

EEE & Emus & Pheasants

Julie D. Helm, DVM
Clemson University
Livestock Poultry Health Programs
POB 102406, Columbia, SC 29224
(803) 788-2260 jhelm@clemson.edu
www.clemson.edu/LPH

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Eastern Equine Encephalitis --

What is it? Eastern Equine Encephalitis (EEE, Sleeping Sickness) is caused by a virus. Like horses, emus and pheasants are also highly susceptible to EEE, with outbreaks also reported in chukars, turkeys and ducks. The virus is spread by biting mosquitoes.

What are the signs of disease?

- **Emus** – Death loss in emus can reach as high as 100% in infected, unvaccinated flocks. Clinical signs include depression, bloody diarrhea, or vomiting blood tinged ingesta. In emus, the bloody diarrhea contains large amounts of virus and could be infectious to other birds and to humans. Care needs to be taken when handling infected emus or transporting them to the diagnostic laboratory for necropsy examination. Protective clothing (dishwashing gloves, eye protection, mask or handkerchief to cover nose and mouth) should be worn when handling sick or dead birds and their excrement, and then all clothing cleaned afterwards. The infected feces should be removed from pens so that other birds don't pick through it.
- **Pheasants** – Signs include nervous disorders with depression, pronounced leg paralysis, torticollis (twisting of the head over the back), tremors and a death loss of 25-100%.
- **Chukars** – Signs include depression with a high death loss of 30-80%.
- **Turkeys** – Signs include drowsiness, incoordination, leg & wing paralysis, with a lower death loss (up to 5%).
- **Ducks** – Signs include paralysis and death loss up to 60%.
- The above signs could also be caused by other types of diseases. Consult your veterinarian or animal diagnostic lab for a proper diagnosis.

How is the disease diagnosed? Through flock history, clinical signs, gross lesions and tissue testing (virus isolation and PCR) performed at a diagnostic lab.

How is the disease transmitted? The virus is transmitted from wild songbird reservoirs to susceptible birds, mammals and humans primarily by mosquitoes, but also blackflies and biting-midges. In emus, the bloody diarrhea contains large amounts of virus and could be infectious to other birds and to humans. Care needs to be taken when handling these infected birds or transporting them to the diagnostic laboratory for necropsy examination. Protective clothing (dishwashing gloves, eye protection, mask or handkerchief to cover nose and mouth) should be worn when handling sick or dead birds and their excrement, and then all clothing cleaned afterwards. The infected feces should be removed from pens so that other birds don't pick through it.

How is the disease treated? There is no treatment for EEE.

How is the disease prevented?

- **Mosquito Control** – Protect yourself and your birds from biting insects. Reduce mosquito breeding and resting areas on your property by reducing or eliminating standing water sources, keep ornamental ponds aerated and stocked with fish, eliminate or mow vegetation in and around pens and along shoreline of ponds and lakes. Fog areas with pesticides effective against mosquitoes. All pesticides must be FDA approved for use on poultry. Owners may check with their county Mosquito Control Officer about local mosquito control plans and activities.
- **Emus** – Currently, there is not a FDA approved vaccine for birds. The equine products have been used (extra label) with success. It is extremely important that the equine products do not include Equine Influenza Virus as part of the combination. Emus vaccinated with Equine Influenza may seroconvert and test positive to Avian Influenza testing, which would result in quarantine. A negative Avian Influenza test is mandatory to cross state lines. Combinations of EEE/WEE/tetanus may be used to vaccinate emus, but it is suggested to use only EEE alone unless the farm has these other disease problems. Vaccine schedule suggestions vary, but in general emus 6 weeks or older should to be vaccinated 2 to 3 times at 3 to 4 week intervals using a full intramuscular dose; and thereafter twice a year. Do not use vaccine derived from chickens. Farms in swampy or marshy areas may need to vaccinate three times a year. Keep records of flocks vaccinated, date, brand of vaccine, lot and serial number. A 45-day withdrawal period for any injections given to ratites is suggested before processing the bird for meat or oil. Since this vaccine is given in the muscle, an abscess may develop and the lesion will be condemned at processing. Using clean needles for each bird will reduce this problem. The use of this or any type of vaccine may cause an anaphylactic or allergic response in a low percentage of birds.
- **Pheasants** – An equine EEE vaccine can be used to protect valuable blood lines, although their efficacy has been questioned. It is extremely important that the equine products do not include Equine Influenza Virus as part of the combination. Do not vaccinate birds younger than 6 weeks old. Follow manufacturer's instructions. Keep records of flocks vaccinated, date, brand of vaccine, lot and serial number.

Can people get infected with EEE? People can also get infected by EEE through biting mosquitoes. Use personal protection (insect repellent, long-sleeved shirts, pants) while working or enjoying the great outdoors. Since infected emus have large amounts of virus in their excrement, it is recommended for owners to take precautions that are listed above.

References: Schwartz, L. Dwight, Grower's Reference of Gamebird Health.
Calnek, B.W., Diseases of Poultry, Tenth Edition.
Tully & Shane, Ratite Management, Medicine and Surgery.
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