



**VIRGINIA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES**  
**Updates from the State Veterinarian's Office** **Spring 2021**

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What interesting times we live in....although I suppose that has probably been said many times over the years. But the fundamentals do not change much for us, as we continue to support animal health and agriculture in Virginia, and we can take comfort in that. The work that we all do continues to be very important to society, whether or not others always realize that.

One important element of that here is our laboratory system, and our lab system owes much of its success to the great job that Dr. Joe Garvin did in leading the Virginia Department of Agriculture and Consumer Services (VDACS) labs for many years. Joe started working for VDACS in October 1988 and held various roles, but he was always intently focused on improving the organization and doing everything possible to support Virginia agriculture. Joe was a trusted colleague and friend, and died following a brief illness in June of 2020. He was a good man, and is sorely missed.



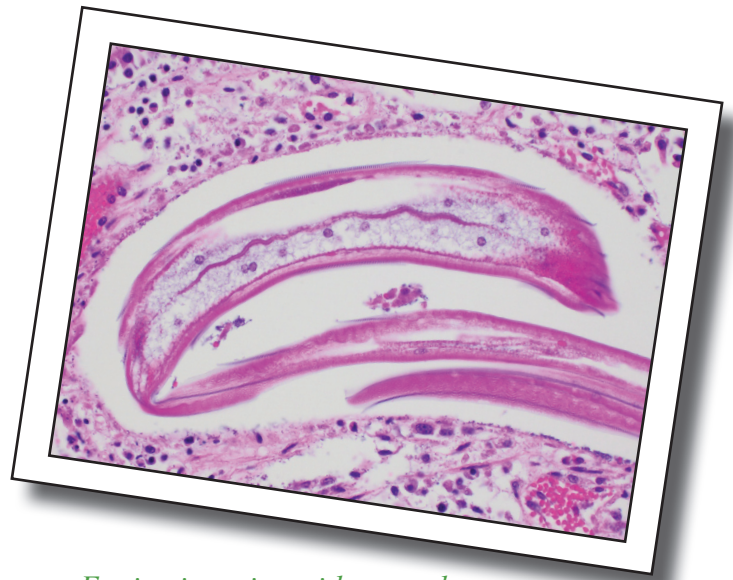
We are very fortunate to have Dr. Jessica Walters as our new lab system director, and we are excited about the opportunities to support you and animal health in general. In support of Dr. Garvin's legacy, and with the transition to new leadership of our lab system under Dr. Walters, we want to examine how VDACS' lab system can best support animal agriculture in Virginia. And with that, I would welcome input from each of you. Would you like to see us improve or change the diagnostic services that we provide to you? How is the customer service you receive? Are test fees and turnaround times acceptable? With as easy as it is to ship samples overnight these days, are you okay if we refer (send out) samples to other labs that may run a specific test

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## SPOTLIGHT ON VDACS PATHOLOGISTS

Did you know...that VDACS has two board certified pathologists that read all of the histopathology slides that come from submissions to each of our labs? What does that mean and why does it matter? When an animal is submitted for necropsy, the diagnostician is responsible for prosecuting and evaluating the tissues of the animal. In order to reach a diagnosis or presumed diagnosis for the submissions to the lab, an array of testing is done. This can include bacteriology, serology, virology, and a whole host of other tests. One of these tests is histopathology, or microscopic evaluation of the tissues of that animal. Dr. Francisco Carvalho and Dr. Sheryl Coutermarsh-Ott are the VDACS histopathologists that provide this service. They are veterinarians trained to identify structural changes in tissue architecture to better diagnose disease. They can confirm findings suspected by the gross evaluation of the tissue and sometimes identify changes that couldn't be seen by the naked eye. They can then use these changes to help determine if a lesion is infectious or non-infectious, how long a disease has been going on, how extensive the disease is, and whether or not the disease is localized or systemic. This often helps to narrow the differential list which can then be combined with data from other tests (culture, virus isolation,

clinical data, etc.) to come up with a likely diagnosis and treatment plan. They love their job and are happy to utilize their training to serve the VDACS mission and the state community of veterinarians and clients. Dr. Carvalho is situated in Blacksburg, VA on the VA-MD College of Veterinary Medicine campus and Dr. Ott is housed in Wytheville, VA at the Wytheville Regional Animal Health Laboratory. They are happy to discuss cases and questions when they arise, so please feel free to contact them through the overseeing diagnostician on your case.



*Equine intestine with strongyles*

## OFFICE OF LABORATORY SERVICE UPDATE

The Office of Laboratory Services is excited to continue to consolidate and grow! Our new fee schedule, located at [www.vdacs.virginia.gov/animals-fees-for-testing-procedures.shtml](http://www.vdacs.virginia.gov/animals-fees-for-testing-procedures.shtml), now provides cost, location, preferred specimen type, and approximate turnaround time for all of our system wide diagnostic tests. We hope that by consolidating testing, we can keep costs low and expedite your results by decreasing shipment times. Our goal is to concentrate testing to laboratories that are most utilized by certain commodity groups. Certain

testing will still be completed at all labs (i.e. Coggins, cultures and sensitivities, and fecal parasite examinations). As always, you are free to submit samples to whichever lab is easiest for you and we will make sure we get them where they need to go.

We are always open to feedback and ideas for testing to further assist our agricultural community. It is our goal to make this lab system the best it can be to further serve our clients. Whether by utilizing data for reports or enhancing testing capabilities, we look forward to continuing to work with all of you.

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# UPDATE ON ANIMAL DISEASE TRACEABILITY (ADT) IN VIRGINIA

Our ability to trace livestock moving through interstate commerce for the purpose of responding to animal disease events continues to improve in Virginia and throughout the US. Effective traceability during a disease outbreak relies on three basic factors: widespread use of standardized animal identification (ID) devices, efficient collection of livestock movement, and vaccination and test records (when, what, where). We also require rapid availability of this information when responding to disease events.

Standardized official ID tags (e.g., 840-series tags for cattle and swine, scrapie tags for sheep and goats, premises ID tags for commercial swine) are available to veterinarians and producers through state, federal and commercial sources. These tags use unique numbering systems that help identify individual animals that may be involved in a disease event and exclude those that have not been exposed. In addition, the cattle industry continues to transition to the use of electronic radio frequency ID (RFID) tags that can be quickly and accurately scanned at livestock markets, exhibitions and processing facilities. This reduces errors in recording tag numbers and helps to keep animals moving at the speed of commerce.

**The U.S. Department of Agriculture (USDA) has recently announced the nationwide availability of 840-series RFID tags at no cost to veterinarians and their clients who manage breeding age cattle (bulls, cows and replacement heifers).** Tags are available from the VDACS Office of Veterinary Services (OVS) in Harrisonburg (540.209.9120) and Wytheville (276.228.5501). Scrapie program tags for sheep and goats are available in limited quantities from USDA (866.USDATAG).

In addition to more widespread use of official ID tags, efficient capture of animal ID and other important information from test charts, interstate certificates of veterinary inspection (CVI) and market records is a key component of an effective disease traceability system. We continue to encourage private practitioners and others in the livestock industry to utilize electronic documents, RFID readers, mobile applications and



other e-commerce tools to collect information more quickly and accurately. Moving from paper-based to electronic systems does come with a learning curve and **the OVS can provide assistance to those interested in learning more about RFID technology, electronic CVI (eCVI) applications and new web-based tools under development by USDA.** We have seen a substantial increase in the use of e-commerce tools in the past few years. Over 50% of all regulatory animal health information generated in Virginia now arrives in electronic form, electronic records on cattle movements are being collected at all public livestock markets and information on all imported cattle is captured through a required animal entry permit system or approved eCVI applications (e.g., Global Vetlink, AgMove (formerly AgView), VetSentry and others). All of this information is reviewed and stored in a comprehensive animal health database managed by the OVS where it can be rapidly accessed if a serious animal disease event were to occur.

Finally, in 2021 we will be working with regional feeder cattle programs and livestock markets to explore the effectiveness of both handheld and fixed panel RFID reader systems to capture data on large volume cattle movements. No decision has been made on the national level regarding individual ID requirements for beef feeder cattle, but this appears to be the right time to start looking at potential solutions to integrate this segment of the cattle industry in the ADT program.

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# ID REQUIREMENTS FOR VIRGINIA SHEEP AND GOATS

Official ID in sheep and goats is one of the most confusing issues that veterinarians face when writing CVIs. Unlike cattle and swine, small ruminants have non-tag options for official ID.

For sheep and goats entering Virginia from any other state, the following are acceptable:

1. Official Ear Tags: must bear the U.S. Shield
  - Scrapie Program tags: Flock ID tags (flock number and individual animal ID on tag)
  - Serial ID tags: (state code with serials or letters, White or Orange tags)
  - RFID tags: either standard (Cattle size) or sheep size. Must begin with 840
  - **For earless goats, a scrapie flock ID or Serial ID tag may be secured through a collar which cannot be slipped over the head.**
2. USDA Compliant Microchips: can be used with restrictions
  - Microchip number must be listed on registration paper which must be attached to the CVI

## **Virginia does not allow tattoos as official ID when imported from other states**

For sheep and goats moving within the state of Virginia:

1. Official Ear Tags: preferred
2. USDA Compliant Microchips: with restrictions listed above
3. Breed Registry Tattoos: can use with restrictions
  - must be legible
  - must be accompanied by the registration paper
4. Flock ID Tattoos: for grade animals, can use with restrictions
  - must be legible
  - flock ID assigned by USDA tattooed in one ear, animal ID in other ear

In Virginia, livestock shows, exhibitions and fairs can require official eartags and refuse microchips or tattoos.

**For sheep and goats going into slaughter channels such as stockyards or buying stations, only official eartags are allowed by the USDA.**

The only sheep or goats who can leave the farm without official ID are those animals less than 18 months old and going direct to a slaughter facility. Animals leaving the farm for breeding or older than 18 months not going to slaughter need to have an official eartag or if registered, a legible breed association tattoo.

Veterinarians should encourage their clients with sheep flocks and goat herds to register with the Scrapie Program-regardless of how small the flock or herd. The USDA can be contacted at **804.343.2569**. New producers will be assigned a flock number, premise ID and will be given up to 100 free plastic flock ID tags. VDACS staff in Harrisonburg and Wytheville are always available for assistance.

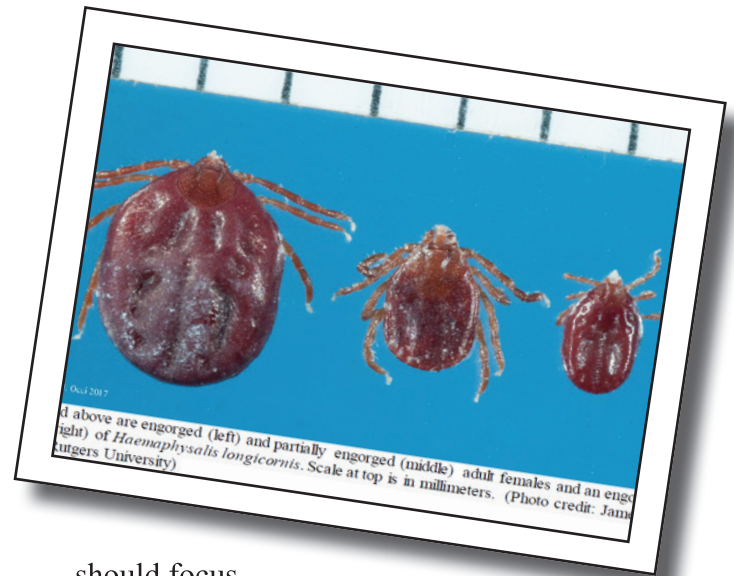
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# ASIAN LONGHORNED TICK AND THEILERIOSIS UPDATE

In the fall of 2017, the Asian Longhorned Tick (ALT) was identified on a sheep in New Jersey. The ALT, native to Southeast Asia, had not previously been identified in the U.S. The following spring, *Theileria orientalis* and the ALT were identified on an Albemarle County farm, following the loss of five adult cows. In the four years since the initial finding, and thanks to Dr. Kevin Lahmers and others at the Virginia Maryland College of Veterinary Medicine (VMCVM), VDACS, and Virginia Cooperative Extension, our understanding of the ALT and *T. orientalis* has greatly improved.

During this past year it was definitively proven that the ALT is capable of transmitting infective sporozoites of *T. orientalis* in tick saliva. Initially, it was thought that the tick must be attached for 48-72 hours for it to be infective. However, if environmental temperatures are high, infective sporozoites can develop in ticks and enter the host within hours of attachment. Incubation for *T. orientalis* is 8-48 days and ticks may or may not be present on the infected animals. As of today the ALT has been identified in 32 Virginia counties and 15 states, mostly along the eastern seaboard. Virginia has been very proactive in identifying the ALT and testing for *T. orientalis*. Dr. Lahmers has been instrumental in developing a diagnostic PCR test and leading the research nationwide.

Clinically, Theileriosis resembles Anaplasmosis, as both are intracellular red blood cell parasites that lead to red blood cell destruction. Signs of anemia, fever, jaundice, difficulty breathing and lethargy are most commonly noted. Death loss in infected herds is 0-5%. Most infected herds report a 95-100% positive infected rate. Once parasitized, cattle are considered carriers for life. Currently there are no approved treatments in the U.S. Effective treatments worldwide are either cost prohibitive or cause extended slaughter withdrawal times. Periods of stress can trigger a relapse of the disease. Treatment



should focus on supportive measures, stress reduction, nutritional supplementation, and tick control at the herd level. On a positive note, work with cattle from the Virginia correctional system herds indicated no lasting significant effects to growth and production in animals that survive.

Prevention and control are aimed at reducing tick infestations. Chemical control with ivermectins, permethrins, insecticide fly tags, and treated back rubber are all effective in reducing tick populations in cattle. Regular inspection for ticks is recommended, especially on ears, head, neck, between legs and under the tail. All life stages of the ALT may be found at the same time on an animal.

Unfortunately, it appears that the tick and Theileriosis are here to stay, as evidenced by the continuing expanded distribution. The detected prevalence of *T. orientalis* in adult cattle at Virginia sale barns increased from 8% in 2019 to 21% in 2020. Currently there are no movement restrictions of Virginia cattle across state lines and this disease represents no threat to human health.

If you have any questions about testing or tick identification, contact:

**Dr. Kevin Lahmers at the VMCVM**  
**540.731.420**  
**klahmers@vt.edu**

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# RABIES IN A VACCINATED HORSE

Every year in the U.S., 10-30 horses test positive for rabies. In Virginia, we often see at least one positive horse per year. A rabies diagnosis in horses is uncommon. However, this past fall a horse in Maryland tested positive. This case is unusual because the horse had been fully vaccinated for rabies. The horse had been imported into the U.S. two years earlier and received rabies vaccination annually for the past two years, administered by a veterinarian. Veterinarians may not think to test for rabies in neurologic horses that have been vaccinated. Rabies vaccines have a high efficacy rate but they are not 100% protective. Because rabies can present with such a variety of clinical signs and be fatal in exposed people, it is important to test deceased suspect horses if there has been human exposure regardless of vaccination status.

The horse in Maryland presented with aggressive behavioral changes that progressed to self-mutilation and was euthanized four days after signs were first evident. Clinical signs of rabies are variable in horses and may take up to 12 weeks or longer after the initial infection to appear. They may first present with insidious signs such as lameness, colic or subtle neurologic abnormalities. Other signs are fever, anorexia, blindness, dysphagia, hyperesthesia that manifests as self-mutilation, muscle twitching, ataxia, ascending paralysis and sudden death. Behavioral signs can be in the dumb

form manifested by severe depression and stupor or the furious form with maniacal, aggressive behavior. Death usually occurs within 5-7 days from initial signs.

In the event you have an equine case that dies or is euthanized with a possible diagnosis of rabies, whether vaccinated or not, call your local health department ([www.vdh.virginia.gov/local-health-districts](http://www.vdh.virginia.gov/local-health-districts)). They will determine if there has been exposure to humans or other animals on the farm. If it is determined that testing is necessary, the local health department will discuss options for obtaining the brain for free rabies testing. If the health department deems that rabies testing is not needed due to lack of exposure, you can still submit a sample to one of the state labs for diagnostic testing to determine the cause of neurologic disease. The lab can request rabies testing for diagnostic purposes. There is no cost for rabies testing but any additional testing requested (necropsy, biopsy, cultures, etc.) will have a fee ([www.vdacs.virginia.gov/animals-fees-for-testing-procedures.shtml](http://www.vdacs.virginia.gov/animals-fees-for-testing-procedures.shtml)). In the case of the vaccinated horse in Maryland, nine people underwent post exposure prophylaxis in Virginia. Because of the potential for a fatal outcome to people exposed to rabies, testing of suspect vaccinated and unvaccinated horses will help to keep everyone safe.

# LETTER FROM THE STATE VETERINARIAN

*Continued from page 1*

more frequently? Would you like to see our necropsy services continued as is, expanded, or decreased? We do not want to compete with our private practitioners, so we want to be attentive to supporting you as best we can.

If you have any thoughts on the above questions, comments, suggestions, or criticisms

regarding VDACS' lab system, please let me or Dr. Walters know, as we are focusing on how to best support animal agriculture in Virginia through the Office of Laboratory Services. Please share any comments you may have with us at [jessica.walters@vdacs.virginia.gov](mailto:jessica.walters@vdacs.virginia.gov) or [charles.broadus@vdacs.virginia.gov](mailto:charles.broadus@vdacs.virginia.gov).

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**CONTACT INFORMATION**

For general questions or communication, please email us at [vastatevet@vdacs.virginia.gov](mailto:vastatevet@vdacs.virginia.gov), or feel free to contact any of our staff members below:

**Dr. Charlie Broaddus, State Veterinarian**  
 804.692.0601  
[charles.broaddus@vdacs.virginia.gov](mailto:charles.broaddus@vdacs.virginia.gov)

**Dr. Dan Hadacek, Harrisonburg Regional Supervisor**  
 540.209.9120  
[dan.hadacek@vdacs.virginia.gov](mailto:dan.hadacek@vdacs.virginia.gov)

**Dr.Carolynn Bissett, Program Manager  
 Office of Veterinary Services**  
 804.786.2483  
[carolynn.bissett@vdacs.virginia.gov](mailto:carolynn.bissett@vdacs.virginia.gov)

**Dr. Abby Sage, Richmond Staff Veterinarian**  
 804.786.2483  
[abby.sage@vdacs.virginia.gov](mailto:abby.sage@vdacs.virginia.gov)

**Dr. Jessica Walters, Program Manager  
 Office of Laboratory Services**  
 540.830.7377  
[jessica.walters@vdacs.virginia.gov](mailto:jessica.walters@vdacs.virginia.gov)

**Dr. Tom Lavelle, Wytheville Regional Supervisor**  
 276.228.5501  
[tom.lavelle@vdacs.virginia.gov](mailto:tom.lavelle@vdacs.virginia.gov)



**LABORATORY SERVICES      PHONE      FAX      E-MAIL**

General Information and Billing Inquiries      804.786.9202      804.371.2380      [LabServices.VDACS@vdacs.virginia.gov](mailto:LabServices.VDACS@vdacs.virginia.gov)

**HARRISONBURG LABORATORY**  
 261 Mount Clinton Pike      540.209.9130      540.432.1195      [RAHLHarrisonburg@vdacs.virginia.gov](mailto:RAHLHarrisonburg@vdacs.virginia.gov)  
 Harrisonburg, VA 22802

**LYNCHBURG LABORATORY**  
 4832 Tyreeanna Road      434.200.9988      434.947.2577      [RAHLLynchburg@vdacs.virginia.gov](mailto:RAHLLynchburg@vdacs.virginia.gov)  
 Lynchburg, VA 24504

**WARRENTON LABORATORY**  
 272 Academy Hill Road      540.316.6543      540.347.6404      [RAHLWarrenton@vdacs.virginia.gov](mailto:RAHLWarrenton@vdacs.virginia.gov)  
 Warrenton, VA 20186

**WYTHEVILLE LABORATORY**  
 250 Cassell Road      276.228.5501      276.223.1961      [RAHLWytheville@vdacs.virginia.gov](mailto:RAHLWytheville@vdacs.virginia.gov)  
 Wytheville, VA 24382