

## WEST NILE VIRUS (WNV) SUBMISSION AND TESTING INFORMATION FOR VETERINARIANS

Dr. Todd Cornish and Terry Creekmore  
Wyoming State Veterinary Laboratory  
University of Wyoming  
1174 Snowy Range Road  
Laramie, WY 82070  
(307) 742-6638  
(307) 721-2051 (fax)  
[tcornish@uwyo.edu](mailto:tcornish@uwyo.edu)  
[tcreek@state.wy.us](mailto:tcreek@state.wy.us)

**Please call the laboratory before collecting or submitting any samples for WNV testing – Dr. Todd Cornish will provide advice on proper sampling and submission protocols to obtain the optimal and necessary tissues.**

### AVIAN SAMPLES

1. Dead birds will be tested for WNV at no charge, provided the submitter has called the lab prior to submission. If cause of death (complete examination) is required, routine charges will apply.
2. Targeted (preferred) species for submission – corvids (**crows, ravens, magpies, jays**) – other passerine species (blackbirds, starlings, sparrows, grackles, etc.) also will be accepted with permission from the lab. Raptors (hawks, falcons, eagles, etc.) will be accepted from the Wyoming Game and Fish Department (WGFD) – if these birds are found dead, please contact your local WGFD office.
3. Completed WSVL accession forms are **required** with each submission. Leave the “Submitter” information blank, and please complete the entire “Owner” fields, with a full name, address, telephone number, and county filled out – this is the person to whom results will be released. Under “Clinical History” please indicate “WNV SUSPECT” and provide more details as possible (number of birds dead, specific location found, any unusual circumstances, etc.).
4. We prefer fresh intact bird carcasses. If the carcass is too decomposed then testing will not be performed. All carcasses must be **DOUBLE BAGGED, SEALED**, and shipped in a **SEALED COOLER** with **ICE PACKS** – not wet ice. Accession forms must be attached **OUTSIDE** of the sealed cooler (but inside of a box is fine). Do not send other samples for testing (i.e., biopsies, Coggins tubes, cultures) in the same cooler.
5. Birds will be tested by RT-PCR and immunohistochemistry a minimum of once weekly, starting in June 2002 – positive results will be relayed to the “Owner”

indicated on the accession form, and positive results will be reported to WY state officials.

### **EQUINE SAMPLES**

1. The complete “Guidelines for Investigating Suspect West Nile Virus Cases in Equines” can be found at the USDA website:

**<http://www.aphis.usda.gov/oa/wnv/wnvguide.html>**

This protocol is available at the WSVL – call Dr. Cornish if you would like a copy.

2. When working with horses showing central nervous system signs, always take appropriate precautions to avoid exposure to rabies and other zoonotic diseases. Clinical signs of WNV can mimic those of many other diseases: rabies; equine herpesvirus-1; eastern, western, and Venezuelan equine encephalomyelitis, and equine protozoal myelitis. The **most common clinical signs** associated with WNV infection in horses include: ataxia/gait abnormalities, weakness/paralysis of limbs, recumbency, muscle spasms/fasciculation, and death. Fever is not common.
3. WNV testing will be provided free of charge on horses **IF** this is the only testing requested. If cause of death (complete necropsy and laboratory examination) is requested, routine charges will apply. A completed WSVL accession form must accompany all carcasses or tissues – please list “WNV SUSPECT” under “Clinical History” and **CLEARLY INDICATE** if a complete examination (cause of death) or only WNV testing is requested. All WNV suspects will be tested for rabies before further examinations are completed.
3. **Antemortem** sample collection in suspect equine WNV cases:
  - a. History
    - a. Location – county, closest city, name of premises
    - b. Signalment (age, sex, breed, animal name or ID)
    - c. Onset of clinical signs/description of clinical signs
    - d. Outcome (alive/dead/euthanized)
    - e. Recent TRAVEL HISTORY
    - f. VACCINATION HISTORY (especially EEE/WEE/VEE/WNV/rabies)
  - b. Two serum (red-top) tubes
  - c. One whole blood (purple-top) tube
  - d. If possible/feasible – CSF in one serum (red-top) tube
4. Postmortem (Necropsy) sample collection in suspect equine WNV cases:
  - a. Wear appropriate protective gear (see website above or request protocol)
    - a. At a minimum – double gloves, full coveralls, face shield/goggles, and mask
    - b. Boots that can be disinfected

- c. Minimize use of sharp instruments/needles and dispose in Sharps container
  - d. Do not use mechanical saws to collect brain or spinal cord
  - b. Samples to collect
    - a. Entire **brain** – one half (longitudinal/median section) in formalin, one half fresh (double bagged in Whirlpaks)
    - b.** 4-8 cm long segments each of cervical, thoracic, and lumbar **spinal cord**
      - a. Divide each segment in half – one half in formalin, one half fresh (double bagged in Whirlpaks)
      - b. If you are not familiar with or able to remove the spinal cord from the spinal column, blocks of spinal column containing cord may be cut out and shipped in coolers (~10 cm long each)
    - c. If cause of death (complete examination) is required, submit routine tissues in formalin and fresh
      - a. Heart, lung, liver, spleen, kidney, GI tract, etc.
      - b. Double bag all fresh tissues (Whirlpaks) and seal
5. All samples must be **DOUBLE BAGGED, SEALED**, and shipped in **SEALED COOLERS** with ice packs (not wet ice). Accession forms must be attached **OUTSIDE** of the sealed coolers.
6. An alternative to the above protocol is to have the entire horse carcass transported to the lab. Please call before making arrangements for transportation of WNV suspect carcasses to the lab.
7. Equine samples will be tested weekly by RT-PCR, histopathology, and immunohistochemistry. Confirmation of positive cases will be performed at the USDA National Veterinary Services Laboratories (NVSL, Ames, IA) – NVSL **REQUIRES** the information described under **HISTORY** above, and also requires **ALL** of the samples (fresh and fixed brain, fresh and fixed spinal cord x 3, and serum tube) to confirm WNV infection. Results will be reported to “Submitter” and positive results will be reported to WY state officials.