



## Animal Health Diagnostic Center

College of Veterinary Medicine, Cornell University  
In Partnership with the NYS Dept of Ag & Markets

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### AHDC Contacts

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## AHDC FACT SHEET

# Guidelines for Diagnosis and Sample Collection of Anthrax Suspect Animals

*Bacillus anthracis* is NOT considered endemic in the State of New York. While other regions of North America sporadically experience natural anthrax outbreaks, natural exposure to anthrax is uncommon in the Northeast. The last natural case in NY was identified near a wool mill in upstate NY in the mid 1980's. Questions about environmental samples of suspicious origin should be directed to local law enforcement or public health officials. The NYS Animal Health Diagnostic Center offers anthrax testing on animal samples from suspect cases. Such cases are defined in detail in the [USDA Technical Fact Sheet](#) and relevant excerpts for case definition are below.

### Diagnosis of Anthrax in Domestic and Other Ruminants (from USDA Fact Sheet)

- Sudden death in an animal without prior symptoms (esp. in ruminants), should lead to a suspicion of anthrax.
- If anthrax is suspected as the cause of death, **the affected carcass should not be opened** because exposure of the vegetative anthrax bacteria to air induces spore formation, contaminating the environment and presenting a health risk to personnel and other nearby animals.
- Diagnosis can be confirmed by aseptically collecting a postmortem blood sample from a peripheral vein (e.g., the jugular vein or ear vein) and examining a blood smear for the presence of the capsule using a suitable stain (e.g., M'Fadyean methylene blue stain) or by culturing the bacilli (see recommendations below).
- In the event an infected carcass is inadvertently opened, postmortem examination of ruminants may show (1) a rapidly decomposing carcass; (2) bloody discharges from the nose, mouth, or anus; (3) a lack of rigor mortis; (4) the presence of dark, tarlike unclotted blood; (5) lesions consistent with generalized septicemia; and (6) an enlarged spleen having a "blackberry jam" consistency.

### Diagnosis in Horses, Swine, Dogs and Cats (from USDA Fact Sheet)

- "Horses, swine, dogs, and cats usually show a subacute to chronic localized form of disease. There is a characteristic swelling of the neck secondary to regional lymph node involvement which causes dysphagia and dyspnea following ingestion of the bacteria. An intestinal form of anthrax with severe enteritis sometimes occurs in these species. Many carnivores apparently have a natural resistance ..."

### **Recommended Personal Protection if handling suspect cases (from USDA Fact Sheet)**

- "Veterinarians and other personnel should take precautions to avoid skin contact with potentially contaminated carcasses and soil. Personal protective equipment (PPE), such as impermeable gloves, boots, and clothing, should be used. Disposable PPE should be used, but if not available, decontamination of PPE should be completed. Although the risk of respiratory infection is extremely small, veterinarians and other personnel conducting postmortems, soil remediations, and disposal of animal carcasses should wear respirators with a high-efficiency particulate air (HEPA) filter."

### **If submitting samples to the Animal Health Diagnostic Center from suspect animals:**

- Please call to alert the AHDC first (607-253-3900)
- For reportable disease in domestic animals, the State Veterinarian's office also needs to be contacted (NYS: 518-457-3502)
- For blood smear - submit a purple top tube of blood.
- For culture, submit a red top blood tube, blood culture vial or a culture swab. Nasal/pharyngeal swabs may also be suitable for culture from companion animals.
- Submit all culture swabs in Amies transport media with or without charcoal.

### **Shipping instructions for samples from suspect cases:**

- Place primary sample container (swab in bacterial transport media; blood in vacuum blood collection tube) inside a secondary leakproof container such as a zipper-lock bag or rated air transport pouch (95pKa rated), with sufficient absorbent material to absorb any liquid contents in the event of a spill or breakage. Coolant packs should also be placed inside this secondary container. Place paperwork inside separate zipper-lock bag. Place all items above within an insulated **inner** box or pouch and label **inner** package "Anthrax suspect specimens." Do not write this on the outer box. Place this inner package inside a rigid **outer cardboard box**. Place a label for [Biological Substance Category B, UN3373](#) on the outside of the box and affix shipping label/address/sender info. Send via next day delivery. FEDEX Ground and some US Post Office sites will not accept packages with [Biological Substance Category B, UN3373](#) label.

### **Other useful links for additional information on anthrax disease**

- Center for Food Security and Public Health Information
  - [Comprehensive Anthrax Information](#)
  - [Guidelines for Disinfection for Anthrax](#)
- [New York State Department of Agriculture and Markets](#) Anthrax information
- [New York State Department of Health](#) Anthrax information
- Center for Disease Control, CDC has up to date information about Anthrax
  - [General Anthrax information fact sheet](#)
  - [Technical Anthrax information fact sheet](#)