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Potomac Horse Fever

Potomac Horse Fever (PHF) is an uncommonly common diarrhea disease of horses typically occurring in the warm weather months of middle to late summer, [May to November range]. We call the disease uncommonly common because risk to individual horses is minimal from year to year, but many horses are susceptible to contracting PHF and our Delaware equine veterinarians report clinical cases of PHF yearly. Occasionally the bacterium like microorganism responsible for causing the disease, *Neorickettsia risticii,* will manifest itself in regional disease outbreaks in groups of horses. These are typically horses pastured in areas near rivers, streams, swamps, or irrigated pastures. Potomac Horse Fever was first diagnosed in 1979 along the Potomac River in the state of Maryland and is now known to occur in 43 states within the United States.

The responsible bacteria-like microorganism for causing PHF is actually not really a bacterium; it is grouped in a family of microorganisms called *Rickettsiae* that phylogenetically occupy a position between bacteria and viruses. Rocky Mountain spotted fever, a disease of humans and dogs, is another disease caused by a rickettsial microorganism. Rickettsiae are similar to bacteria in that they are killed by antibiotics where as viruses are not. Antibiotic sensitivity is good news for our equine PHF patients.

Neorickettsia risticii lives within a fluke [a flatworm] that itself [that is the fluke-flatworm] lives within an aquatic or water-loving snail. So we have the PHF *risticii* living within a fluke and the fluke living within a water loving snail. During warm months of summer, the flukes initiate their reproductive cycle by releasing their immature flukes from the snails into the surrounding water. These immature flukes [called cercariae] with the *risticii* microorganism living in them can be directly swallowed by a horse drinking the contaminated water. But more commonly, these PHF *risticii* contaminated immature flukes are picked up by aquatic insects such as caddisflies, mayflies, damselflies, or dragonflies which carry the PHF *risticii* to grazing horses. Horses will accidentally eat these insects dead or alive while they graze. Bats and barn swallows may also eat the infected insects and contaminate horse feed sources through their droppings. After a horse is infected with the PHF organism, the *risticii* can be transmitted from an infected horse to a susceptible horse.

The disease caused by *N. risticii* can be mild to life threatening. Most infected horses will run a fever which may or may not be detected as many horses seem to be just mildly affected by the organism. In horses that actually get sick from the PHF *risticii*, about 60%- 80% will get diarrhea. Diarrhea can range from a loose “cow pie” to a watery consistency. These are the horses that require immediate veterinary attention as endotoxemia with life threatening laminitis

may quickly ensue. About 40% of horses showing the sign of diarrhea will eventually suffer from laminitis.

Diagnosis of PHF is based upon a combination of clinical signs, season of the year, and other cases confirmed in your local; but a definitive diagnosis requires laboratory confirmation. PHF is easily confused with salmonellosis, another diarrhea disease of horses; but PHF is also similar to other GI syndromes of horses. The indistinguishable character of diarrhea disease in horses makes veterinary laboratory confirmation essential.
The good news about PHF is that with early recognition and therapy, the disease is medically very responsive. Horses with PHF can be successfully treated with the antibiotic oxytetracycline administered intravenously; most horses show a marked improvement within 12-24 hours. A warning however: oxytetracycline antibiotic therapy can potentate salmonellosis making veterinary laboratory confirmation of PHF extremely important. Careful, medically intensive attention will be required in the medical management and prevention of PHF's secondary complications such as dehydration, endotoxemia, and laminitis.

Prevention of PHF focuses on minimizing horse contact to infection by limiting or preventing horses from ingesting aquatic insects; and limiting horses' access to freshwater streams, ponds, and irrigated pastures especially during warmer months. Additionally, one would not want to permit horses sick with PHF to be near well horses. Turning the lights off in your barn at night has the effect of preventing the attracting of insects that may be carrying PHF infection to your horse. There is a vaccine available, but the current vaccine does not provide a high level of prevention. Even though the vaccine may not completely prevent PHF, it does appear to lessen the severity of the disease. If your horses are in an endemic area or in the event that PHF is diagnosed on your farm or immediate neighborhood, vaccination is definitely recommended. Your veterinarian can help with the decision to recommend PHF vaccination.