



## Frequently Asked Questions: **ANTHRAX**

### 1. What is anthrax?

Anthrax is a bacterial disease caused by *Bacillus anthracis*. It is an old disease. Robert Koch, a pioneer in microbiology, worked on anthrax in the 1870s. Historical works suggest that anthrax existed hundreds of years prior to Koch.

### 2. What animals can be affected?

Most warm-blooded animals including cattle, sheep, horses, pet animals, and humans can be affected. The severity of the disease varies by animal species and by route of entry of the bacteria.

### 3. Why is anthrax such a bad disease?

Anthrax can cause rapid death if the bacteria establish in internal organs. Animals infected with anthrax require rapid diagnosis and treatment. *B. anthracis* can form resistant bacterial spores that persist in the soil many years.

### 4. What are the signs of anthrax in animals?

Signs of anthrax vary in animals. Some species are more resistant to anthrax, while others are more susceptible.

**Cattle and sheep:** Animals affected with anthrax may exhibit depression, fever, difficulty breathing, trembling/staggering, and collapse/convulsions. Many times, affected animals are simply found dead. Dead animals may show bloody discharge from the nostrils or rectum.

**Horses:** Horses may show depression, fever, severe colic, weakness, diarrhea, and swelling of neck, sternum, and underbelly. Affected horses may die in 2 to 3 days.

**Pigs:** A few affected pigs may die suddenly, showing no obvious signs. Others may show a progressive swelling of the throat area with fever. This swelling is a result of infection of lymph nodes of the neck. Many pigs may have only a mild form of the disease and gradually recover.

**Dogs, cats, and other wild carnivores:** May show signs similar to pigs. Affected animals may be depressed and have fever with enlarged lymph nodes.

**Humans:** There are three forms of anthrax recognized in humans. Cutaneous anthrax is the most common form and occurs when *B. anthracis* enters a break in the skin. The organism causes a local skin infection that is treatable with antibiotics. Gastrointestinal anthrax occurs when the organisms are ingested. Pneumonic anthrax is the most life threatening and occurs when the organisms are inhaled. More information on anthrax in humans can be obtained from the CDC website [www.cdc.gov](http://www.cdc.gov)

### 5. How does the disease get started in animals?

There are a number of things that must come

together for cases of anthrax to occur. These include the presence of the bacteria, and exposure of a susceptible animal to the bacteria.

*B. anthracis* is known to naturally reside in soil in a limited number of places in the U.S. Some parts of South Dakota are among these areas. Places where *B. anthracis* is known to naturally exist in the soil are called **endemic areas**.

*B. anthracis* can form spores, a resistant form of the bacterium. Spores have been shown to be able to survive in the ground for many years. Animals grazing in areas where spores are found may be exposed, and if enough organisms are ingested or inhaled, disease can result.

In endemic areas, exposure to *B. anthracis* is more likely following flooding, excavation, or drought. Floods tend to remove and deposit soil, and can expose anthrax spores. In drought, animals are exposed to more soil-borne organisms, usually through close grazing. Anthrax cases are usually seen in South Dakota in the warm summer months from July to September.

*6. Can animals spread anthrax to humans?*

No. In fact, anthrax is not normally spread animal to animal.

Several animals in a herd may be affected at the same time, but that is because there is usually a common source of exposure, not because one animal spread it to the next. Similarly, anthrax is normally not spread from animals to humans. The kind of contact a person would normally have with animals (i.e. simple observation, sorting, transporting, feeding, vaccinating, etc.) would not allow anthrax transmission.

*B. anthracis* may be acquired by humans from infected animals if humans handle tissues and fluids from those animals. The only people who

normally would be doing this are veterinarians, some people in the rendering industry, and certain laboratory workers.

It is always a standard recommendation that livestock producers be cautious when handling dead animals to avoid contaminating themselves with fluid from any body orifice.

*7. Could the meat I buy at the grocery have anthrax in it?*

No. Anthrax is not in the muscle or organs of animals harvested for meat. The only time *B. anthracis* would be found in muscle or organs is when the animal was sick from anthrax. Animals sick or dying of anthrax are not used for food (neither human nor pet food).

*8. What should a producer do if an animal may be affected with anthrax?*

Get veterinary assistance. Ask the veterinarian to examine dead or sick animals. If the veterinarian thinks it necessary, samples will be sent to a diagnostic laboratory to determine if anthrax is affecting the animals.

*9. What happens in herds affected with anthrax?*

After anthrax is diagnosed in a herd, the entire herd, even those that are normal, is quarantined, and no animals may be removed from the herd for a period of 30 days after the last case of anthrax in the herd. This is to provide a time to be certain no new cases occur. The herds are monitored closely for new cases.

Generally, healthy animals in the herd are vaccinated with an anthrax vaccine, and all neighboring herd owners are informed that anthrax has been diagnosed, and they are encouraged to consider vaccinating their own animals.

Animals diagnosed with anthrax are not rendered for pet food. They are disposed of on the premise by burning and/or deep burial.