



Anthrax

This disease results from infection by the bacterium *Bacillus anthracis*. This bacteria requires oxygen to survive and has two forms, the vegetative form and the spore form. The vegetative form is easy to kill with disinfectants, but the sporulated form is very resistant to environmental temperature extremes, drying and disinfectants; it can live for years in contaminated soils. Anthrax is found worldwide. In the United States, areas of concern are in South Dakota, Nebraska, Mississippi, Arkansas, Texas, Louisiana and California, with smaller areas in other states.

Anthrax is usually contracted by livestock when they eat bacillus spores on plants in pastures. Outbreaks occur in neutral soil or alkaline soil, which is calcium- and limestone-rich, and are often associated with heavy rainfall, flood, soil disturbance and/or drought. Under optimal levels of moisture, temperature and other favorable conditions, the spores in the soil can return to the vegetative form and grow to infectious levels. Carnivores such as dogs, coyotes or wolves can become infected after eating contaminated meat. Scavengers and flies spread anthrax after feeding on infected carcasses. Anthrax can also be contracted through inhalation or if the organism contaminates wounds, incisions or damaged tissues.

Anthrax spores contaminate the environment. Exposure to oxygen will cause spores to germinate and become infectious to other animals. Anthrax spores remain viable for decades in the soil or on animal products such as dried or processed hides or wool. Spores can survive for two years in water, 10 years in milk and up to 71 years on silk threads. Opening carcasses from animals suspected to have died of anthrax may contaminate the environment with spores therefore, it is not wise to open an infected carcass for a necropsy. Vegetative organisms are thought to be destroyed within a few days during the decomposition of unopened carcasses. **If you suspect an animal is**

dying of anthrax, contact your veterinarian immediately. Animals that die of anthrax will not display typical rigor mortis, and dark bloody discharge may be present from body orifices. Species affected: Goats, sheep, cattle and horses are susceptible. Pigs can become infected from eating contaminated meat. Rats and chickens are relatively resistant.

Incubation period: Typically one to 20 days. Most infections are noticeable after three to seven days. Incubation is only one to two weeks in pigs.

Symptoms: In cattle, goats and sheep, sudden death is the typical sign. Fever, staggering, excitement, depression, incoordination, trembling and difficulty breathing may be seen in some animals, followed by rapid collapse, terminal convulsions and death. Bloody discharges from natural body openings such as the nose, mouth, ears, penis and rectum are sometimes observed. Humans can become infected by handling infected animals or contaminated surfaces. The organism enters the skin, leading to a dark scab at point of entry. Infections acquired by inhalation or ingestion can be fatal if left untreated.

Diagnosis: Typically by clinical signs. Official diagnosis is made by laboratory identification of the organisms in samples of body fluids, skin lesions, lymph node or spleen.

Anthrax is a highly communicable disease. However, it is not highly transmissible among animals. Treatment is possible with antibiotics if started early. Vaccines are available for livestock.

This is a **reportable disease**. Affected carcasses should be burned or buried.

For more information:

http://aces.nmsu.edu/pubs/_b/b-120.pdf

<http://www.ag.ndsu.edu/pubs/ansci/livestoc/a561w.htm>