016, vol 248, No 9 pp 1022-1026). Newer research this spring revealed that CIV H3N2 can infect cats. A shelter in Indiana had the first extended outbreak. It was clinically recognized by Dr Newbury and confirmed by real time PCR and virus isolation at WVDL. Initial sequence data reveals homology to H3N2.

EM Proficiency Program Developed by WVDL

Electron Microscopist Radi - Our electron microscopist, Craig Radi, presented his poster on a proficiency program he developed for Electron Microscopy (EM) at the "Global Health Symposium 2016" March 30th at the Health Sciences Learning Center. The proficiency program partners with 18 laboratories across the United States including Hawaii and Canada, to help maintain expertise in the identification of viruses by EM.



Regulatory Testing - Bovine herpes virus 1 serological tests are commonly required for movement of animals or products. To serve the genetics industry we offer three serological tests, all of which detect the presence of antibodies to BHV-1.

1. **IBRSN** is a serum neutralization assay which is offered for historical reasons but it is not recommended for use to qualify animals for movement because of low sensitivity. The assay will detect neutralizing antibodies. However, the virus incubation step with antibody is only 1 hour which accounts for its lowered sensitivity of 77%.
2. **OIEIBRSN** is the approved serum neutralization assay in the manual produced by the World Organization of Animal Health (OIE). It differs from IBRSN by the length of the neutralization period (24 hrs) which makes it a far more sensitive assay.
3. **IBR CELISA** is a competitive ELISA directed to an epitope on the glycoprotein C on the virus surface. This test is rapid and can be completed in 3 hours unlike the SN tests which must incubate 3-5 days.

Results from the OIE IBR SN and the CELISA usually agree. However it's wise to test with both assays before qualifying an animal for entry to a bull stud. This will provide better assurance of the true status of an animal especially if the antibody level is close to the threshold of detection.

Unfortunately, there are occasional test results that may be nonspecific. If we suspect a nonspecific reaction, we report as "retest required" and follow up with procedures (e.g. heat treatment or a freeze-thaw cycle) to remove the source of the cross reaction. Collecting and testing a new sample sometimes eliminates the non-specific reaction. As a last resort, taking an animal off feed for a day, then re-sampling and testing can help.



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