Africa Horse Sickness

Disease Name: African Horse Sickness (AHS)

Disease Type: Insect-borne virus (*Orvivirus*)

Transmission: Vector-borne. The virus is transmitted by infected biting insects, with midges (*Culicoides* spp.) being the primary vector. A horse affected with AHS is not contagious and there is no horse to horse transmission other than by midges transferring the virus from an affected horse.

Frequency: Currently, AHS is not present in North or South America and is considered a foreign animal or transboundary disease. Suspected cases must be reported to state and federal animal health officials**.** AHS occurs regularly in southern African countries, but the virus has also occasionally extended to countries in North Africa, the Middle East, the Arabian Peninsula, southwest Asia, the Mediterranean region and recently Thailand.

Incubation period: The incubation period is usually 7-14 days, although it can be as short as 2 days or even less with the peracute form (rapid progression) of the disease.

Carrier status: There is no evidence to indicate the existence of the carrier state in recovered animals. Experimentally, AHS can be transmitted between horses by injection of blood or organ suspensions, especially when administered by the intravenous route.

Shedding period: There is no known shedding of the AHS virus.

Severity: Severity of the disease varies among members of the family Equidae. Horses and mules are most susceptible, experiencing severe disease and very high case-fatality rates (> 90%). European and Asian donkeys are less susceptible, with mortality rates of 5-10%. African donkeys and zebras are least susceptible, rarely experiencing significant disease or mortality.

Clinical signs and symptoms: Four clinical manifestations of AHS have been described.

Pulmonary Form ("Dunkop")

- Acute to peracute form of the disease affecting the lungs
- Foals are particularly susceptible when protective maternal antibodies wane after 3 months of age
- Fever up to 41° C (106°F), accompanied by depression, profuse sweating, inflammation of the conjunctivae, difficulty breathing (dyspnea), coughing, copious frothy discharge from the nostrils
- Onset of dyspnea is very sudden
- Disease progression may last hours to several days after onset of clinical signs
- Case-fatality rate is up to 95%

Cardiac Form ("Dikkop")

- Subacute form of the disease affecting the heart
- Fever up to 41° C (106°F), depression, swelling around the eyes (edema), small hemorrhages and conjunctival swelling

- Fluid swelling of the head (eyelids, lips, cheeks, and tongue)
- Fluid swelling extending down the neck towards the chest (including neck, thorax, pectorals, and shoulders)
- Dysfunction of the upper airways and esophagus especially in cases with severe swelling of the head
- Periodic recumbency and colic
- Disease progression lasts 4-8 days after onset of clinical signs
- Case-fatality rate is 50% or greater

Mixed Form

- Combination of lung and cardiac forms of the disease
- Most frequently encountered form of the disease
- Initial evidence of pulmonary involvement followed by face and body swellings
- Acute bouts of coughing; copious, frothy nasal discharge; collapse
- Death from cardiac failure occurs 3-6 days after onset of clinical signs
- Case-fatality rate of 70% or greater

African Horse Sickness Fever

- Mildest (subclinical) form of disease, seldom diagnosed clinically
- Typically seen in partially immune horses and in donkeys and zebras
- Moderate malaise, fever of 40-40.5° C (104-105ºF) lasting one to several days, poor appetite, depression, occasionally mild conjunctivitis, dyspnea, and swelling (edema) of the supraorbital fossa
- Rapid recovery of affected animals; death very rare

Diagnoses: In the early febrile phase of the disease, AHS is impossible to distinguish from other diseases causing a fever. A presumptive diagnosis is only feasible following development of the characteristic clinical signs. Submission of a blood test for the virus is essential to confirm the disease. Federal and state animal health officials must be notified immediately if a case of AHS is suspected. It is their responsibility to complete the investigation and establish the appropriate diagnostic testing and biosecurity protocols.

Treatment: There is no specific treatment for AHS, other than supportive care.

Prognosis: African Horse Sickness is incurable.

Prevention: A critical first step in the control of AHS is to expedite confirmation of the disease and identification of the virus involved. Because an infected horse can serve as a reservoir for midges that could transfer the virus to other horses. A strict quarantine zone needs to be established by authorities with absolute control of movement into and out of the infected area. In the likely event that all infected and exposed equids will be euthanized the carcasses must be disposed of as soon as possible while observing all appropriate biosecurity precautions. A vaccine is available for use where disease is known to be present. Its use in the US is strictly under the control of the USDA.

Biosecurity: Infected horses must be euthanized or quarantined with separation from non-infected horses by at least 200 yards to prevent spread of the disease. All equids must be stabled, preferably in insect-proof housing, from dusk until at least dawn. Insect control measures need to be implemented including destruction of *Culicoides* breeding sites and use of insect repellants and insecticides. The temperature of all equids should be taken twice a day. Any febrile equid(s) should be transferred to separate insect-proof accommodation, pending a decision on whether to euthanize the animal(s) or not.

