



NEW JERSEY *Horse* HEALTH NEWS

From the New Jersey Department of Agriculture in cooperation with the New Jersey Association of Equine Practitioners
JAMES E. MCGREEVEY, GOVERNOR CHARLES KUPERUS, SECRETARY OF AGRICULTURE

Spring 2002

In This Issue

Strangles	1
West Nile Virus: 2001 Update	2
West Nile Vaccine Approved for Use in Horses	3
Two Equine Rabies Cases Confirmed in New Jersey	4
Rutgers Equine Research Updates: NJDA's New Test Cuts CEM Quarantine Time, Expense	5

STRANGLES

Editor's Note: NJDA's Division of Animal Health received numerous calls about an outbreak of **strangles** statewide during the winter and early spring of 2000. Since **strangles** is not a reportable disease, the Division must rely on information from veterinarians or horse owners about the incidence and distribution of this disease when it occurs.

During outbreaks, the Division performs epidemiological investigations in addition to laboratory testing to monitor the spread of the disease. Resulting information helps mitigate further disease spread and helps control the rumors that always seem to abound during a **strangles** episode.

To provide this type of assistance, we rely on the cooperation of owners and veterinarians to submit laboratory samples and notify us of the health status of affected farms. After the pattern of infection has been established, the Division can give concerned owners in New Jersey and surrounding states an accurate assessment of the risk of disease to their horses.

We hope the information presented here will help horse owners minimize the risk of this important disease to their animals. — N. H.

Strangles is a highly contagious disease caused by the bacterium *Streptococcus equi*. Found throughout the world, **strangles** is considered to be an obligate parasite of equine and now known to survive mostly in moist or wet environments.

Transmission of the bacteria from horse to horse usually involves direct face-to-face contact or exposure of horses to contaminated feed, water, hands, veterinary instruments, grooming tools and twitches. The disease can also be acquired from exposure to a contaminated environment as long as the organism remains viable. However, a dry environment quickly kills the bacteria.

Vaccination can aid in preventing this disease. Consult your veterinarian for recommendations regarding the use and selection of vaccine for your horses.

Strangles is characterized by sudden onset of fever, loss of appetite, painful swallowing and drooling, swelling between the jaw and base of the ear, nasal discharge, cough and abscess

formation. Horses usually develop fevers two to nine days before they become infectious to other horses, making isolation of horses with fevers a potential key to limiting the spread of the disease on a farm.

Although the clinical diagnosis of strangles is fairly straightforward, there are advantages to culturing for the bacteria. Such culturing permits a definitive diagnosis of the disease, and an antibiotic sensitivity test will be performed in the lab to aid in selecting the appropriate antibiotic if your veterinarian determines that it is needed. Antibiotic therapy is usually **not** included in the treatment of strangles because of the inherent risk of developing the generalized form of the disease, known as bastard strangles. Bastard strangles is a more serious, often fatal, disease, compared to the typical case of strangles, which is more of a nuisance than a long-term health threat to the horse. Antibiotics are sometimes used if:

1. the size or location of the abscess becomes life threatening;

Continued on page 6

~ EDITOR ~

Nancy E. Halpern, DVM
Assistant Director
New Jersey

Department of Agriculture
Division of Animal Health
P.O. Box 330

Trenton, New Jersey 08625-0330

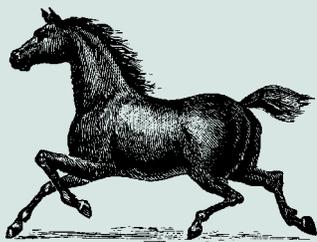
Phone: (609) 292-3965

Fax: (609) 777-8395

E-mail: nancy.halpern@ag.state.nj.us
www.nj.gov/agriculture



This issue of the *New Jersey Horse Health News* continues our current tradition of providing updates about WNV. We expect to see additional WNV infections in NJ and throughout the US in birds, humans and unvaccinated horses, but hope that the WNV vaccine will help protect our vaccinated equine population. In addition to articles about WNV and the vaccine, we have included an article on an all too familiar disease, strangles; and one you may not be as aware of, contagious equine metritis. Finally, please review the rabies article that provides pertinent information about equine rabies prevention and preparedness. Despite the warm, but traumatic fall and winter, we look forward to a peaceful and healthy breeding and show season for our highly valued State animal! ☺



West Nile Virus: 2001 Update

Supported, in part, by a grant from CDC, administered by NJDHSS.

Between August 28 and November 26, 2001, 30 New Jersey horses developed clinical signs of illness from infection with West Nile virus (WNV). Of these, 13 horses were euthanized. Although the number of cases this year was roughly the same as in 2000 (28), the mortality rate escalated to 43 percent this year compared to 29 percent last year. NJDA's Division of Animal Health (DAH) is investigating these cases to determine the cause of the increased mortality rate. This investigation is supported in part with a CDC grant, administered by NJ Department of Health and Social Services (NJDHSS).

This is the second year that New Jersey horses have been significantly affected by this arbovirus, which emerged in the United States in 1999. WNV mushroomed across the country in these two short years. The virus was found in horses as far west as Illinois and in birds as far west as Missouri, and is expected to travel to the Rocky Mountains by the end of 2002. From the handful of equine cases noted in 1999, the number of cases significantly increased to 63 in 2000 and exploded in 2001 with over 650 horses infected with WNV.

The first cases of WNV in New Jersey horses occurred at essentially the same time in both 2000 and 2001 — August 26 in 2000 and August 28 in 2001. However, due to the unusually warm fall in 2001, equine cases persisted until November 26, almost one month later than recorded in 2000.

In all three years equine WNV cases were first identified in or around New York, the horses became infected after the first human cases were reported and continued to be diagnosed well after human cases in the same areas ceased. This information may help pinpoint the mosquito species infecting horses, which may be different from those infecting humans.

All New Jersey counties experienced some degree of WNV activity in both 2000 and 2001, but equine cases occurred in only 11 of 21 counties in 2000, and in 10 of 21 counties in 2001. Monmouth County had the greatest number of equine cases in 2000 (10 cases), but in 2001 was second to Burlington

County (12 cases) with 9 cases. Since Monmouth County has the greatest density of horses in the state, the high incidence of WNV would not be unexpected there.

The first crow death attributed to WNV in 2001 was reported in Burlington County on April 14, 2001. By the end of the mosquito season, the NJDHSS reported an overall increase in WNV activity in the southern half of the state.

Once equine WNV cases are identified, the DAH works closely with county and state mosquito agencies to minimize the risk of infection to other horses and humans in the case area. DAH has recommended the judicious use of chemicals to kill adult mosquitoes in mid-to-late fall in those areas with repeated equine disease incidence.

The division is in the process of obtaining additional data on the incidence of WNV infection in horses throughout New Jersey. Similar studies in 2000 revealed a very low incidence of infection in horses that did not show any outward signs of infection (4%). Now that the virus has been present virtually statewide for two years, it will be helpful to determine how many NJ horses were infected. This information may help point to risk factors that could be modified to decrease that incidence in the future.

It is expected that the recently-released WNV vaccine, available only through veterinarians, will decrease the incidence of disease in vaccinated horses. Additional vaccines are under development, but their availability for farm use is not expected in 2002. In addition to vaccination, the Division continues to recommend practices that minimize the exposure of horses to mosquitoes. ☺

For additional information, contact:

Jennifer Fowler, DVM, Senior Veterinarian,
Division of Animal Health, Phone:
(609) 292-3965, Fax: (609) 777-8395 or

Faye Sorhage, DVM, Coordinator of Veterinary
Public Health, Infectious and Zoonotic
Diseases Program, New Jersey Department of
Health and Senior Services,
Phone: (609) 588-3121, Fax: (609) 631-4863.



West Nile Vaccine Approved for Use in Horses

In August 2001, the USDA Animal and Plant Inspection Service (APHIS) issued a conditional veterinary biological product license for the West Nile virus (WNV) vaccine produced by Fort Dodge Laboratories, Inc. Fort Dodge is the only company to produce the vaccine and complete safety trials and additional procedures required by USDA prior to conditional licensure.

When a company is granted conditional licensure, it must verify the safety of the vaccine, but further investigation to determine efficacy of the product is required to continue after initial distribution. This data must be collected, evaluated and accepted before the vaccine can be labeled as effective against West Nile virus. Fort Dodge is currently in this process of data collection.

In New Jersey, all required procedures to permit statewide distribution of the WNV vaccine, released for distribution on August 1, 2001, were completed immediately, with distribution and use of the vaccine limited to licensed veterinarians. Fort Dodge was required to report all adverse reactions, as well as monthly reports on vaccine distribution, to the State Veterinarian. Approximately one million doses have been distributed throughout the United States since the August 2001 release. As of December 4, 2001, over 35,000 doses of the vaccine had been sold to New Jersey veterinarians and equine practitioners, with few reports of adverse side effects.

The vaccine is made of killed virus particles and consists of a two-dose series given intramuscularly three to six weeks apart. The overall impression of New Jersey's veterinary community is that the WNV vaccine is a safe vaccine.

Preliminary independent antibody testing on vaccinated horses suggests that it may take several weeks after the

booster dose for horses to produce a measurable antibody response. Such a response may be critical for the vaccine to produce the desired results, i.e. to protect the horse against infection. However, until specific testing is performed with vaccinated horses exposed to the virus in a controlled experimental setting, these effects will not be definitively determined.

Prior to the release of the vaccine, there was a great deal of concern by government and industry groups about the effects of vaccination on international travel and trade. In 1999 and 2000, the European Union (EU) and other countries imposed travel restrictions on horses from WNV-infected areas. In November 2001, the EU added a new certification requirement that horses being shipped to the EU, if vaccinated, must have been given the second injection at least 30 days prior to export departure date. This requirement assures that horses will have completed the vaccination schedule prior to being placed in export isolation.

West Nile virus first appeared in the northeastern United States in 1999, baffling public health officials and epidemiologists when it killed birds, horses and humans. Officials are still unsure of how the disease was introduced into this country, but after studying the genetic make-up of many virus samples, they believe that it was a single introductory occurrence.

The virus spreads by the bite of an infected mosquito and is carried by birds. Horses and humans are susceptible to the disease, and several horses and people have died as a result of infection. Since 1999, there has been rapid spread of the disease; by the close of 2001 it had been reported in birds, mosquitoes, humans, or horses in 27 states and Washington, D.C.

The USDA issues conditional licenses to meet emergency situations or under other special circumstances only if the following criteria are met:

1. Licensure is temporary and usually terminates in one year or less.
2. Vaccine is for use by licensed veterinarians only.
3. Distribution in each state is limited to those individuals authorized by the state, and may include additional conditions required by state authorities.
4. Additional testing to determine efficacy and potency must be progressing prior to re-issuance of the license.
5. Labeled statements must indicate that efficacy and potency testing are in progress.
6. The use of trade names with the product is prohibited.

For additional information, contact:

Karen Froberg, VMD, Senior Veterinarian,
Division of Animal Health, Phone:
(609) 292-3965, Fax: (609) 777-8395





CLINICAL SIGNS OF RABIES INFECTION IN HORSES CAN INCLUDE ANY OF THE FOLLOWING:

- Fever
- Lack of appetite
- Lameness
- Colic
- Facial nerve paralysis
- Weakness
- Restlessness, progressing to lack of coordination
- Vocalization
- Drooling
- Aggression
- Paralysis

LAWS RELATED TO SUSPECTED AND CONFIRMED ANIMAL RABIES:

N.J.A.C. 2:2-1.5: Requires any veterinarian or other person with knowledge of the existence or suspected existence of such diseases (including Rabies), within the State to notify the Department of Agriculture without delay, and in any case within 48 hours.

N.J.S.A. 26:4-78 requires any veterinarian or other person with knowledge of an animal suspected of being affected by rabies or being bitten by a known or suspected rabid animal to notify the local health department where the animal is located.

Two Equine Rabies Cases Confirmed in New Jersey

Late last year, two fatal equine rabies cases occurred on a Monmouth County horse farm several weeks after the owner observed a skunk fighting with his dog.

The first case at the beginning of November affected a six-year-old gelding pony. After the farm's veterinarian examined the pony, which was off-feed and colicky, the pony's illness progressed rapidly and he died within hours of the examination. The veterinarian was concerned about the possibility of rabies and asked NJDA's Division of Animal Health to help with laboratory submission and other notifications that are legally required in such cases.

The second case of rabies occurred a month later in a six-year old gelding horse that suffered an acute illness with an extremely high temperature (110°F).

Bite wounds were not observed in either case. Both animals were recent additions on this farm and there was no indication that either the pony or the horse was vaccinated against rabies. In both cases, samples were submitted to the Division's animal health laboratory for processing and then forwarded to the state Public Health and Environmental Laboratories for rabies testing.

The successful collaboration between state and local agencies and the private practitioner, beginning with the laboratory submission of these cases, resulted in the identification of several exposed humans who have undergone post-exposure treatment and of ponies that are being observed under strict confinement.

The Division of Animal Health's field staff assisted local health officers with a

thorough, on-site investigation that included mapping of the property; identifying the location, routine use and movement of equine residents; and recording all potential exposure of human residents and visitors. This investigation provided the framework for additional questioning that provided an accurate assessment of all potential exposure.

The local health department, with assistance from the state Department of Health and Senior Services and the Division of Animal Health, made specific recommendations for human and equine health protection. These were the fifth and sixth cases of equine rabies in New Jersey since 1989. During this period, over 4,300 animal rabies cases, primarily in raccoons, skunks and other wildlife, have been reported in New Jersey. Cats represent 90% of the rabies cases in domestic animals.

Fortunately, rabies in horses, ponies and other equids occurs rarely in New Jersey. However, all cases of rabies are very serious and pose a significant public health threat. Rabies virus causes an acute encephalitis (inflammation of the brain) in all warm-blooded mammals, including humans and horses, and the outcome is almost always fatal (*CDC-Rabies: Natural History*).

The clinical signs (symptoms) of rabies infection in horses are varied and can be misleading and vague, particularly when the horse first becomes ill. A horse infected with the rabies virus may not develop clinical signs indicating central nervous system involvement until the final stages of infection. Further complicating diagnosis, symptoms observed in rabid horses are also observed

Continued on page 5



Equine Rabies

Continued from page 4

in horses suffering from other illnesses. Therefore, expedient veterinary examination is critical and may decrease exposure of humans and other animals to a rabid horse.

Appropriate immunization, performed by a licensed veterinarian, can protect livestock, including horses, from this potentially fatal disease. The New Jersey Association of Equine Practitioners, the American Association of Equine Practitioners and the Division of Animal Health recommend vaccination of horses and other livestock in enzootic areas like the Garden State. The Department of Health and Senior Services recommends vaccination of all barn cats.

Consultation with your veterinarian is the first step to ensuring that proper procedures are followed. ☞

For additional information, contact:

Nancy E. Halpern, DVM,
Assistant Director, Division of Animal Health, Phone: (609) 292-3965,
Fax: (609) 777-8395 or

Colin T. Campbell, DVM, CPM,
Senior Public Health Veterinarian,
Infectious and Zoonotic Diseases Program,
Phone: (609) 588-3121,
Fax: (609) 631-4863

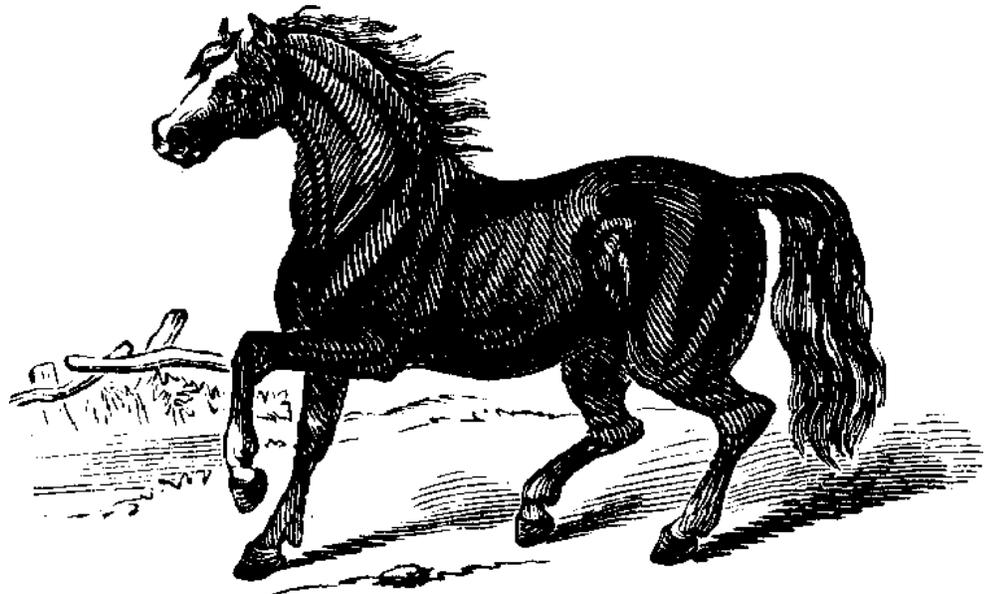
RUTGERS EQUINE RESEARCH UPDATES NJDA's New Test Cuts CEM Quarantine Time, Expense

By Denise Dicarolo Emery, Research Scientist III, NJDA; Dayle Kravcak, Supervising Lab Technician, NJDA; Frank P. Petersen Ph.D., Associate Director, Immunoreagent and Assay Development, The Nutraceuticals Institute, Cook College, Rutgers the State University.

NJDA's Division of Animal Health has developed a new test to detect contagious equine metritis (CEM), a highly contagious venereal disease caused by the bacterium *Taylorella equigenitalis*. The test, developed in conjunction with Rutgers' Nutraceuticals Institute thanks to funding from the New Jersey Equine Initiative, relies on a monoclonal antibody that is used in a competitive ELISA assay for the detection of serum antibodies to *Taylorella*.

In addition, NJDA staff continue to work on development of a slide test for the presence of antigen that will be faster and more specific than the culturing technique now used. Once these new assays have been validated by the National Veterinary Services Laboratory (NVSL) in Ames, Iowa, the Division will be able to test all samples at the Trenton lab. That local testing capability will minimize the time horses spend at the state's two CEM quarantine facilities and reduce the overall cost of CEM testing for the owner.

CEM, a disease not native to American equine, would have a devastating effect on the horse-breeding industry if it were introduced here, resulting in severe export restrictions. Therefore, to ensure proper identification and treatment of all infected imported horses, stringent controls are enforced when horses are brought in from CEM-positive countries. The controls include quarantine at certified CEM facilities, in addition to the general quarantine, so that the horses can be tested to detect CEM infection or evidence of prior exposure. ☞





STRANGLES

Continued from page 1

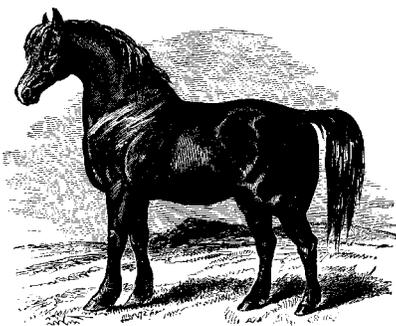
2. vital signs become compromised;
3. owners insist on antibiotic therapy.

Sample submission is extremely important in culturing *S. equi*. Satisfactory specimens include throat culture, trans-tracheal wash, pus from an abscess, nasal discharge or nasal flushes. Swabs are of value in transporting the material to the lab, however, *Streptococcus* is easily dried out during shipment, making it advisable to place swabs in a non-nutritional transport media (Amies, Amies with charcoal, or Stuarts's) and ship them rapidly.

Laboratory identification will take between 48 and 72 hours, while confirmatory tests require an additional 24 hours. Complications arise if other bacteria have contaminated the specimen and purification is necessary, so it is extremely important to take a clean specimen, inoculate the appropriate transport media and get it to the lab as soon as possible to prevent overgrowth.

Treatment of uncomplicated **strangles** typically involves monitoring the vital signs, temperature, heart rate and respiratory rate, and treating symptomatically. Your veterinarian should be called in as soon as you suspect strangles, as the treatment of each horse will be based on his/her exam.

Often, veterinarians will accelerate abscess rupture to minimize the horse's discomfort during this phase, but extreme care must be taken to minimize spread of this extremely infectious material to susceptible horses. Once ruptured, abscesses must be flushed regularly to speed healing. ➤



Strangles: *disease summary*

By Dr. John Timoney, Maxwell H. Gluck Equine Research Center, University of Kentucky College of Agriculture, Department of Veterinary Science.

- A mean incubation period of 10 to 12 days following exposure to an infected horse.
- Onset of fever two to nine days before nasal shedding is detectable.
- Nasal shedding of *S. equi* for two to three weeks after onset of clinical signs.
- Nasal shedding beyond three weeks in only a small percentage (<2) of affected horses.
- Easy overnight presumptive detection of *S. equi* by culture of nasal swabs, washes or abscesses on Columbia CNA blood agar. A PCR method recently developed at the Gluck Equine Research Center allows detection of *S. equi* DNA in six hours.
- Infection of individual horses in a group is not simultaneous; *i.e.*, some horses do not become infected until a variable number of days after the initial case.
- Antibiotic therapy is often ineffective in eliminating *S. equi* and so there is a high probability of relapse following cessation of therapy.
- Protective immune responses are poor in antibiotic-treated horses.

Strangles: *control plan*

(AAEP Proceedings, Vol.45, 1999)

- Isolate newly-introduced animals for two weeks and observe for signs of strangles or other diseases.
- Immediately quarantine affected or suspect cases.
- Obtain rectal temperatures of in-contact horses twice daily for two to three weeks.
- Separate horses with temperature elevations of 1.5° F or greater.
- Culture recovered horses on three occasions at four- to seven-day intervals following abscess drainage to determine cessation of shedding. Culture specimens should be obtained from nasal swabs or washes.
- Prophylactic administration of an antibiotic such as *penicillin G* should be utilized only in severely affected horses and as recommended by the attending veterinarian.

For additional information on Strangles, contact:

Denise Dicarolo Emery, Research Scientist III, Division of Animal Health or

Alan Belson, VMD, Senior Veterinarian, Division of Animal Health,

Phone: (609) 292-3965, Fax: (609) 777-8395