



As the world gets progressively smaller, we find ourselves at increased risk of exposure to diseases from far and wide. In this issue we will review the results of last year's experience with West Nile virus and also provide you with a summary of plans to be implemented this year to better protect you and your horses from this virus. Since the news is packed with information about foot-and-mouth disease, a virus that does not infect horses, we decided a review of the West Nile virus and what it might mean to you and your equine endeavors this year, might be helpful. As we look forward to the beginning of a new competitive season, we'll provide a few recommendations to make this one a healthy and happy one! For additional information about these or other diseases, contact your veterinarian, call us anytime at 609-292-3965, or log onto the Department's website at [www.state.nj.us/agriculture](http://www.state.nj.us/agriculture). Suggestions and comments as always are welcome!

## Keeping Your Horses Free From Disease

As the competitive season gets underway statewide, attention to recommended good management practices can help you minimize the risk of introducing or spreading disease.

Even as you consider which events you will participate in this year, review your procedures for keeping your horses healthy before and after they return. With the typical size of farms and stables in New Jersey, it can be difficult, if not impossible, to keep separate barns or pastures solely for the purpose of isolating horses that return from shows for two weeks – they may be at the next show by then! However, there are things you can and should do, with some modification for your unique situation.

Remember, you must have a health certificate to enter most shows (valid for 30 days for show purposes and, signed by an accredited, licensed veterinarian) and a current negative Coggins test (valid for two years traveling within New Jersey, although individual shows may require more recent testing). In addition:

1. If any of your horses demonstrate unusual signs of illness after the health certificate is signed, but before you're scheduled to depart, call your veterinarian for advice about your plans. Many times a second visit is not warranted, and the symptomatic treatment your vet suggests will alleviate the illness.
2. As the mosquito season approaches, familiarize yourself with the initial signs of West Nile virus (WNV) infection. Symptoms can be mild but prompt treatment may be life-saving. **Stablemates of horses with WNV infections are not considered at increased risk of illness and cannot transmit the virus! Therefore, you will be able to send your other horses to shows, even if a WNV case is identified at your barn.**
3. Keep non-traveling horses as far away as possible from those regularly traveling to events because of the risk of bringing other infections back home to the farm.

Pregnant mares, foals, and geriatric or chronically ill horses should be isolated from the show stock when possible.

4. Don't share equipment between these groups of horses.
5. When working with your horses, always move from the resident horses to the transient group. Clean the bottom of your boots between these groups (disinfection would be optimal, but only if you regularly clean the disinfection equipment and restock solutions used).
6. Thoroughly clean and disinfect trailers between uses.
7. Don't forget to take your own buckets, feed, hay and other equipment with you on the road.

Fair/show management is responsible for ensuring that animals to be exhibited enter the grounds with appropriate health documentation and that all animals are eligible for exhibition. Any animals showing obvious clinical signs of warts, ringworm, foot rot, parasites, pink eye, draining abscesses or open wounds must not be exhibited or allowed to remain on the fair/show grounds. **A veterinary examination on the farm of origin prior to the fair/show is critical to reduce the chance for introduction and spread of disease.**

NJDA recommends that all fairs/shows arrange for potential veterinary medical assistance for the duration of the exhibition. Exhibitors should be made aware of the local veterinarians willing to provide medical attention for the animals being exhibited. If necessary, NJDA's Division of Animal Health will provide assistance to fair/show managers in identifying local practitioners, prior to animal arrival. ☺





# Foot and Mouth Disease Continued from page 1

## What Does Infection Look Like? What Are the Symptoms?

FMD virus causes blisters in the animal's mouth, on the snout or muzzle, on the teats, and on the feet, usually with an accompanying fever. When these blisters rupture, they can become very painful, resulting in slobbering, drooling, reluctance to eat or drink, mastitis and reduced milk production and lameness. Occasionally, the heart muscle is damaged and acute deaths ensue. Infected animals may take up to six months to recover. This prolonged convalescence causes severe losses in production and health, cripples animal industries, and severely inhibits travel and tourism. While there have been outbreaks with up to 50 percent mortality, FMD is not considered a particularly lethal disease with death rates rarely exceeding two percent in adults and 20 percent in young stock.

## How is FMD Diagnosed?

FMD can only be diagnosed by laboratory testing. Due to the extremely contagious nature of the FMD virus, laboratory tests for it are only permitted at the federal government's facility on Plum Island, NY. At this facility, extraordinary precautions are routinely followed to ensure that the virus does not escape into the environment.

## How is FMD Spread?

Outbreaks are often started when animals eat infected feed. The virus may be spread in a number of ways, but the most common is by direct contact with infected animals. The virus spreads rapidly through the herd, then moves throughout the region or country on equipment, in trucks, on the wind (virus can travel 25-40 miles this way), or by contacting carrier animals, including people. Up to 50 % of infected animals may remain carriers of the disease for at least six months. Virus could be recov-

ered from human nasal secretions for up to 36 hours after working with infected cattle. FMD rapidly spreads within a herd and usually 100% of susceptible animals succumb to the disease.

## What About Vaccination?

There are many strains and subtypes of the virus, making effective vaccination extremely difficult because little cross-protection exists between serotypes. This is one reason why slaughter, where practical, has been used to control and eradicate the disease. The existing vaccines are generally used in countries formerly free of FMD only after an outbreak has been declared out-of-control. These countries then lose their ability to export all livestock products up to two years after vaccines have been used. Because the vaccine does not prevent or control the virus, the vaccinated animals must still be destroyed once the outbreak is considered under control, because they can still shed the virus and expose other animals to FMD.

## Do Animals Become Immune?

Cattle mount an effective immune response to FMD that lasts up to four years. Swine immunity persists for only seven to eight months. Immunity is relatively specific to the serotype involved in the exposure and new outbreaks with different serotypes can occur at any time.

## Where is FMD Found?

FMD has occurred throughout the world for centuries. Currently only North America, Australia, New Zealand and the Antarctic are free of this virus.

## Where Does FMD Come From?

There are a variety of species that allow the virus to persist or serve to spread the infection, including elephants, capybara,

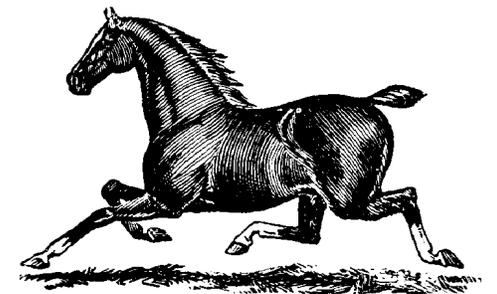
hedgehogs, rodents, birds, and wild ruminants such as deer and water buffalo. These animals may not show clinical signs of illness, but may harbor the virus to allow later spread of the infection to susceptible species. Fortunately, these species are not likely to play a major role in transmission because of lack of contact with susceptible species. Sheep may carry the virus for up to five months while African buffalo may harbor the virus for up to 28 months! Goats may also serve as carriers of the disease.

## Can We Kill the FMD Virus?

FMD is a very stable virus under certain conditions. The virus only survives at a neutral pH; therefore extremely acidic or basic chemicals like vinegar, citric acid, lye, and soda ash are used to kill the virus. Sunlight, boiling, and autoclaving also rapidly destroy the virus.

## What Can I Do to Help Prevent the Introduction of the FMD Virus to this Country?

If you travel to a farm or other infected area and have contact with FMD-infected animals or environments, use disposable coverings over your shoes and clothing (e.g., coveralls); shower well after the visit; expectorate (spit) after the visit and stay away from uninfected livestock for one week. Don't bring any prohibited material back from any foreign country - FMD is not the only foreign disease from which we want to remain free! ☺





## RUTGERS EQUINE RESEARCH UPDATES

# Cook College's NAERIC Project: Win-Win-Win for All!

*By Sarah L. Ralston, VMD, PhD, DACVN, Cook College, Rutgers, the State University of New Jersey, New Brunswick*

**O**ne of the major challenges to pregnant mare urine (PMU) horse producers is how to get their weanlings to markets that appreciate their quality and potential as performance horses. The North American Equine Ranching Information Council (NAERIC) has been helping producers upgrade their foals by providing high-quality Quarterhorse and Thoroughbred stallions to be crossed with the draft mares so commonly used in the industry.

The resultant warmblood foals make excellent sport horses in a wide variety of disciplines but most of the farms are in the northcentral Plains states, a long way from the biggest markets on both coasts. Weanlings transported long distances, especially if sent through auctions, frequently become seriously ill due to the stresses involved in transport and handling.

For the past few years I have been doing research on both weanling nutrition and mitigation of transport stress and so was well aware of the dilemma faced by producers. In the fall of 1999, I initiated a program that combined my research interests and enhanced our equine teaching program at Rutgers in addition to generating a lot of positive publicity for our PMU producers.

Thanks to the program, we've learned a lot in a fairly short time. For example, 5 grams of vitamin C twice a day and 800 IU of vitamin E once a day for five days after prolonged transport seems to reduce the incidence of respiratory disease in previously unhandled, highly-stressed weanlings.

Conversely, it appears that prolonged supplementation of vitamin C in relatively unstressed weanlings may suppress their ability to synthesize vitamin C on their own and may actually adversely affect their ability to respond to a vaccine.

We also found that a little gentling before weaning goes a long way to reducing the stress associated with weaning and prolonged transportation, which in turn results in healthier, happier horses and owners. All this in addition to the fact that the NAERIC foals are wonderful sport horse prospects!

We plan to make this an annual project, expanding our research and numbers as we go. More data on transportation stress, handling and growth will be accumulated each year, eventually providing producers and buyers with better information on how to keep their young animals healthy.

*The yearlings were sold at a benefit auction at Cook College on April 29. For information on the auction results call 732-932-9404 or email [Ralston@aesop.rutgers.edu](mailto:Ralston@aesop.rutgers.edu).*

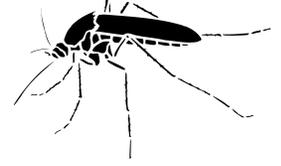
# Coming Soon!

**Fort Dodge has begun testing a West Nile virus vaccine in New Jersey and surrounding states. The company hopes to obtain conditional licensure later this summer.**





# West Nile Virus: Review of 2000, Preview of 2001



**A** total of 63 clinical cases of West Nile virus (WNV) in horses were reported from seven Northeastern states in 2000. The first case occurred in New York on Aug 17 and the last case was reported from Delaware on October 30. Twenty-three of the 63 horses did not survive, a 37% mortality rate.

In New Jersey, 28 horses from 11 counties developed clinical signs of infection throughout the season. An additional 15 horses on the positive farms developed antibodies to the virus without showing any sign of illness. Eight of the 28 horses with clinical signs did not survive the infection. The case mortality rate in New Jersey was 29%.

$$\text{Case mortality rate} = \frac{\text{number of horses that died}}{\text{number horses clinically affected}} \times 100$$

**The breakdown of cases per county in New Jersey was as follows: Atlantic (3), Bergen (1), Burlington (2), Cape May (1), Gloucester (1), Hunterdon (2), Middle-sex (1), Monmouth (10), Ocean (2), Salem (2), and Sussex (3).**

NJDA's Division of Animal Health implemented a plan developed in the spring of 2000 to help identify and diagnose WNV in horses. The Division consulted with veterinarians in more than 100 cases resulting in over 330 laboratory tests in 81 cases and provided field support in 28 case investigations.

With the help of local veterinarians, the Division also retrieved nearly 1,000 blood samples from stablemates of all positive horses as well as from horses on farms where there were no clinical infections. These results, when analyzed with pertinent data collected at the farms, will help identify risk factors that might be modified in the future to provide better protection against WNV infection.

The results of much of this extensive testing and investigation are still being analyzed, but the following information has been extracted from the data:

1. The only current **treatment for this condition is supportive but prompt treatment may be life saving! Call your vet if you suspect that your horse has WNV!**

2. No breed appears more susceptible than any other.
3. Slightly more geldings/stallions than mares were infected.
4. The age range of infected horses was 6 months to 32 years with an average age of just over 13 years.
5. The age range of horses that died was 7 to 32 years with an average age of just over 15.
6. The clinical signs observed by owners and veterinarians included:
  - a. Abnormal use of their hind limbs
  - b. Loss of balance
  - c. Depression
  - d. Apprehension
  - e. Generalized or hind limb muscle weakness
  - f. Muscle twitching
  - g. Falling down
  - h. Inability to rise
  - i. Grinding teeth
  - j. Appear colicky
7. Many horses continued to eat grain while sick, although a few refused to eat anything.
8. As the season progressed, more horses survived infection. We don't have an explanation for this, but it may be that owners became more concerned more quickly, resulting in more rapid treatment by their veterinarians.

9. Elevated temperatures do not occur in most cases (only 25 percent had elevated temperatures).

## What We're Doing in 2001

NJDA will improve its ability to respond to the needs of the equine community and industry by expanding available services for the surveillance, field assistance and diagnosis of WNV infections in horses. Part of the effort includes hiring a veterinarian to oversee the newly established equine neurologic disease unit in the Division of Animal Health. This program will facilitate the flow of information to the public, veterinarians, state and federal agencies, national and international organizations, the pharmaceutical industry and academicians involved in the study and control of WNV.

The Division's laboratory will also provide additional and confirmatory tests that should significantly reduce the time between clinical signs of disease and definitive diagnosis.

NJDA has also been actively supporting efforts to rapidly develop an effective vaccine against WNV. We are cautiously optimistic that a vaccine may be conditionally approved very soon. The Division of Animal Health will cooperate with all efforts to obtain data from field trials and with any other activities that will demonstrate the efficacy of a safe vaccine for our equine residents.

Because WNV has already had an economic impact on our equine industry, NJDA has recommended that the OIE (Office of International Epizooties) develop a scientifically-sound chapter on WNV that can minimize future international equine travel restrictions applicable to the industry in New Jersey

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# West Nile Virus Continued from page 5

and throughout the nation. In New Jersey alone, the \$3.2 billion equine industry includes the United States Equestrian Team; four race tracks hosting 6,500 races annually including the prestigious Hambletonian (the Standardbred equivalent of the Kentucky Derby); 7,600 equine facilities; 24 breed groups; and hundreds of show and equestrian events each year; in addition to the much loved backyard horse.

## Here's What You Can Do To Help Protect Your Horses:

Minimize the mosquito habitat on your property by eliminating any water that stands more than three days:

- Empty or flush water troughs at least every 3 days.
  - Clean gutters, birdbaths, and swimming pools.
  - Monitor low areas on property and tire ruts if water stands there for more than three days, mosquitoes will be able to breed.
  - Remove all old tires from your property – including tire jumps and tires used to hold down tarps.
1. Contact your county mosquito agency for assistance in identifying and treating high-risk areas on your property such as ponds, streams and marshes.
  2. Contact your vet as soon as possible if you observe any of the symptoms described above in your horse... **The only treatment for this condition is supportive but prompt treatment may be life saving! Don't wait!**
  3. Vaccinate your horse for Eastern and Western equine encephalitis (EEE/WEE) and rabies to protect horses from these diseases since they may produce symptoms that can be confused with those of WNV.
  4. Where possible, keep your horses stalled during **dusk** and **dawn** to minimize mosquitoes' feeding on your horses. **This means don't turn your horses out at night, or turn them out only when it is completely dark, ie between 10pm and 4am. The most important months to observe this restriction are August, September, and October.**
  5. On large breeding farms or other facilities where keeping horses stalled at night is not feasible, the horses should be pastured in areas away from standing water and woodlands.
  6. **If you notice mosquitoes biting you or your horse in a particular pasture on your farm, don't use that pasture for turn-out. Likewise, avoid riding in areas where you notice mosquitoes biting.**
  7. Help us understand the disease even more by keeping a record of the infection in your horse. While this will be difficult to do at a time when you are concerned about your horse's health, your observations may lead to additional preventive measures or recommendations to better protect your horses. Include behavioral changes, changes in appetite, daily temperature, first sign of infection, response to supportive treatments, etc., in your notes. We are asking your veterinarians to do the same.

**Remember: All suspect cases of WNV, EEE/WEE or rabies infection in horses must be reported to the Division of Animal Health (609-292-3965) within 24 hours.** 🐾

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