LETTER FROM THE STATE VETERINARIAN

Last June, I had the opportunity to accompany a USDA team to evaluate Romania’s relative risk of Foot and Mouth Disease (FMD) and Classical Swine Fever (CSF). The trip was unlike anything I experience most days in my job, but it was a great opportunity to gain experience while providing my perspective to the USDA team.

The team was comprised of six people, the other 5 from USDA, and included two other veterinarians (one of whom was a FMD lab researcher), a microbiologist and two foreign services specialists. We worked long days and were very thorough and rigorous in our assessment of the Romanian disease testing programs.

Romania was fascinating – lots of open cropland in the eastern part of the country where I was, with fields filled with sunflowers and corn. They have very little animal agriculture on a large scale, but it was common for villagers in small towns to have a few chickens, a couple of pigs and perhaps a milk cow.

We visited with veterinary government officials at the national and local levels. Romania has 42 county-states, and each one has a diagnostic lab, with detailed surveillance records for FMD and CSF. The communist past of the country was still apparent as livestock owners readily accept the requirement that a government or private veterinarian write a health certificate, with RFID tag identification, for any livestock movements off the farm. With all of that information entered into a national database, their traceability system was very impressive, but it came with a price.

The lessons learned from this trip help me every day in my job here – maintaining our export markets is critical in supporting agricultural commodity prices, and having documentation of a robust foreign animal disease surveillance and response program is part of that. The work that we all do to keep foreign animal disease outbreaks at bay is extremely important in maintaining the export markets.

Charles C. Broaddus, D.V.M., PhD, Dip. ACT
Because of globalization, horses infected with Equine Piroplasmosis (EP) are now in Virginia and numerous other states. EP is found in many regions of the world, including parts of Africa, the Middle East, Asia, Europe, Central and South America, and the Caribbean. Only the United States, Canada, Australia, Japan, England and Ireland are not considered to be endemic areas. Since 1988, the United States, with the exception of Puerto Rico and the U.S. Virgin Islands, has been free of EP. However, an outbreak in Florida in 2008 revealed numerous horses in the U.S. were carrying the organism. Currently, infected horses are detected in three segments of the U.S. equine population: among horses imported prior to 2005 before current test methods were employed, horses associated with a ranch in south Texas where natural transmission by infected ticks was found and Quarter Horses that are primarily involved in sanctioned and unsanctioned racing. Racing Quarter Horses may be at higher risk of the disease due to illegal importation from Mexico, blood doping practices and the practice among some trainers to reuse contaminated needles, syringes, IV sets, and surgical and dental equipment. In 2017, three Quarter Horses in Virginia tested positive for EP after spending time on a sanctioned race-track in Louisiana.

Equine Piroplasmosis is a blood-borne protozoal infection of horses, donkeys, mules and zebras caused by either *Theileria equi* or *Babesia caballi* and is naturally transmitted by certain ticks. The protozoa must go through development in the tick, which is the definitive host. Relatively few species of ticks carry the organism in the U.S. These species of ticks generally favor tropical or sub-tropical climates found in the South. A naturally occurring tick vector does not exist in Virginia; however, ticks indigenous to Virginia have been shown to transmit the disease experimentally.

Acutely affected horses can experience fever, anemia, icterus, swollen abdomens and labored breathing. In its milder form, EP can cause weakness, loss of appetite, anemia and lethargy. Once infected, horses become carriers of the parasites unless treated to clear the infection. Most infected horses are outwardly healthy.

Since EP is considered a foreign animal disease, the infected horses in Virginia were quarantined. All other horses exposed to the positive animals tested negative, and the risk of natural spread was considered to be low since we do not have a naturally occurring competent vector in Virginia. The owners of the infected horses elected treatment using a USDA experimental treatment protocol. The horses were treated with intramuscular Imidocarb, an antiprotozoal agent, for four treatments 72 hours apart. Horses were pretreated with Buscopan to counteract the anticholinergic side effects of Imidocarb. To date, the USDA protocol has been used in more than 250 horses with a 99.5 percent success rate after one treatment. Some horses require two treatments to become negative.

Veterinarians seeing equine patients in Virginia should consider testing for EP in Quarter Horses that show signs of anemia or poor performance. Any Quarter Horses with a tattoo or history of unsanctioned racing should be tested for EP before purchase to protect the buyer’s interest.
THE VETERINARIAN’S ROLE IN AVOIDING ANTIBIOTIC RESIDUE

One of the most important jobs of food animal veterinarians is to prevent antibiotic and other violative drug residues in meat and milk. Both over-the-counter and prescription drugs can cause chemical residue levels in tissues above the federal tolerance level, and selling foods with such violative levels is illegal. Your clients depend on you to guide them through the maze of safe and judicious antibiotic use. Consumers expect you to treat sick animals and yet ensure that the milk and meat on their dinner tables is safe and wholesome. It is a best practice to educate and guide farmers on making good choices regarding antibiotic use and proper administration.

Veterinarians are being entrusted by the Federal Drug Administration (FDA) to oversee the use of antibiotics in animals. When administering antibiotics to food animals, veterinarians are required to establish a valid veterinarian-client-patient relationship; ensure that clients record antibiotic usage; administer all drugs properly and follow all withdrawal times; assure all employees are trained on usage and record keeping; and should work with producers to test any questionable animals before selling.

Five drugs are over-represented in meat residue detection: Excede®, Excenel®, Naxcel®, Penicillin and Flunixin. Each of these products has the following specific label directions:

- **Excede®** should be given subcutaneously (SQ) in the base of the ear. For bovine respiratory disease (BRD) or footrot, 1.5 mls/100lbs body weight (BW) is given once. For acute metritis, the same dose may be repeated in 72 hours in the contralateral ear. At either labeled dosage, a 13-day slaughter withdrawal and 0-day milk withdrawal is required. This product may not be used in veal calves, or for metaphylaxis.

- **Excenel®** should be given intramuscularly (IM) or SQ for BRD or footrot at 1-2mls/100lbs BW daily for 3-5 days. For BRD only, it may be given at 2 mls/100lbs BW on days 1 and 3. For metritis, it may be given at 2 mls/100lbs BW daily for 5 days. Give no more than 15 ml per injection site. At labeled doses, a four-day slaughter withdrawal and zero-day milk withdrawal is required. This product may not be used in veal calves.

- **Naxcel®** should be given IM or SQ at 1-2mls/100lbs BW for BRD or footrot. It may be given daily for three days, and continued thru day five if needed. At labeled doses, a four-day slaughter withdrawal and zero-day milk withdrawal is required.

- **Penicillin (PPG)** is labeled to be given IM at 1 ml/100lbs BW for respiratory disease. The more commonly used extra-label dosage of 3.3mls/100lbs BW requires a longer meat and milk withdrawal period. Give no more than 10ml per injection site, and do not use in veal calves. At labeled doses, a 14-day slaughter withdrawal and a 48-hour milk withdrawal is required.

- **Flunixin** is labeled to be given intravenously (IV) at 1-2mls/100lbs BW per day for up to 3 days. Extra-label administration in any route other than IV requires a longer meat and milk withdrawal period. At labeled doses, a 4-day slaughter withdrawal and a 36-hour milk withdrawal is required.

Extra-Label Use of drugs is often a potential source of residues. Examples of extra-label drug usage include: changing the dosage administered from the label dosage; changing the route of administration; changing the frequency of use; giving a drug to a different production class of animal; using a drug for an indication not listed on the label; exceeding the volume of drug per injection site; and changing the duration of therapy. Veterinarians should exercise their best medical judgement when selecting a specific product for a specific medical condition. Some products specifically are not allowed to be used in an extra-label fashion. The Food Animal Residue Avoidance Databank ([www.farad.org](http://www.farad.org)) is a great source of information on the administration and withdrawal times for many medications.

Start the conversation now with your clients and together, we can reduce or prevent residues in milk and meat. Ultimately, creating consumer confidence benefits the entire agriculture industry.
UPDATE ON ANIMAL DISEASE TRACEABILITY IN VIRGINIA

Over the past five years, we have improved the traceability of livestock in Virginia significantly. In cooperation with livestock producers, market owners, private veterinarians, Virginia Cooperative Extension and USDA, the Office of Veterinary Services (OVS) continues to promote the use of official livestock identification devices, improve our capabilities to collect and manage animal health information and revise outdated regulations to better support the livestock industry in Virginia. The following accomplishments are worthy of noting and are the result of cooperative efforts by all segments of the livestock industry:

• Distribution of more than 776,000 official identification tags over the last six years – 38 percent of which are electronic;
• Development of electronic test and vaccination forms – approximately 40 percent of all regulatory animal tests and vaccinations are now submitted electronically;
• Operation of 17 electronic data collection systems at livestock markets that capture almost 20,000 movement records each year;
• Increased use of electronic tags and readers at livestock shows and sales and by private practitioners;
• Implementation of a comprehensive animal health information management system that facilitates the sharing of regulatory information when needed with federal and state partners.

One area that needs improvement is capturing animal movement information from Interstate Certificates of Veterinary Inspection (ICVIs). OVS receives more than 30,000 ICVIs each year, almost all of which are in paper form. Working with paper forms is time-consuming for staff to process this information and respond to questions about animal movements to and from other states. This potentially can interfere with interstate trade, expose producers and their animals to unnecessary regulatory oversight and certainly slows our ability to respond to potential animal disease events.

A number of electronic ICVI solutions are available or under development that veterinarians and their clients should be aware of. OVS is developing an online animal entry permit system that will allow veterinarians in other states to input all required information for importing livestock to Virginia. This will make information on livestock movements immediately available and greatly improve our ability to respond to disease events. Once fully operational, we envision this system also supporting the creation of export ICVIs for Virginia practitioners. More information on this system will be forthcoming.

In addition to the Virginia permit system, commercial applications are available that create electronic ICVIs and send information to state officials. Practitioners may want to explore a relatively new application called AgConnect mCVI (iad.tamu.edu/agconnect/mobile-applications/agconnect-mcvii that runs on mobile devices such as smartphones and tablets, and solutions offered by GlobalVetLink (globalvetlink.com) that have been available for a few years. These applications share data with state officials, which is a requirement for any electronic solution.

These solutions will not make paper ICVIs obsolete in the near future, but increased submission of electronic information will improve the quality of regulatory information, enhance disease traceability and should make the movement of animals in interstate commerce more efficient over time. Please contact the OVS for additional information or guidance, or to provide suggestions that would help capture and handle the data in electronic form.
Traditionally a disease found in the Western United States, Trichomoniasis (Trich) has steadily spread eastward in recent years. In an effort to prevent the introduction and spread of the disease in Virginia, VDACS worked with the Virginia Cattlemen’s Association, the Virginia Dairymen’s Association and others to develop and propose a new import requirement for Trich testing of breeding bulls before entry into Virginia. The proposed regulation was initiated by the Board of Agriculture and Consumer Services in December 2017 and will proceed through the regulatory process over the next year or so.

If approved, the amended regulation would require that all bulls 18 months of age and older and all non-virgin bulls younger than 18 months of age have a negative polymerase chain reaction (PCR) test result for Bovine Trichomoniasis within 30 days prior to entry into Virginia, unless consigned directly to a slaughter establishment. It is important to note that this is not the gold standard for a definitive Trich diagnosis, but is a reasonable requirement to provide some assurance of the bull’s status prior to import.

Trich is a venereal disease of cattle caused by the protozoan *Trichomonas foetus*. Virginia’s cowherd is a naïve population, with only two diagnoses out of the approximately 2,000 bulls tested in the last four years through our state animal health lab system. This disease is often introduced by a single animal, most frequently an infected bull. The protozoan is transmitted during the breeding process with infection rates of 30-60 percent after a single service. Unlike other diseases, Trich offers few clinical signs until the disease is well established. Bulls are asymptomatic with no changes in semen quality or physical condition.

Often the first sign of a problem is the multiple number of heat cycles in cows exposed to a bull. The protozoa causes early embryonic death leading to repeated services, extended breeding and subsequent calving season. Cows may exhibit a slight vaginal discharge associated with embryonic/fetal death. Cows will typically develop immunity and shed the infection after repeated heat cycles. Unfortunately, the immunity is short lived and the cows are prone to re-infection. Significant economic losses can result due to lighter late calves and cows culled that are not bred back, especially in controlled time limited breeding seasons. In herds that do not pregnancy check or calve year round, infection goes undetected for extended periods. A commercially available vaccine may be effective in the cowherd, but is ineffective in males. Bulls, especially mature ones, remain lifelong carriers, despite a variety of innovative treatments. Culling and slaughter of infected bulls is recommended.

A positive diagnosis is most often accomplished by testing the bull. Testing is more accurate if the bull is given two weeks of sexual rest prior to testing to allow for buildup of organisms in the crypts of the bull’s prepuce. Currently a single negative PCR on a preputial wash/scraping is accepted as diagnostic for most state import requirements. Samples for PCR must be submitted in a proprietary culture media known as InPouch TF, which is a small bag containing a growth and transport media that also inhibits the growth of yeast, mold and bacteria. InPouch bags ($6.25/pouch) are available from the Regional Animal Health Laboratories (RAHL) and should be ordered and received prior to collecting the preputial washes. Once samples are collected from the bull and inoculated into the InPouch, it is critical that handling and shipping instructions are followed. Cost for an individual PCR test is $44, and results are typically available in 3-10 days. PCR samples can also be pooled for screening within the laboratory. Bulls must be tested individually and a separate InPouch submitted for each bull; up to five animals can then be pooled and tested for $75. If the pool is positive each bull will be individually tested.

All states west and a few states east of the Mississippi have Trich entry requirements. When advising clients, be sure to check with the state of destination for specific testing requirements and any statements required on the ICVI. As with all diseases, it is much easier to prevent than to treat and eradicate once it is here.
In early fall of 2017, a Virginia veterinarian received a call from a beef producer with a previously healthy, adult beef cow acutely affected with severe lethargy, weakness and anemia. Other animals in the herd had been similarly affected and recently the producer found several deceased animals, often near a water source. The producer administered steroids to one affected adult female several days prior to the call with no success and that animal died the same night. After a farm call, the veterinarian highly suspected anaplasmosis. He collected serum and the affected cow anecdotally improved with oxytetracycline therapy. The serum was negative for anaplasmosis but positive for a *Theileria species* (spp). Follow up testing of the index animal and a representative sample of herd mates resulted in confirmation by the National Veterinary Services Laboratory (NVSL) of *Theileria buffeli/orientalis/sergenti* complex, a previously undiagnosed blood borne parasite in Virginia. Most *Theileria spp.* are confined to regions in Asia and Africa associated with the geographical distribution of their vector ticks, except for the worldwide distribution of the apathogenic *T. buffeli*. The parasite has also been found in Australia. This disease represents no threat to human health. Only four other cases in the United States have been documented to date and in all of those cases animals died. In contrast, the cow diagnosed in Virginia has recovered and is still living.

*Theileriae* are obligate intracellular protozoan parasites. *Theileria* sporozoites are transmitted to susceptible animals in the saliva of ixodid ticks. The ear is the preferred feeding site of the tick. Usually, a tick must be attached for 48–72 hours before it becomes infective; however, if environmental temperatures are high, infective sporozoites can develop in ticks and may enter the host within hours of attachment. The incubation period is 8–25 days. Signs in infected cattle are those associated with severe anemia and include lethargy, lack of appetite and exercise intolerance. Clinical signs often resemble anaplasmosis and include pale mucous membranes or jaundice as the periplasms precipitate destruction of red blood cells. Fever is common throughout the course of infection. Anorexia develops and there can be severe dyspnea due to pulmonary edema. The mortality rate for theileriosis can vary from three to nearly 90 percent.

State and federal regulatory officials are working with subject matter experts to investigate this new finding and assess the significance. In the meantime, if you suspect you may have a similar case, please contact VDACS and minimize the handling of affected cattle, as this may exacerbate the clinical signs. Methods to reduce tick exposure or tick populations are highly recommended.
TUBERCULOSIS ACCREDITATION PROGRAM

Currently, there are 25 Tuberculosis (TB) accredited cattle and bison herds in Virginia. Virginia is a TB free state and encourages participation in the accreditation program to maintain that status. Animals in an accredited herd are often not required to be individually tested for TB prior to their interstate movement, sale, or exhibition.

To enroll a bovine or bison herd, the whole herd must pass two consecutive official TB tests of all eligible animals within a 9-15 month interval. All animals must be bona fide members of the herd and each animal’s official identification (a RFID or metal ear tag issued by USDA or VDACS) must be recorded on the TB test chart.

To maintain the accredited herd status, all eligible animals 24 months of age and older must pass a negative test biennially, within 21-27 months of the accreditation approval anniversary date. Herd members must not have commingled with animals from non-accredited herds at any time since the last TB herd test. Cattle and bison added to an existing TB accredited herd must test negative within 60 days prior to entering the premises of the receiving accredited herd, unless those additional animals come from a TB accredited herd in a TB Free State. All cattle and bison tested for reaccreditation that were not included in the previous herd test must be identified in the left column of the TB test charts (VS form 6-22 and 6-22B) as (NA) natural additions or (PA) purchased additions. Records must be maintained to verify that the purchased animals were TB tested and all records, including TB test charts and interstate certificates of veterinary inspection, are subject to examination by federal or state animal health officials. Animals that have been retagged since the last TB herd test, regardless of the reason, must be identified in the left column of the TB test charts as RT. TB accredited herds that do not adhere to the USDA Bovine TB Eradication Uniform Methods and Rules are subject to having the TB accreditation status revoked.

Please contact the Office of Veterinary Services if you have any questions about the accreditation program.

ANIMAL LABORATORY SYSTEM NEW PAYMENT METHOD

New in 2018, clients at VDACS’ four animal health laboratories have the option of viewing and paying their invoices online. Clients who visit the VDACS online payment portal at portal.vdacs.virginia.gov can view all outstanding invoices on their account, securely pay in full all invoices less than 60 days past due, pay by e-Check/ACH (no additional fee) or pay using a major credit card (VISA, MC, Discover) for an additional $3 convenience fee per bill. Contact VDACS_PAYMENT_PORTAL@vdacs.virginia.gov for assistance or answers to your questions regarding this new service.
For general questions or communication, please email us at 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

**Dr. Carolynn Bissett, Program Manager**  
Office of Veterinary Services  
804.786.2483 • carolynn.bissett@vdacs.virginia.gov

**Dr. Joe Garvin, Program Manager**  
Office of Laboratory Services  
804.221.2543 • joseph.garvin@vdacs.virginia.gov

**Dr. Don Hopson, Harrisonburg Regional Supervisor**  
540.209.9120 • donald.hopson@vdacs.virginia.gov

**Dr. Bruce Bowman, Harrisonburg Field Veterinarian**  
540.209.9120 • bruce.bowman@vdacs.virginia.gov

**Dr. Abby Sage, Richmond Staff Veterinarian**  
804.786.2483 • abby.sage@vdacs.virginia.gov

**Dr. Tom Lavelle, Wytheville Regional Supervisor**  
276.228.5501 • tom.lavelle@vdacs.virginia.gov

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