



The National Farm and Facility Level Biosecurity Standard for the Equine Sector is available [here](#).



Mayfly



Caddisfly



Dragonfly



Damselfly

\*Molecular Analysis of *Neorickettsia risticii*, the Trematode-borne Agent of Potomac Horse Fever, Culture Isolated from a Canadian Horse. Xiong Q, Bekebrede H, Sharma P, Arroyo LG, Baird JD, Rikihisa Y. Appl Environ Microbiol. 2016 Jul 29.

## Bats, Birds, Insects and Snails- A Recipe for Potomac Horse Fever (PHF) (Equine Neorickettsiosis)

Potomac Horse Fever (PHF) is a serious disease of horses caused by the bacterium *Neorickettsia risticii* (*N. risticii*). Infected horses often develop a fever which may be missed, poor appetite diarrhea, and sometimes laminitis. Mares may abort between 5 and 7 months of pregnancy. Horses may die from bacterial toxins released in their blood stream due to damage to their intestinal tract, or are euthanized due to acute laminitis.

The way a horse becomes infected with the bacterium can be complex and is not completely understood. It is thought that horses are naturally infected when they ingest aquatic insects such as mayflies, caddisflies, dragonflies and/or damselflies that are infected with a parasite called a fluke which, in turn, is infected with the bacterium *N. risticii*. Horses ingest the insects through grazing, eating hay contaminated with these insects or drinking the insects in water buckets or troughs. After ingestion of the insect, *N. risticii* is released from the immature fluke and replicates in the cells lining the horse's colon, in white cells within the tissue and in blood cells called monocytes. The infection within the intestinal cells usually leads to diarrhea and the release of bacterial endotoxins initiates a sequence of events progressing to laminitis.

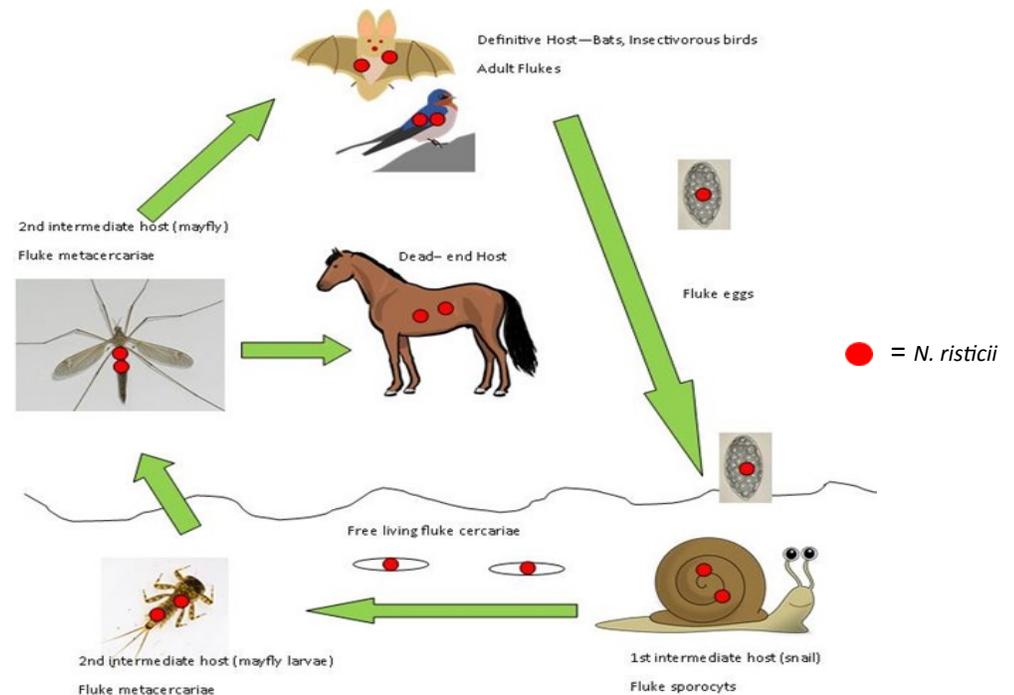


Diagram adapted from Vaughan et al. *Advances in Parasitology* 2012; 79, 253-91

Veterinarians typically diagnose PHF by sending in blood and/or manure samples to the laboratory for DNA testing.

Treatment for the disease should be initiated as soon as it is suspected. An antibiotic called oxytetracycline is the treatment of choice but should only be administered as directed by a veterinarian. Other supportive treatments such as intravenous fluid therapy and anti-inflammatories may also be required.

A vaccine targeting *N. risticii* is available in Ontario for the prevention of PHF. Vaccination may reduce the severity of clinical signs in some areas, however, vaccine failure has also been reported and may be due, in part, to the presence of different strains of *N. risticii*. A novel strain of *N. risticii* has recently been identified from an infected Ontario horse. It is distinct from, but closely related to, American Midwest strains.\*