



University of Tennessee, Knoxville
**TRACE: Tennessee Research and Creative
Exchange**

Faculty Publications and Other Works -- Large
Animal Clinical Sciences

Veterinary Medicine -- Faculty Publications and
Other Works

April 2010

Farm Focus - Spring 2010

Brian K. Whitlock

University of Tennessee - Knoxville, bwhitloc@utk.edu

Matt Welborn

University of Tennessee - Knoxville

Maria Prado

University of Tennessee - Knoxville

Amy Plummer

University of Tennessee - Knoxville

Follow this and additional works at: https://trace.tennessee.edu/utk_largpubs



Part of the [Animal Sciences Commons](#), [Endocrinology Commons](#), [Large or Food Animal and Equine Medicine Commons](#), [Other Neuroscience and Neurobiology Commons](#), [Reproductive and Urinary Physiology Commons](#), and the [Veterinary Physiology Commons](#)

Recommended Citation

Whitlock, Brian K.; Welborn, Matt; Prado, Maria; and Plummer, Amy, "Farm Focus - Spring 2010" (2010). *Faculty Publications and Other Works -- Large Animal Clinical Sciences*.
https://trace.tennessee.edu/utk_largpubs/19

This is brought to you for free and open access by the Veterinary Medicine -- Faculty Publications and Other Works at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Faculty Publications and Other Works -- Large Animal Clinical Sciences by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

Farm Focus

YOUR FIELD SERVICE AUTHORITY

A Straight Shot

Yearly immunization - along with good management - is integral to keeping your equine friend in good health. A small upfront investment may prevent illness, potential lost time, money, performance, and even life.

Vaccination guidelines are as varied as the horses themselves; the needs of the athlete who travels to shows every week are different than the older horse enjoying retirement. We will work with you to design an individualized program to fit the needs of your horse.

CORE VACCINES:

Tetanus- Tetanus is caused by the bacterial organism, *Clostridium tetani*. Horses are susceptible to tetanus and likely to be exposed, and infection is always fatal. Tetanus toxoid is probably the most important vaccine for your horse. It should be administered yearly and boosted if your horse has surgery or is wounded more than six months following its last vaccination.

Eastern and Western Equine Encephalitides (EEE and WEE)- Mosquitoes transfer these neurologic diseases from horse to horse. It is best to vaccinate in the spring prior to mosquito season, and yearly vaccination is usually sufficient. We recommend twice yearly administration in areas with higher frequency of disease or year-round mosquitoes.

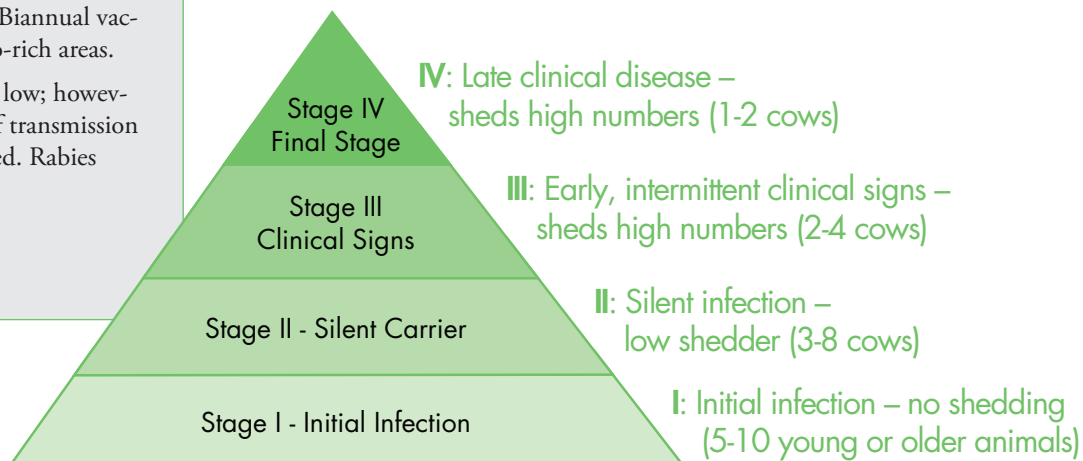
West Nile Virus (WNV)- West Nile Virus is the most common cause of viral encephalitis in horses in the United States. About 1 in 3 equine infections can result in death, and 40% of survivors show residual signs of disease. Since mosquitoes transmit WNV, yearly immunization in the spring is recommended. Biannual vaccination may be recommended in mosquito-rich areas.

Rabies- The incidence of rabies in horses is low; however, disease is always fatal, and there is risk of transmission to people; therefore, vaccination is warranted. Rabies vaccine should be given yearly.

Continued inside...

JOHNE'S DISEASE: A SILENT SLAYER!

Johne's disease, also known as Paratuberculosis, is a bacterial condition primarily affecting ruminants that is characterized by chronic wasting. Cattle usually become infected at an early age by ingesting contaminated feces or colostrum with the Johne's bacteria but do not show clinical signs until later in life (greater than 2 years of age). Once infected, the bacterium grows very slowly inside the cow's intestinal cells. The cow's immune system reacts to the presence of the bacterium and induces thickening of the intestines, impairing the cow's ability to absorb nutrients. As the infection progresses, cows may show clinical signs such as weight loss and projectile diarrhea in spite of good appetite. Sooner or later, the animal continues to deteriorate and dies. We don't know with certainty how prevalent this condition is in beef herds, but recent statistics have shown it to be around 7%. In dairy herds, the prevalence approaches 22%. Due to the chronicity of this condition, farmers might not realize that they have a problem in their herds; however, for each cow that is showing clinical signs, there are about 10 to 15 cows with subclinical infection (Fig. 1). Currently, there is no treatment for this disease, and control can be extremely difficult and costly. Losses associated with Johne's disease include premature culling, decreased milk production (5-25%), and decreased market value due to poor condition. The best way to avoid Johne's in your herd is to prevent the introduction of infected animals, institute good biosecurity measures (to prevent young stock from being exposed to the Johne's bacteria by limiting exposure to manure from adult cattle and providing good colostrum management), and identify of positive animals. The gold standard test for detecting the Johne's bacteria is to culture the cow feces in the lab, but because this bacterium grows very slowly, it can take up to 12 weeks to get the results. There are other tests that measure antibodies in the blood or the presence of the bacterium in the feces. However these tests can be costly, and accuracy depends on the stage of infection. Fortunately, one of the researchers at UT has developed a more accurate test. We will keep you informed.





Rhinopneumonitis and Influenza-

These two viruses cause respiratory disease and are highly contagious with direct contact. Rhinopneumonitis (or Equine Herpesvirus) also causes abortion in pregnant mares. Horses that travel frequently, have direct exposure to other horses, live in barns where other animals come and go frequently, or have contact with broodmares should be vaccinated. Yearly vaccination is sufficient in low risk animals, but twice or three times a year administration is recommended for animals with greater risk. Pregnant mares should be given a Rhinopneumonitis vaccine at 5, 7, and 9 months of gestation.

Strangles- This highly-contagious respiratory infection is more common in young animals but can affect horses of any age. Intra-nasal vaccine provides the best immunity and is recommended. While there are more side effects as compared to other vaccines, and some are serious, its use is warranted in certain high-risk animals. This vaccine should not be given at the same time as any other injections.

Potomac Horse Fever- This vaccine produces a variable response. Anecdotal reports suggest it decreases severity of disease when it does occur, but there are no studies supporting this theory. Because Potomac Horse Fever is endemic in East Tennessee, vaccination may be justifiable. The combination Rabies/Potomac Horse Fever vaccine makes this more convenient and economical.

Equine Viral Arteritis, Botulism, Rotavirus- These vaccines are used in high-risk situations. We would be glad to discuss these with you if you think your horse may require protection.

GOT BULL?

BULL BREEDING SOUNDNESS EXAMINATIONS

One of the primary goals of cow-calf production is to get as many cows as possible pregnant in a breeding season. Such a concentrated calving pattern enables efficient animal management; appropriate timing of husbandry procedures, parasite control treatments, and vaccinations; accurate nutritional management; and numerous options for marketing those calves.

While breeding success depends on the reproductive health of both the cow and the bull, the importance of the bull's health is often underestimated. A cow is responsible for half the genetic material in only one calf each year, while the bull is responsible for half the genetic material in several calves, making his fertility much more important to the overall herd than that of any individual cow.

Structurally - and reproductively-sound mature bulls can successfully mate as many as 50 cows in a confined breeding season. Despite this, the typical bull to cow ratio is much lower. The prevalence of subfertile or infertile bulls has been estimated to be at least 20 percent. Producers who use bulls with unknown ability to successfully mate cows may experience bull failure. Subsequently, they tend to guard against future problems by increasing the number of bulls they use, thereby increasing their production costs. An alternative strategy is to place more selection pressure on the bulls through a bull breeding soundness examination (BBSE) so that failure is less likely to be a risk.

The BBSE evaluates the entire bull, not just his reproductive system. Because bulls detect cows in heat by observing mounting behavior, hindrances to vision will diminish a bull's ability to be a successful breeder. Also, during the breeding season, bulls will travel many miles per day, and sound feet and legs are essential for mating success.

Your veterinarian evaluates both the external and internal components of the reproductive tract. This includes measuring scrotal circumference, which is an accurate predictor of testicular size and is directly related to the total mass of sperm-producing tissue. Scrotal circumference is also an accurate forecaster of age at puberty for bulls and their male offspring. Therefore, you can improve your bull's fertility by selecting for those with larger scrotal circumferences. Your veterinarian also evaluates the accessory sex glands and penis during rectal palpation and erection, respectively.

The next step in a BBSE is semen evaluation. Samples are examined under a microscope to determine the amount of motility and sperm cell

structural correctness. Motility determination serves as an indication of both the percentage of sperm that are alive and the percentage that are correctly made. If sperm cells are alive, but malformed, motility is often negatively affected.

The most popular time to test bulls is 30 to 60 days before the breeding season, giving the producer the greatest assurance of the bulls' reproductive soundness during the breeding season. This time frame also allows bulls with questionable fertility sufficient time to potentially recover for retesting before the breeding season. Testing too late could lead to difficulty in replacing unsatisfactory animals.

Complete breeding soundness examinations of bulls and their semen require good facilities and equipment. Appropriate chutes, semen collection equipment, slide warmers, microscopes, and stains are necessary. With proper planning, the exam may be done either at a veterinary clinic or on the farm.

Bull fertility is an important component of high pregnancy percentages and herd productivity. Evaluating the breeding soundness of bulls is an often neglected management practice. Some producers may believe that bulls previously proven fertile are of sound breeding value for the rest of their lives, but this is untrue. Bulls that do not settle their share of cows early in the breeding season contribute to reproductive inefficiency and increase the producer's costs. Although not foolproof, many bull problems can be avoided by performing bull breeding soundness examinations before the breeding season. And that's no bull.



DO I HAVE A COLICKY HORSE?!

Part II: When the veterinarian arrives.

In our last Farm Focus, we highlighted the clinical signs of colic and what you can do as an owner waiting for your veterinarian to arrive. But what will your veterinarian likely do upon arrival at your farm? A colic work-up starts with a physical exam. The horses' heart rate, respiratory rate, temperature, and gut sounds are all important to diagnosing the severity of the colic and possible causes of the colic episode. Elevated heart rates can be due to pain and/or dehydration and shock. Gut sounds, made from the intestine moving food through the bowel, are the noises that can be heard by listening to the horse's abdomen. Most colicking horses have decreased or absent gut sounds because their intestines are not moving properly. The majority of colic cases have normal temperatures, so if the horse has a fever it indicates a slightly different set of possible causes.

If the horse is in extreme pain, the veterinarian may have to administer pain medications at the beginning of the exam in order to be able to safely evaluate the horse. The veterinarian will monitor the effectiveness of the medicine since unresponsiveness to pain medications is a sign of severe colic. In that case, the veterinarian will likely recommend taking the horse to a veterinary hospital quickly.

As veterinarians, our goal is to determine whether the cause of the colic (severe or otherwise) is likely from the small or large intestine and if it can be treated medically or if surgery is required. Horses cannot vomit; fluid build-up in the stomach can cause it to rupture, and that is fatal to the horse. In order to determine if fluid is building up in the horse's stomach, your veterinarian will pass a tube through the nose down the esophagus into the horse's stomach (this procedure is called nasogastric intubation). Water is used to create a siphon (similar to siphoning gas out of a car gas tank). Excessive fluid (called "reflux") indicates that the horse does not have proper intestinal motility. Your veterinarian will not be able to give oral medication to assist in treating the colic episode if the horse is refluxing, because the medications will not be absorbed.

Rectal exams are another procedure used to diagnose the cause of colic. During this procedure, the veterinarian uses his or her hand to feel the intestines through the rectum. There are inherent risks with

this procedure for both the horse and the veterinarian, so there are times safety issues prevent this exam. The exam may indicate that the cause of the colic is a problem with the small or large intestine and may help further characterize the severity of the colic. An abdominal ultrasound exam may be performed depending on the severity of the colic. The ultrasound will give the veterinarian a glimpse of the intestine that is out of reach of the rectal exam. Distended small intestine (small intestine that is not moving) is an example of a lesion that may be identified on ultrasound exam.

Based on the severity of the colic, your veterinarian may perform an abdominocentesis. During this test, a small sample of the fluid from the horse's abdomen is obtained, usually with a needle placed through the skin on the lowest part of the abdomen. This fluid may indicate that there is intestine that has damaged blood supply, which is a serious problem.

Using various procedures, your veterinarian can make a diagnosis as to the likely cause of the colic, and depending on the diagnosis, will recommend specific therapy to relieve the horse's symptoms. If the majority of the procedures' results are normal, your horse may only need an anti-inflammatory medication and some oral mineral oil to relieve their signs. If the horse has severe pain and significant findings on a diagnostic test, your veterinarian may recommend taking your horse to a hospital for intravenous fluids and/or possible surgery.

Having a colicking horse can be a very stressful and emotional time for horse owners. Being prepared and knowing what to expect can make this a less stressful situation. Our third colic article will address specific medical and surgical treatments that a horse may receive in a veterinary hospital.

Future articles will discuss different types of colic and some of the treatments available.



Left to right: Brian Whitlock DVM, PhD, DACT, Matt Welborn DVM, MPH, DACVPM, Maria E Prado MV, PhD, DACVIM, Amy Plummer DVM, DACVS

EXPANDED SERVICE OFFERED MID-JUNE!

The UT Equine Hospital is now accepting appointments for high-field Magnetic Resonance Imaging (MRI). This powerful tool provides high-quality images that will help the clinician provide a more targeted therapeutic treatment plan for your horse. Contact Dr. Jim Blackford at (865) 755-8235 for details.

FREE POST-MORTEM ANIMAL DIAGNOSTICS FOR CATTLE, SHEEP, AND GOATS

The Tennessee Dept. of Agriculture (TDA) and UTCVM have partnered to expand free post-mortem animal diagnostics to cattle, sheep, and goat farmers in East Tennessee. TDA will reimburse the veterinary college for necropsy (animal autopsy) examinations of cattle, sheep, and goats. For more information, contact us at (865) 974-5673.

*Clients are responsible for transporting the carcasses to the appropriate location. **For information regarding on-site necropsies, please call (865) 974-8387.*

HOT ISSUES!

Field Services

EQUINE AND FOOD ANIMALS:

- **Herd Health/Production Medicine:** Blood Work, Deworming, Health Papers, Herd Disease Investigations, Nutrition Evaluations and Recommendations, Vaccination, etc.
- **Field Restraint:** Anesthesia, Portable Chute, etc.
- **Field Medicine & Surgery:** Gastrointestinal, Musculoskeletal, Reproductive, Wound Management, etc.
- **Reproduction:** Artificial Insemination, Assess Fetal Sex, Breeding Soundness Exams, Pregnancy Exams (Including Ultrasound), etc.
- **24 Hour Emergency Care:** Birthing Assistance, Choke, Colic, Down Animal, Founder, Wounds, etc.

EQUINE-SPECIFIC SERVICES:

- **Dental Work** (Including Mechanical Teeth Float)
- **Endoscopy, Insurance Exams**
- **Lameness Workup** (Including Digital X-Ray Capabilities)
- **Pre-Purchase Exams**
- **Acupuncture**

CALL **865-974-8387** FOR ALL YOUR LARGE ANIMAL NEEDS

*\$\$ Special limited time UT \$\$
matching gift opportunity*

UT will match, dollar-for-dollar, gifts
and pledges of at least \$12,500
to the College of Veterinary Medicine.

The funds will be used to help construct and equip the Large Animal
Hospital renovation and expansion. Help us build a new large
animal hospital to better serve you and the animal industries of TN.

Please contact Claire Eldridge, UTCVM Development Director,
at (865) 974-6477 or celdridge@utk.edu

Pledges must be paid in full by March 15, 2011, to qualify.

DO YOU KNOWS

The TN Dept. of Agriculture has released the 2010 application for the
Tennessee Agricultural Enhancement Program.

This year's program offers many cost share opportunities: the livestock
equipment, cattle genetics, hay storage, feed storage, grain storage, and
producer diversification opportunities, to name a few. To date, TAEP has
provided cost share funds for more than 15,500 projects.

Something to note: the Cattle Genetics cost share opportunity has
expanded; also, Fruits and Vegetables have been moved to the priority
area under Producer Diversification.

**Farmers can qualify for 35 or 50 percent cost share, ranging
from \$1,200 to \$15,000, depending on the project.**

Applications are available at most farm agencies including USDA Farm
Service Agency, UT Extension, and Farm Bureau offices, as well as most
farm supply stores. Producers can get important messages and updates
on the program by calling 1-800-342-8206.

For more information or to download an application, visit
www.TN.gov/agriculture/enhancement.

Spring 2010

UT College of Veterinary Medicine

Farm Focus

YOUR FIELD SERVICE AUTHORITY


*UTCVM's field service team brings you "FARM FOCUS":
information to help you provide the best care for your animals.*

You can visit www.vet.utk.edu/departments/LACS for this and other information.

To receive "FARM FOCUS" electronically, please visit our site to sign up.

THE UNIVERSITY of
TENNESSEE 
INSTITUTE of
AGRICULTURE
COLLEGE of
VETERINARY MEDICINE

CALL 865-974-8387 FOR ALL
YOUR LARGE ANIMAL NEEDS

THE UNIVERSITY of TENNESSEE 
College of Veterinary Medicine
Large Animal Clinical Sciences
2407 River Drive, Room C222
Knoxville, TN 37996