



NEW JERSEY *Horse* HEALTH NEWS

From the New Jersey Department of Agriculture in cooperation with the New Jersey Association of Equine Practitioners
CHRISTINE TODD WHITMAN, GOVERNOR ARTHUR R. BROWN, JR., SECRETARY

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HURRICANE FLOYD LESSONS LEARNED

The New Jersey Animal Emergency Preparedness and Response Committee (AEPARC) is made up of veterinarians, emergency management personnel and citizens concerned with animal safety during disaster situations. The committee, formed in 1996 at the urging of the New Jersey Veterinary Medical Association, helps veterinarians work hand-in-hand with personnel in each county office of emergency management to coordinate animal issues during a disaster. Hurricane Floyd was the first statewide challenge for the committee and it was a real learning experience!

Nine horses from one stable drowned as a result of flash flooding during the storm and several equine facilities had to be evacuated due to rising flood waters and/or lack of electrical power. The Horse Park of New Jersey could not be used as an emergency shelter because it was already housing 256 dressage horses. Moreover, the Horse Park lost power and electric generators had to be brought in to ensure adequate water availability for the horses. Elsewhere, a dairy goat shed was blown apart due to high winds and the goats were evacuated to foster homes while laboratory animal facility emergency plans had to be implemented. Water trucks were needed to supply thirsty rodents with potable water

whose water supply had become contaminated.

The fate of personal pets became a major problem as many people went to work on the day of the hurricane, leaving their pets at home as usual. By day's end these people were unable to return to their homes because of the raging storm and their pets had to fend for themselves. Some survived but, sadly, many did not. Because emergency shelters in many communities do not allow pets to enter for perceived public health and safety reasons, many people endangered their own lives by ignoring evacuation orders rather than abandon their pets. National guardsmen, emergency workers and volunteers rescued over one hundred pets in the aftermath of the hurricane but advance planning by pet owners could have saved many more lives.

One thing was made perfectly clear during this disaster: HAVING A DISASTER ACTION PLAN FOR YOURSELVES AND YOUR ANIMALS WILL IMPROVE THE CHANCES THAT ALL OF YOU HAVE TO MAKE IT THROUGH A DISASTER SAFELY! ☺

~ EDITOR ~

Nancy E. Halpern, DVM
New Jersey Department
of Agriculture
Division of Animal Health
P.O. Box 330
Trenton, New Jersey 08625-0330
Phone: (609) 984-2251
Fax: (609) 633-2550
email: aghhalp@ag.state.nj.us



This issue will address the appearance of a completely new disease to horses in the United States, West Nile virus, as well as a disease syndrome, gastric ulcers, that has probably been affecting horses for years, but has just recently been identified due to advances in technology which permit greater disease diagnosis capabilities. The focus on these diseases as well as the information included about emergency preparedness are intended to be used as references for horse owners and enthusiasts, as they consult with their veterinarians to determine the best course of action to prevent illness or injury to their horses. Although new diseases and certainly disasters are never welcomed events, we can at least take this opportunity to learn from our experiences, provide you with the most up to date information about these events, and help protect the celebrated animal of New Jersey—the horse!

Updates on the West Nile Virus

Q. What is West Nile Virus and where did it come from?

A. West Nile virus is a cousin to the more familiar equine encephalitis viruses that cause encephalitis in horses: Eastern, Western and Venezuelan. Prior to the summer of 1999, West Nile virus was not present in the Western Hemisphere but it has been identified in previous outbreaks in Africa, western Asia, the Middle East, and the Mediterranean region of Europe.

Q. Who is affected by the virus?

A. Mosquitoes carry the virus, which infect birds or mammals when they take a blood meal. The mammals are considered to be accidental hosts, and it appears that humans and horses are most likely to become ill from this infection. Birds normally do not become sick when bitten, but, in the recent outbreak, thousands of birds, primarily crows, died. The severe and unexpected death of crows may have occurred because the birds had no immunity to this new virus.

Q. How will this affect my horses?

A. If an infected mosquito bites your horses they may or may not become infected. If they are infected, they may or may not become sick. We suspect that many more horses became infected during this past outbreak than developed any overt sign of illness.

Q. What are the clinical signs?

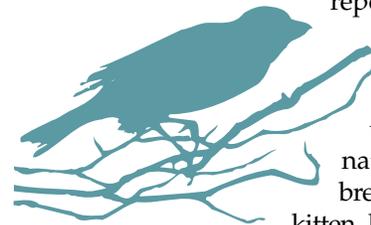
A. If they do become sick, horses may have very non-specific clinical signs, including malaise, lethargy and anorexia, or they may develop serious signs involving the nervous system, including stumbling, lack of coordination, weakness of limbs, convulsions, circling, hyper-excitability, partial paralysis, paralysis, coma or death. From the limited information we have, approximately 44% of horses with severe clinical signs may die from the infection.

Q. What is the treatment?

A. There is no specific treatment for this virus. Your veterinarian should be contacted as soon as there is any indication that your horse is not well. Supportive care, especially when given early in the course of the disease, can have very beneficial results.

Q. Will any of my other animals be at risk?

A. Although potentially any mammal that can be bitten by a mosquito could become infected, there have been few reports of other animals developing illness from this virus in natural outbreaks. One stray kitten, living in a mosquito infested environment in New Jersey, did become infected and was euthanized because of the severity of the subsequent illness. In general, however, pets are not considered to be at risk.



Q. Is there a vaccine?

A. There is no vaccine currently available to protect against this virus in any species. The vaccines available for Eastern, Western and Venezuelan equine encephalitis will not protect horses against West Nile virus infection. The USDA has allowed research and development of a West Nile virus vaccine. If developed and approved, a vaccine would not be available by this summer.

Q. Is there anything I can do to prevent the disease in my horses?

A. There are a number of preventive measures that can be used to protect horses and other animals from exposure to the virus. These involve decreasing their exposure to mosquitoes. See box on page 6.



Equine Gastric Ulcer Syndrome

Horses are susceptible to gastric (stomach) ulcers, just like humans. Although in humans stomach ulcers have been linked to the presence of a bacteria (*Helicobacter pylori*) in the stomach, ulcers in performance horses have been linked to the stress of training while ulcers in foals seem to be linked to their youth.

Up to 93% of racehorses and 57% of foals had some degree of stomach ulceration

Since the late 1980s, the availability and use of three-meter endoscopes (a long fiberoptic camera that allows the operator to see inside of the stomach) by university researchers has made it possible to identify ulcers and study the resulting clinical illness. Results of these studies indicate that, of those examined.

Not all ulcer-affected animals showed clinical signs of illness, however. Of those animals that were truly “sick” because of ulcers, medical management and feeding practices were carefully monitored. As a result, veterinarians are now better able to identify equine gastric ulcer syndrome and make appropriate management and medication recommendations for their patients.

Ulcers in the Adult Horse

Stomach acid appears to be the underlying cause of equine ulcers: high levels of acid cause damage to the lining of the stomach. What causes the level of acid in the horse stomach to rise to damaging levels? In the adult horse, it appears that the stress of training and non-pasture feeding practices may cause higher than normal levels of stomach acid.

Researchers have found that intermittent periods of feed deprivation can induce damage to the lining of the horse stomach within hours to days, as a result of stomach acidity. Feeding of concentrates (oats, grain, pellets),

decreased roughage, increased training, and serious illnesses can all contribute to the development of stomach ulcers in the mature horse. Remarkably, Dr. Michael J. Murray, Associate Professor, Va.-Md. Regional College of Veterinary Medicine in Leesburg, Va., has found that horses turned out onto pasture full-time, typically, have no gastric lesions.

Horses with gastric ulcers may not show any clinical signs of disease. The worse the damage caused by ulcers, however, the better chance that a horse owner will notice some clinical signs that may indicate the presence of ulcers including

- Colic
- Poor appetite
- Decreased performance
- Dullness
- Poor body condition
- Teeth grinding
- Salivation
- Attitude changes

A definitive diagnosis of stomach ulcers in a mature horse may be determined visually by your veterinarian, using a three-meter endoscope. Unfortunately, this is a very expensive diagnostic tool and may be available only at a teaching hospital. More commonly, practitioners will diagnose a case of stomach ulcers based on the horse’s clinical signs, after eliminating other possible diseases. Then, appropriate drug therapy will be started; resolution of the clinical signs indicates that the presumptive diagnosis was correct.

When possible, medical treatment will also be combined with management changes to decrease stress on the horse. For example, performance horses may have to discontinue training and pasture rest may be prescribed to facilitate healing.

Medical treatment of stomach ulcers was made easier in March, 1999 with

the introduction of GastroGard™, a new FDA-approved prescription drug specifically for use in horses. GastroGard™ is a paste that can be given orally to horses and foals as young as four weeks of age. Its active ingredient, omeprazole, the leading anti-ulcer medication worldwide for humans, works by shutting down acid production in the stomach. Stomach acid cannot reach high levels because the acid the stomach pumps become disabled.

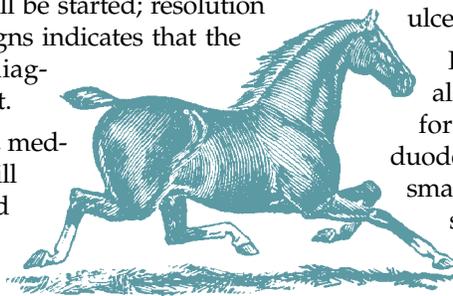
When prescribed by veterinarians, this medication can be conveniently administered once daily for about four weeks to treat ulcers. For prevention of the recurrence of ulcers, GastroGard™ may then be administered at a half-dose for an additional four weeks. For horses that cannot be removed from a training program, this treatment and prevention program for stomach ulcers may make all the difference in a horse’s athletic career.

Ulcers in Foals

Approximately 50% of all foals evaluated endoscopically had stomach ulcers during their first month of life. In most foals, these ulcers do not cause any illness and heal spontaneously, but they may result in clinical disease, especially if the foal becomes sick with some other disease such as influenza or parasites. In fact, studies have shown that sick foals are more likely to have gastric ulcers than normal foals.

Foals close to weaning age also appear to be candidates for developing ulcers in the duodenum (the beginning of the small intestine as it leaves the stomach). Duodenal ulcers appear to encourage the development of stomach ulcers, perhaps due to less emptying of the stomach as well as to inflammation of the esophagus from acid reflux from the stomach.

The combination of duodenal ulcers and stomach ulcers in young foals may result in significant blood loss and, in





Coming Soon!

Rutgers Equine Research Updates

Scientists at Rutgers University support the equine industry of New Jersey through research projects and outreach programs as part of their land-grant school mission. During the Equine Research Update on November 20, 1999 Dr Karyn Malinowski presented plans to launch a state of the art facility to further enhance ongoing studies at the college which have already added important knowledge to the equine industry in New Jersey, and beyond. Your support for the proposed regionwide Equine Science Center of Excellence will be pivotal for the success of this project. Following is a synopsis of one of the newest research projects underway at the college. Contact Karyn Malinowski, professor of equine science, for more information at 732/932-9419 or malinowski@aesop.rutgers.edu.

Horse Pasture Research

There are approximately 81,000 acres of horse pasture and 49,000 horses in New Jersey. Horse property owners continually request information from Rutgers Cooperative Extension to help them improve the productivity, persistence, and appearance of their pastures. Because very little information exists evaluating current horse pasture recommendations, a horse pasture site-assessment was conducted in the spring and summer of 1999 on 40 horse pastures in central New Jersey. The specific objectives of the study were to determine the effectiveness of current horse pasture recommendations and to identify areas for future research. The results of our site-assessment indicate that current horse pasture recommendations regarding pasture mixtures are not consistent with the species we identified in the 40 pastures we studied. Consequently, pasture mix recommendations need to be updated to take into account the type of

pasture management practice and to eliminate species that do not tolerate frequent grazing and are slow to establish. Improving species selection and making site-specific recommendations based on management practice can dramatically improve pastures. We also discovered that soil phosphorus concentrations exceeded above optimum levels in 74% of the pastures studied. Our findings indicate that horse property owners can save money on phosphorus fertilizer that is not necessary for optimal plant growth and may be harmful to the environment. Additional horse pasture work is currently being proposed, and upon receipt of additional funds, new research will focus on management practices to increase pasture productivity, persistence, and appearance throughout the pasture season in New Jersey. *For more information, contact Jeremy W. Singer, at 732/932-9711 or singer@aesop.rutgers.edu*

1 The Annual Horse Management Seminar, presented by Rutgers Cooperative Extension, in conjunction with the New Jersey Horse Council and the New Jersey Department of Agriculture, returns on Sunday, February 20, 2000 from 8:00 am – 5:00 pm at the Cook College Campus Center, New Brunswick. Attendees may register in advance (\$50 adults, \$35 students) or at the door (\$60 adults, \$45 students).

This day-long seminar for horse owners, breeders, riders and trainers will cover basic horse management topics including horse parasites, gastric ulcers, equine behavior, nutrition and dispute resolution in the horse industry.

For more seminar information contact the Cook College Office of Continuing Professional Education at 732/932-9271.

2 This Summer the New Jersey Horse Health News will feature an article on equine influenza, the leading cause of viral upper respiratory disease in horses. Did you know that a new way to protect your horse from this disease has been developed and is now available from your veterinarian? HESKA Corporation's Flu Avert I.N. is an innovative intranasal influenza vaccine that protects your horse from equine flu for up to six months with just a single application in one nostril. Look for the article in the next issue of NJ Horse Health News and ask your veterinarian for more information about Flu Avert I.N.





Here are some guidelines to help you develop a disaster plan for your horses:

Continued from page 1

PLAN—PREPARED

- Take a careful look at your property and identify the best place for your animals in each type of disaster you can foresee, e.g., high ground for flooding.
- Check for alternate water sources. During a power outage, automatic watering systems and pumps will fail.
- Have enough fresh water and hay on hand for 48 to 72 hours
- Make arrangements made in advance in case you have to evacuate. Find evacuation routes and host sites before you need them and map out alternate routes in case the planned route is inaccessible.
- Permanently identify each animal by tattoo, microchip, brand, photograph and or drawing.
- On each halter, place a permanent tag with your name and phone number and the animal's name.
- Be sure all vaccinations and medical records are in writing and up to date. At a minimum, each horse should have current Coggins documentation.
- Keep trailers and vans well maintained, full of fuel and ready to move at all times.

PRACTICE YOUR PLAN

Acclimate your horses to trailers and vans and to unusual clothing you might wear during a disaster.

Take your animals to the predetermined location to familiarize yourself with the route.

Develop a priority list of which animals to save if not all can be saved.

Keep your disaster insurance coverage current on your property and animals.

WHEN DISASTER STRIKES

Remain CALM and FOLLOW your plan.

LISTEN to the Emergency Broadcast System station on your portable radio for information about how to locate horse and livestock care providers offering services during the disaster.

If you have an emergency, call your local office of emergency management and tell the operator you would like the call dispatched to an individual handling animal emergencies. Due to the newness of the AEPARC committee, the operator may be unaware of the County Veterinary Coordinator, so be persistent!! For livestock- and equine-related emer-



For a pamphlet containing guidelines on helping your pets or livestock survive a disaster, contact the NJ Division of Animal Health at (609) 292-3965 or download the information from :

<http://www.state.nj.us/agriculture/pets.htm>

or

<http://www.state.nj.us/agriculture/livestok.htm>.

gencies, you should also call the NJ Department of Agriculture call 609-292-3965.

If you leave home, take your animals' health records with you.

If you evacuate and take your animals with you, take all your records, your emergency kit and sufficient hay and water for a minimum 48-hour period. **CALL AHEAD TO MAKE SURE YOUR EMERGENCY LOCATION IS STILL AVAILABLE.**

If you must leave your animals at home, leave them in a safe place with enough water for the length of time you expect to be gone.

For more information, contact AC Welsch, DVM at (609) 259-8387. ☺

Prepare an emergency kit consisting of:

- plastic trash barrel with lid
- water bucket
- leg wraps
- fire-resistant non-nylon leads and halters
- sharp knife
- first aid items
- portable radio and extra batteries
- flashlight
- wire cutters
- tarpaulins
- Lime and bleach



Ulcer Syndrome

Continued from page 2

severe cases, ulcers may actually perforate the stomach wall. Perforation of the stomach wall creates a life-threatening situation through blood loss and infection.

The diagnosis of ulcer in foals can be made by endoscopic examination, using a smaller endoscope than is needed to examine the adult horse. Because of the foal's smaller size, other diagnostic tools may be used including x-rays, ultrasound and abdominal fluid aspiration. Once the diagnosis of ulcers is made in a foal, treatment with GastroGard™ and/or antacids is started immediately to decrease the level of acid in the, increase stomach emptying, decrease pain, and encourage nursing. The faster the foal gets up and starts eating on its own, the better the prognosis.

Summary

Because the prevalence of equine gastric ulcer syndrome has only recently been determined, many horses may have gone undiagnosed with this disease in the past. Awareness of this common disorder will help owners and trainers to recognize the possible clinical signs caused by stomach ulcers so that they can obtain veterinary services before the syndrome becomes too severe. Research has shown a great deal of variation from horse to horse, both in the disease process and in its response to treatment. It may be necessary to try various combinations of medical and husbandry management in order to find the right treatment for a horse or foal diagnosed with equine gastric ulcer syndrome. ↩

Clinical signs of stomach or duodenal ulcers in foals may include:

- Diarrhea
- Intermittent colic
- Teeth grinding
- Fever
- Laying on the back
- Salivation
- Interrupted nursing
- Rough hair coat
- Poor growth
- Pendulous abdomen
- Blood in feces



Updates on the West Nile Virus

Continued from page 3

Q. Will this be a problem for horses in New Jersey in the future?

A. It is not yet known if this virus can survive the winter in our area, or if it will return in the spring with migrant birds. Research is underway to answer these and other questions, including how far in the United States will the virus spread during the winter months, whether birds infected with the virus will return to the same area, whether these birds still infect mosquitoes, and whether there are any other sources for infection in mosquitoes. Until these questions and others are answered, it is best to use all preventive precautions in the spring so that we can minimize the effects of the virus if it does return.

It is significant that in New Jersey, where ongoing mosquito control measures are enforced by most counties, there were no cases of infection in humans or horses, despite the identification of virus in dead crows in 16 New Jersey counties. The control of mosquito populations throughout the entire season (spring to late fall) is recommended for optimal results. New Jersey plans to increase its vigilant mosquito control programs next year.

Q. When would we expect to see horses affected again if it returns?

A. The viruses usually require a period of time to build up in their hosts and vectors (transmitting species) before they are observed in their accidental hosts (mammals). However, most reported outbreaks of West Nile virus have occurred from August through October. Other causes of viral encephalitis are also most prevalent during this period. ↩

Decreasing Exposure to Mosquitoes

- Remember that mosquitoes need standing water to complete their life cycle so control or eliminate mosquito breeding sites — areas of standing water — such as old tires, buckets, tin cans, jars, broken toys, and other water-catching devices.
- Change birdbaths and wading pools frequently.
- Clean gutters and cover containers holding water.
- Horses pastured for 24 hours a day appear to be at greatest risk for infection so house horses indoors from dusk to dawn, the mosquitoes' feeding periods.
- Use mechanical barriers such as horse sheets and fly masks on the animals and adequate screens [mesh size 16 x 16 or 14 x 18] on windows and doors.
- Use chemical barriers such as bug repellents on horses, horse sheets, stalls, and handlers to decrease exposure. Apply following labeled directions.
- Mow pastures and fields regularly.