WVDL Fall Newsletter

FALL 2022

Wisconsin Veterinary Diagnostic Laboratory
UNIVERSITY OF WISCONSIN–MADISON

MESSAGE FROM THE DIRECTOR

Thank you for taking time to read our Fall newsletter. As 2022 draws to a close, we continue to have our hands full with a growing diagnostic testing caseload and continuing to develop new markets with new ideas of how to be more efficient as a highly complex diagnostic laboratory. One of the new areas of investigation that we are branching out to is whole genome and next generation sequencing. Dr. Ailam Lim successfully funded a CDC Public Health Fellowship and we are fortunate to be hosting Joanna Colovas as our first fellow!

The renovation and addition project for our Barron facility is moving along and the State of Wisconsin has awarded Invision (invisionarch.com) as the architect and engineering firm to design the project. We are excited to work with our stakeholders and staff in the Barron laboratory to build a BSL-3

laboratory and create space that will allow for growth for the foreseeable future.

I would also like to draw attention to our December 1, 2022 Bovine Genetics Export Meeting. We have moved this meeting from July to December due to scheduling conflicts and are hoping for another great in-person meeting at WVDL. This is a free meeting and we will offer 5 credits of CE credits. We will talk about best practices for testing submission, new tests, industry challenges for embryo and semen export, hear from DATCP and USDA colleagues, and have a presentation for humane and effective euthanasia by our in-house nationally recognized expert, Dr. Ryan Breuer. See below for a link to RSVP.

I hope you all have a happy holiday season with your families. As always, please contact us with questions or comments.

Keith

IN THIS ISSUE

CLIENT SERVICES

SWAB SAMPLE COLLECTION REQUIREMENTS FOR MOLECULAR TESTING

WVDL has seen an increase in swab submissions using wooden shafted cotton tipped swabs for molecular testing. Although we understand the limits on supply chains right now, wooden shafts can negatively affect the PCR assays. Leaching of chemicals in the wooden shaft into the media can be detrimental to PCR resulting in potential false negative results. Please submit **plastic shaft dacron swabs** for molecular testing. To ensure the integrity of the sample for molecular testing, submerge the swab in a transport media such as brain heart infusion (BHI) broth or PBS immediately after collection. Swabs submitted for molecular testing in bacterial transport media have been shown to potentially inhibit PCR and can result in false negative results as well. Pharyngeal swab kits can be ordered through our website: https://www.wvdl.wisc.edu/forms/. We also have instructions on the collection of deep nasopharyngeal swabs for bovine respiratory disease testing under the diagnostic resources/molecular section found here - https://www.wvdl.wisc.edu/wp-content/uploads/2022/05/Use-of-Deep-Nasopharyngeal-Swabs-for-Bovine-Respiratory-Disease-Testing.pdf .

BACTERIOLOGY

JOHNE'S DISEASE [MYCOBACTERIUM AVIUM SUBSPECIES PARATUBERCULOSIS (MAP)] LIQUID CULTURE UPDATE

The WVDL sources the media needed for Johne's Disease Liquid Culture from ThermoFisher/TREK Diagnostic Systems. Despite our best efforts, there is a continuous backorder for one component of the media needed to culture MAP. This component is proprietary and cannot be easily replaced or validated by the WVDL. The next shipment of this component is expected on November 21, 2022. We will try our best to start cultures on November 21, 2022, but due to the upcoming Thanksgiving Holiday, it may not be possible to start cultures until November 28, 2022. The preparation of the feces for Johne's liquid culture is a 3-day process and if media does not arrive on November 21, 2022, as expected, then we must hold cultures until November 28, 2022. The WVDL apologizes for any inconvenience and hope to have the culture resumed as soon as possible. We are working with ThermoFisher to improve quality control and reduce backorders.

CAMPYLOBACTER FETUS SUBSPECIES VENEREALIS IDENTIFICATION

The WVDL continues to perform *Campylobacter fetus* subspecies *venerealis* (Cfv) culture from genital washing transported in Weybridge Transport Media. This is the WOAH (fmr. OIE)-approved method for Cfv testing. This testing can be challenging as normal flora and environmental contaminants can grow despite the antibacterial and antifungal additives found in Weybridge Transport Media. Therefore, collection technique is essential for creating

accurate and timely culture results. Since 2016, we have been working with clients to reduce overgrowth and none isolated with filtration results, which has been very successful in reducing overgrowth results from a high of 2.92% to a low of 0.44%. Please continue to contact the WVDL if you are observing an increase in overgrowth or none isolated after filtration.

Additionally, the WVDL utilizes MALDI-TOF for the identification of *Campylobacter fetus*, but requires the use of PCR and glycine utilization testing to identify the *Campylobacter fetus* isolate to the subspecies. Please be aware that if a *Campylobacter fetus* has been identified, it will take 1-2 weeks to further subspecies it at the WVDL as the PCR is run and the glycine utilization media is prepared and then the isolate tested. The WVDL will contact any client who has a sample culture of *Campylobacter fetus* isolate to ensure that the client gets timely results.

National Poultry Improvement Plan (NPIP) Testing to be Sent Directly to the Barron Lab Location

Whenever possible, please send NPIP testing directly to the WVDL-Barron Laboratory. NPIP requires that environmental samples be setup for culture within 5 days from collection. It can be difficult to meet that requirement if samples arrive late in the week to the Madison location, which does not setup cultures for NPIP testing. Therefore, whenever possible please send samples directly to the Barron Laboratory for the fastest turnaround time and to meet NPIP requirements. If additional samples are sent to the Barron location that need testing at the Madison location, the Barron staff are happy to route those samples to Madison once the NPIP samples have been removed and testing started. If you have any questions, please call or email the WVDL-Barron Laboratory. Contact information found below.

All Salmonella enterica subspecies enterica serotypes/serogroups identified in 2021 at the WVDL

The WVDL would like to keep our clients aware of the serotypes/serogroups identified at the WVDL in 2021. *Salmonella enterica* subspecies *enterica* contains greater than 2,500 different serotypes, also called serovars. Each serotype is identified at the WVDL using various sera that bind and agglutinate if a particular molecular pattern is present on the surface of the *Salmonella* bacterium in question. These agglutination reactions are run and positive reactions are used to first group (Group A, B, C1, C2, D1, E1, and G) the *Salmonella* isolate and then serotype it to identify a specific serotype name such as *Salmonella* ser. Heidelberg which is in the Group B, although, so is *Salmonella* ser. Typhimurium. Therefore, full serotyping is very useful in identifying the specific serotype. Note, that the World Health Organization (WHO) is no longer naming new *Salmonella*, so those serotypes are reported by their numerical and

At the WVDL, not all *Salmonella* are serotyped fully as to save money for our clients. Often for bovine cases, only one isolate from an animal or sample will be fully serotyped and the other *Salmonella* isolates will be serogrouped. As long as the other *Salmonella* isolates serogroup (e.g. serogroup B for *Salmonella* ser. Heidelberg) to the same serogroup as the fully serotyped *Salmonella* within the same accession, then those *Salmonella* are only serogrouped not serotyped. Therefore in the document below, more serogroups have been identified than serotypes as a single case may have many *Salmonella* serogrouped, but only one *Salmonella* isolate that was serotyped. As an example, a group of 10 feces submitted for *Salmonella* culture might obtained 5 *Salmonella* isolates (5 of the 10 animals had *Salmonella* isolated), where only one will be serotyped and the other four will be serogrouped (e.g. 1 serotype reported and 4 serogroups reported). The WVDL deals with a variety of *Salmonella* serotypes obtained from various species and samples types. The document below demonstrates the variety of *Salmonella* isolates that the WVDL identified in 2021.

The WVDL identified a total of 1,466 *Salmonella* isolates in 2021. The document does not include isolates that could not be full serotyped by ourselves or the National Veterinary Services Laboratories (NVSL) and do not include monophasic *Salmonella* except for 1,4, [5],12:i:-, as this monophasic *Salmonella* is frequently isolated. Of those isolates 51.1% were bovine, 46.4% were avian, 0.5% were equine and 1.9% were canine, porcine, caprine, feline or other in origin.

MOLECULAR DIAGNOSTICS

FREE 24-WELL PLATES FOR THE COLLECTION OF EAR NOTCH SAMPLES FOR BVD PCR POOL TESTING

WVDL is currently in the process of validating 24-well plates for ear notch collection and BVD testing. We have completed testing of these plates for PCR and are now ready to send out to clients to solicit feedback on the ease of use for ear notch collection. The sample submission process will be similar to swabs samples that are collected in 96-well plates. The use of these plates will eliminate the need to label tubes and package the ears in individual tubes; thus saving time on farm. One plate will hold 24 ear samples for one pool PCR. With this new sampling method, we will still be able to test the ears individually if the pool result is positive to determine which animal in that pool is positive thus ensuring individual sample identification. Plates and lids are available at no charge by emailing supply.room@wvdl.wisc.edu. Please complete the submission form and survey so we may assess the ease of use and client interest in this new process.

SAMPLE REQUIREMENT FOR SEMEN PCR

As the PCR assays are slowly being incorporated into the WOAH (fmr. OIE) standard for the detection of more diseases in semen, the minimum WOAH requirement of 100 µl semen sample for PCR detection of certain diseases has become a standard that warranted consideration. WVDL is looking at adopting a minimum of 100 µl semen sample for all PCR assays, which will keep in compliance with WOAH requirements. Change to this volume will **require a minimum of 4 smaller (0.25 cc) or 2 larger (0.5 cc) straws** to be submitted for PCR testing on semen.

We are making a soft change for the remaining of 2022, as we will continue to use our current requirement of minimum 3 smaller straws, but would like to encourage all our clients to plan ahead and adopt this change so that it will not be a total surprise for you when we roll the **new requirement out in 2023**. For clients that have already been contacted and have adopted this change, we truly appreciate your flexibility.

PORCINE CORONAVIRUSES PANEL TESTING AVAILABLE AT WVDL

WVDL has recently completed validation of a porcine coronaviruses panel for the detection of porcine epidemic diarrhea virus (PEDV), transmissible gastroenteritis virus (TGEV) and porcine delta coronavirus (PDCoV) in fecal swabs. These viruses cause acute and contagious enteric diseases in swine that are characterized by diarrhea, fever and vomiting. These diseases can cause significant morbidity and mortality, particularly in young piglets, resulting in economic losses in the swine industry. The cost for this panel of tests is $57 and will be offered Monday, Wednesday and Fridays as needed. Currently this test is only being offered on fecal swabs.

PATHOLOGY

ALPACA ENDOCARDITIS CASE WRITE-UP PUBLICATION

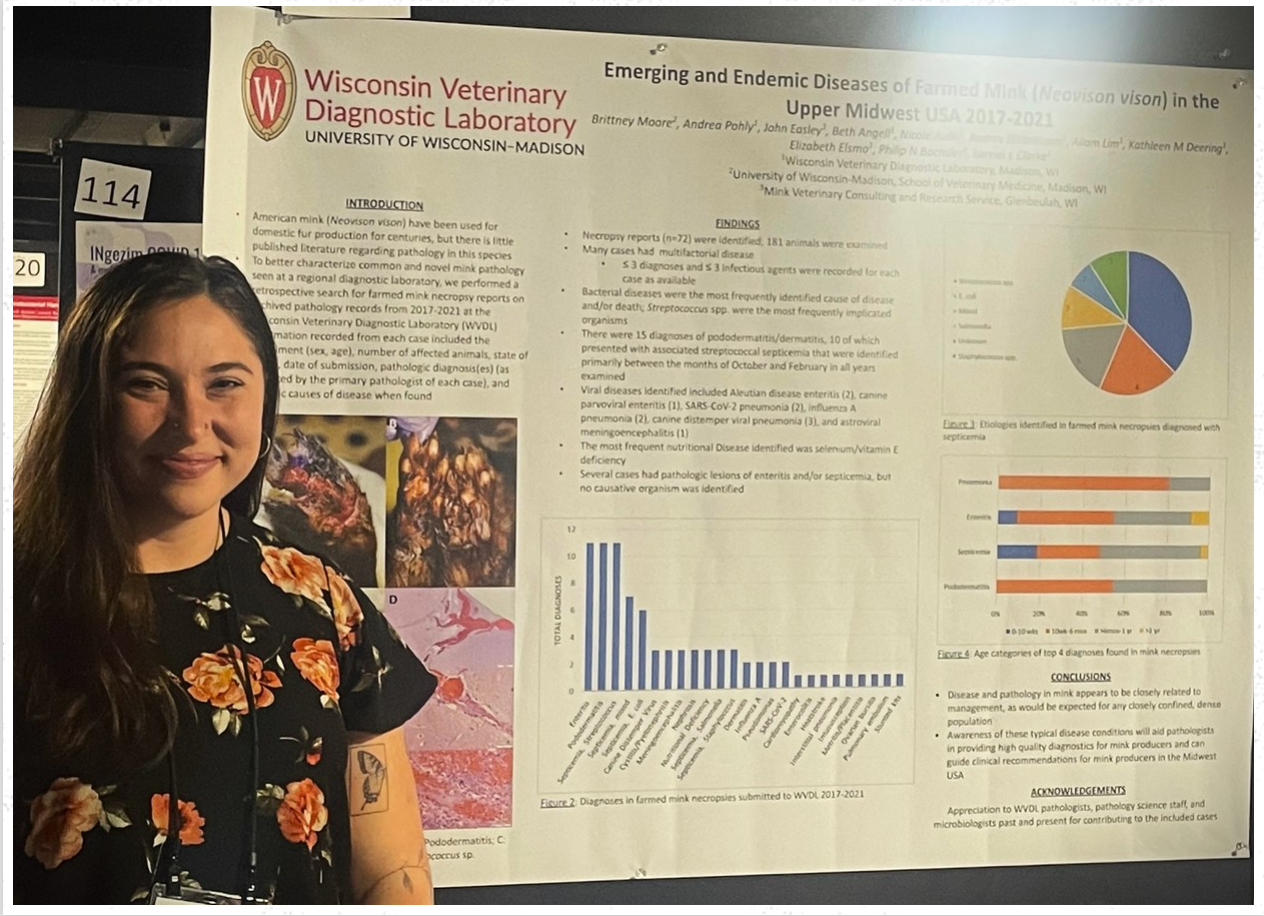
Bayla Bessemer, a senior veterinary student at Michigan State University, visited the WVDL as a pathology extern in early 2022. She recently published a case report from her time working with the pathologists at WVDL as well as others in the lab, describing endocarditis in an alpaca with *Listeria monocytogenes*. Bayla is pursuing a residency in anatomic pathology after completing veterinary school at MSU in the Spring of 2023. A link to this publication is below:

Pathology in Practice avmajournals.avma.org

"Pathology in Practice" published on 01 Nov 2022 by American Veterinary Medical Association.

RECENT AAVDL POSTER PRESENTATION ON EMERGING AND ENDEMIC DISEASES OF FARMED MINK

Brittney Moore is a senior veterinary student at UW-Madison who recently presented a collaborative WVDL retrospective study entitled “Emerging and Endemic Diseases of Farmed Mink (*Neovison vison*) in the Upper Midwest USA 2017-2021”, at the 2022 annual AAVLD meeting. The study found a predominance of cases with septicemia, often associated with pododermatitis. Brittney is pursuing a residency in anatomic pathology after graduating from veterinary school at UW in the Spring of 2023 and plans to publish the findings of this study.



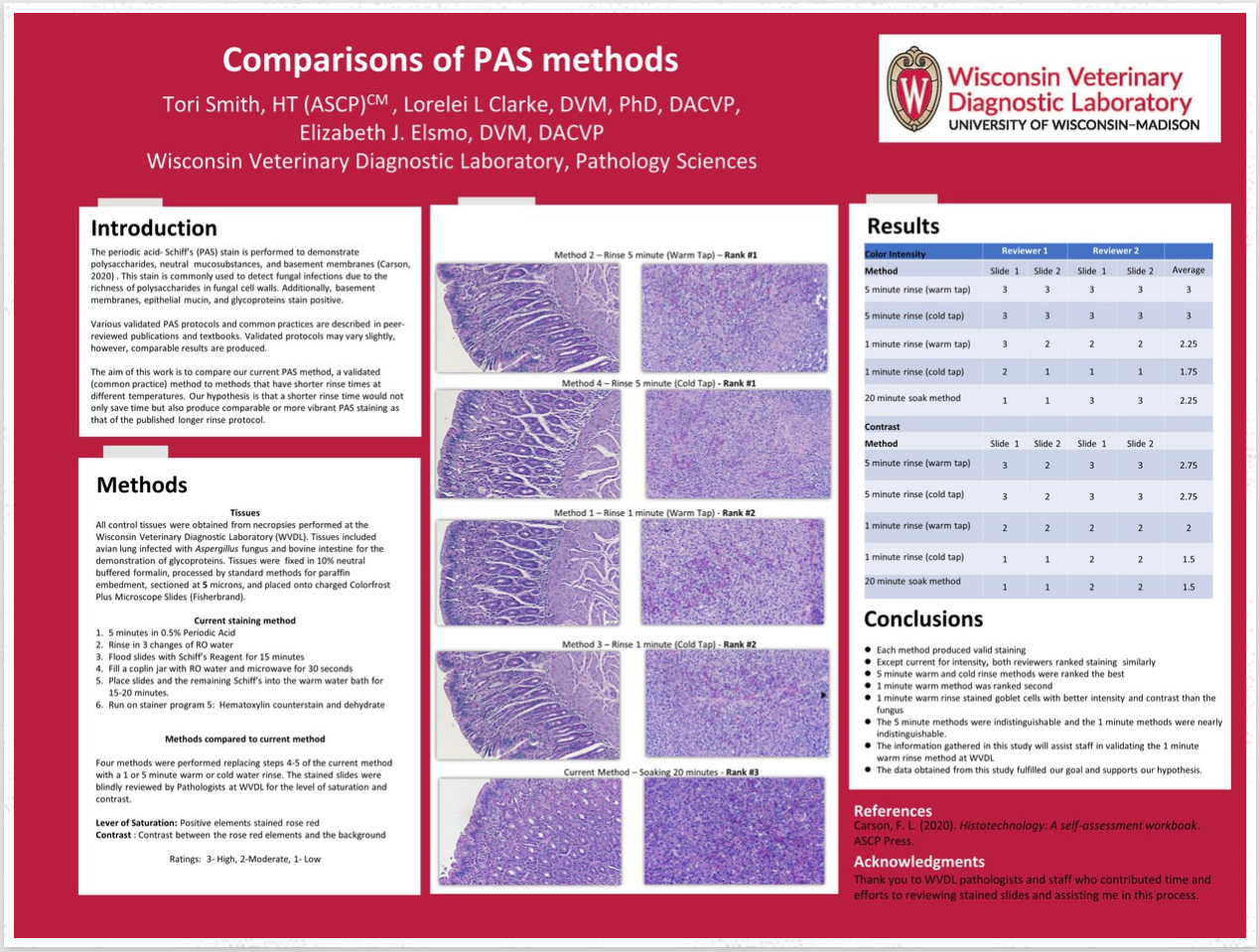
WVDL Representation at Annual National Society of Histotechnology Conference

This past October, Tori Smith, a Pathology Sciences Microbiologist at the WVDL, presented a poster at the National Society of Histotechnology Conference in Reno, Nevada. The poster was titled Comparisons of PAS methods.

The Periodic Acid-Schiff's stain is performed to demonstrate polysaccharides, neutral mucosubstances, and basement membranes. It is also commonly used to detect fungal infections due to the richness of polysaccharides in fungal cell walls. Variations of this stain are described in peer reviewed publications, however, the study method here used a 15-minute soak in distilled water and Schiff's reagent was not shown to be common practice.

The aim of this work was to compare this method with a commonly used validated method using varied rinse times and water temperatures. The study hypothesis was that a shorter, 1-minute warm tap water rinse would not only save time but also produce comparable or better staining quality to that of the published longer 5-minute rinse. The study also compared the tap water rinse methods to15-minute warm distilled water and Schiff's reagent soaking method.

It was concluded that all methods produced valid results and the 1-minute warm tap water rinse produced better results than the current method. Data gathered from this study helped the WVDL staff to validate the PAS method with the shortened rinse step. This improves turnaround time and provides our clients with faster results.



Comparisons of PAS methods

Tori Smith, HT (ASCP)CM , Lorelei L Clarke, DVM, PhD, DACVP,
Elizabeth J. Elsmo, DVM, DACVP
Wisconsin Veterinary Diagnostic Laboratory, Pathology Sciences

Wisconsin Veterinary Diagnostic Laboratory
UNIVERSITY OF WISCONSIN–MADISON

Introduction

The periodic acid- Schiff's (PAS) stain is performed to demonstrate polysaccharides, neutral mucosubstances, and basement membranes (Carson, 2020) . This stain is commonly used to detect fungal infections due to the richness of polysaccharides in fungal cell walls. Additionally, basement membranes, epithelial mucin, and glycoproteins stain positive.

Various validated PAS protocols and common practices are described in peer-reviewed publications and textbooks. Validated protocols may vary slightly, however, comparable results are produced.

The aim of this work is to compare our current PAS method, a validated (common practice) method to methods that have shorter rinse times at different temperatures. Our hypothesis is that a shorter rinse time would not only save time but also produce comparable or more vibrant PAS staining as that of the published longer rinse protocol.

Methods

Tissues

All control tissues were obtained from necropsies performed at the Wisconsin Veterinary Diagnostic Laboratory (WVDL). Tissues included avian lung infected with *Aspergillus* fungus and bovine intestine for the demonstration of glycoproteins. Tissues were fixed in 10% neutral buffered formalin, processed by standard methods for paraffin embedment, sectioned at **5** microns, and placed onto charged Colorfrost Plus Microscope Slides (Fisherbrand).

Current staining method

1. 5 minutes in 0.5% Periodic Acid
2. Rinse in 3 changes of RO water
3. Flood slides with Schiff's Reagent for 15 minutes
4. Fill a coplin jar with RO water and microwave for 30 seconds
5. Place slides and the remaining Schiff's into the warm water bath for 15-20 minutes.
6. Run on stainer program 5: Hematoxylin counterstain and dehydrate

Methods compared to current method

Four methods were performed replacing steps 4-5 of the current method with a 1 or 5 minute warm or cold water rinse. The stained slides were blindly reviewed by Pathologists at WVDL for the level of saturation and contrast.

Lever of Saturation: Positive elements stained rose red
Contrast : Contrast between the rose red elements and the background

Ratings: 3- High, 2-Moderate, 1- Low

Method 2 – Rinse 5 minute (Warm Tap) – **Rank #1**

Method 4 – Rinse 5 minute (Cold Tap) - **Rank #1**

Method 1 – Rinse 1 minute (Warm Tap) - **Rank #2**

Method 3 – Rinse 1 minute (Cold Tap) - **Rank #2**

Current Method – Soaking 20 minutes - **Rank #3**

Results

Color Intensity	Reviewer 1		Reviewer 2		
Method	Slide 1	Slide 2	Slide 1	Slide 2	Average
5 minute rinse (warm tap)	3	3	3	3	3
5 minute rinse (cold tap)	3	3	3	3	3
1 minute rinse (warm tap)	3	2	2	2	2.25
1 minute rinse (cold tap)	2	1	1	1	1.75
20 minute soak method	1	1	3	3	2.25
Contrast					
Method	Slide 1	Slide 2	Slide 1	Slide 2	
5 minute rinse (warm tap)	3	2	3	3	2.75
5 minute rinse (cold tap)	3	2	3	3	2.75
1 minute rinse (warm tap)	2	2	2	2	2
1 minute rinse (cold tap)	1	1	2	2	1.5
20 minute soak method	1	1	2	2	1.5

Conclusions

- Each method produced valid staining
- Except current for intensity, both reviewers ranked staining similarly
- 5 minute warm and cold rinse methods were ranked the best
- 1 minute warm method was ranked second
- 1 minute warm rinse stained goblet cells with better intensity and contrast than the fungus
- The 5 minute methods were indistinguishable and the 1 minute methods were nearly indistinguishable.
- The information gathered in this study will assist staff in validating the 1 minute warm rinse method at WVDL
- The data obtained from this study fulfilled our goal and supports our hypothesis.

References

Carson, F. L. (2020). *Histotechnology: A self-assessment workbook*. ASCP Press.

Acknowledgments

Thank you to WVDL pathologists and staff who contributed time and efforts to reviewing stained slides and assisting me in this process.

SEROLOGY

BARRON LABORATORY – SEROLOGY UPDATE

REMINDER THAT SEROLOGICAL AVIAN INFLUENZA (AI) TESTING HAS MOVED TO ELISA

To ensure we are able to continue providing exceptional diagnostic services, we recently transitioned our testing method for the detection of Avian Influenza from agar gel immunodiffision (AGID) to an enzyme linked immunosorbent assay (ELISA). However, we will continue to provide confirmatory testing via AGID and will work in partnership with NVSL and our WVDL-Madison facility to identify nucleic acid from avian influenza virus found in non-serum samples. The price of the avian influenza ELISA is $3.00 per serum sample. The price for the AI AGID will also be $3.00 per serum sample. If you utilize your own submission form, please update the test method requested to ELISA. We appreciate your decision to partner with us and take great pride in supporting our nation's poultry industry. If you have any questions, please call the WVDL Barron laboratory at 715-637-3151.

CLOTTING OF AVIAN SERUM

Recently WVDL-Barron Serology Laboratory has experienced an increase in clotted serum samples. Due to insufficient volume and poor quality, clotted serum cannot be tested. To ensure optimal quality, we highly recommend that collected whole blood be kept in tubes sitting upright at room temperature for a minimum of 30 minutes to a maximum of 60 minutes. This timeframe allows the blood clot to form and minimizes the likelihood of any clotting factors remaining in the serum. If possible, samples may then be centrifuged and serum removed for submission. If centrifugation is not possible, samples should be chilled and submitted directly to the laboratory for testing.

CASEOUS LYMPHADENITIS (CL) ELISA TESTING AVAILABLE AT WVDL-BARRON

Along with bacterial culture for *Corynebacterium pseudotuberculosis* at both the Madison and Barron WVDL Laboratories, the Barron Serology Laboratory also offers CL (occasionally referred to as CLA) ELISA. This is a serological assay to detect *C. pseudotuberculosis*-specific antibodies in sheep and goat sera. For definitive diagnosis of animal showing clinical signs (visible subcutaneous abscesses), please submit abscess material for culture to directly diagnosis CL. However, for herd level screening, please use the CL ELISA. As a reminder, a serological test for an individual animal should be interpreted with caution given the animal could have an active or past infection that has resolved. The CL ELISA should be used to determine herd prevalence of the infection. In addition the WVDL-Barron Laboratory offers the Ovine Progressive Pneumonia (OPP) Virus ELISA as well as the Caprine Arthritis Encephalitis (CAE) virus ELISA, and the Madison locations offers Johne's disease diagnostics including ELISA, culture and PCR. Please submit at least 0.5 mL of serum for this testing. If requesting CL and/or CAE/OPP and Johne's Disease ELISAs, the WVDL at either location will split the sera for you.

MADISON LABORATORY - SEROLOGY UPDATE

REMINDER THAT THE WVDL IS IN THE PROCESS OF DISCONTINUING THE BRUCELLOSIS COMPLEMENT FIXATION (CF) TESTS

Upon examination of the health certificates, Brucellosis Complement Fixation (CF) tests are no longer needed. The Brucellosis CF test will be discontinued on January 1, 2023 and may be

available solely for confirmation testing. For Brucellosis serological assays, the WVDL offers a variety of tests including the Brucellosis Buffered Acidified Plate Antigen (BAPA; also called Brucellosis Buffered Antigen Test (BBAT)), Antibody Card Agglutination (Card), Standard Tube Test (STT) and the Fluorescence Polarization Assay (FPA) tests. Please check the health certificate requirements for the country or state that the testing is needed for. The name of the tests may vary slightly from country-to-country. Please call the WVDL if you have concerns if the test required for movement can be met by the WVDL. The WVDL will automatically perform confirmatory testing on any non-negative Brucellosis tests. Please contact the WVDL with any questions or concerns you may have.

Additionally, the Johne's Disease CF test has already been discontinued. For Johne's Disease serological testing needs, please use the Johne's Disease/*Mycobacterium avium* subspecies *paratuberculosis* (MAP) ELISA. We also offer the Johne's Disease/MAP PCR and liquid culture from feces. The Johne's Disease Liquid Culture is approximately a 9 week culture and should only be used when required for health certificates.

EHD COMPETITIVE ELISA NOW VALIDATED

The WVDL-Madison Serology Laboratory has recently validated the Innovative Diagnostics (ID Vet) Epizootic Hemorrhagic Disease (EHD) competitive ELISA for bovine sera. Previously, the only serological assay available was the EHD agar gel immunodiffusion (AGID), which is required for China's health certificates. However, the EHD AGID demonstrates cross-reactivity with BTV antibodies and thereby produces false positives when serum contains anti-BTV antibodies. Therefore, there was a need to validate the EHD cELISA. The ID Vet EHD cELISA kit performs with a high sensitivity and specificity. **Specificity of the EHD cELISA is superior to that of the EHD AGID.** When sera containing anti-BTV antibodies were tested, they did not show positivity in the ELISA as they did when using the AGID. This kit is also approved for caprine, ovine, and cervid sera; however, the serology lab has not validated those sample types. The test can still be performed on sera from these non-bovine species, but will be reported with a disclaimer. The cost of the test is $12.00 per sample.

Whenever possible, please use the EHD cELISA instead of the EHD AGID.

Interpretation for the EHD cELISA are as follows:

S/N%	Interpretation	Explanation and Recommendation
≥40.00%	Negative	Antibodies specific to EHD virus in ruminant samples were not detected.
30.01 to 39.99%	Inconclusive	Cattle with cELISA results in this range are unknown. It is recommended to retest these animals or submit sample to AGID for confirmation.
≤30.00	Positive	Antibodies specific to EHD virus in ruminant serum samples were detected.

UPDATE ON BLV ELISA TESTING

The WVDL has validated the BLV cELISA kit produced by Innovative Diagnostics (ID Vet). We have transitioned away from the former kit and are exclusively testing for BLV using the ID Vet cELISA kit. Preliminary data demonstrates a **reduction in weak positive results for history negative animals by at least 60%.** We hope to gain further information on the performance of this kit as more data is collected. Please call or email the WVDL if you have any questions or concerns in regards to the BLV cELISA.

The ID VET Screen BLV Competition ELISA (BLV cELISA) kit allows for detection of anti-gP51 antibodies in sera from bovine species. Samples are reported as **Competition Percentage** (**S/N%**). The S/N% for positive animals is ≤50%.

For bovine serum samples:

S/N%	Interpretation	Explanation and Recommendation
≥ 60.00%	Negative	Antibodies specific to Bovine Leukemia virus in bovine serum samples were not detected.
50 to 60 %	Inconclusive	Cattle with cELISA results in this range are unknown. It is recommended to retest these animals or submit sample to AGID for confirmation.
≤ 50.00%	Positive	Antibodies specific to Bovine Leukemia virus in bovine serum samples were detected.

VIROLOGY

HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) UPDATE

After a short break in July and August, HPAI outbreak has ramped up again this Fall. The WVDL continues to receive new foreign animal disease (FAD) investigations and surveillance testing samples for HPAI. Staff had been performing testing 5 days a week and on-call for weekend testing as needed for newly positive flocks and permitted movement. Staff in Virology and Molecular Diagnostics sections have continued to modify schedules and workload to accommodate the additional sample testing with rapid turnaround times. Since late August, 7 additional positive premises had been identified in Wisconsin (1 was tested in Minnesota due to proximity of the lab to the premise). This bring the total to 29 (11 commercial, 18 non-commercial) flocks across 18 Wisconsin counties that have been confirmed with HPAI in domestic birds for 2022, which is far worse than the previous outbreak in 2015. We also continue to detect the virus in wild birds that are submitted for testing at the WVDL.

Nationwide, the virus has been detected from coast to coast in all migratory flyways and in every state except West Virginia and Hawaii. It is now the largest geographical HPAI outbreak ever recorded in the USA. To date, over 49 million domestic birds have died, or were depopulated, from the disease as part of the response and eradication effort. A total of 51 NAHLN labs have been activated to respond to the massive demand of testing. The WVDL has been activated since mid-March and is continuing to respond to this outbreak.

ANNUAL WVDL BOVINE GENETICS MEETING

WHEN

THURSDAY, DEC. 1ST, 9AM-3PM

WHERE

445 EASTERDAY LANE
MADISON, WI

MORE INFORMATION

Please RSVP by 11/23/2022 using the link below. If you have troubles opening the RSVP please try opening in another browser.

This meeting is **free** and will be at the WVDL. We will provide lunch and refreshments. Attendance is worth 5 hours of CE credits.

There will be updates from WVDL diagnostic sections, latest details on the Bovine Germplasm Movement Plan (BGMP), and news from other invested parties in the bovine genetics industry. See more by opening the agenda link below.

For those attending in-person, parking near and around the WVDL is slightly restricted. If you are able to carpool we would sincerely appreciate it. Please indicate on the RSVP if you will be carpooling or driving separately so we can plan parking accordingly.

2022 Annual WVDL Bovine Gene... forms.gle

Please fill out attendee information. We look forward to seeing you at this year's meeting.

2022 Annual WVDL Bovine Genetics Meeting Agenda.pdf

Please download this agenda for more information.

Download

173.4 KB

SAVE THE DATE - SWINE & POULTRY CONFERENCE

Swine & Poultry Conference
Held at UW-River Falls Campus
Saturday, April 29th, 2023
8 am – 3 pm

This conference is being held and available to:
Backyard producers, veterinarians & certified veterinary technicians
CE credits will be available
Stay tuned for more information to come!

CONTACT US

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Wisconsin Veterinary Diagnostic Laboratory Providing You With Reliable Results and Exceptional Customer Service

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Salmonella-serotypes-2021.pdf

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To view the 2021 WVDL Salmonella serotype list download this document

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