

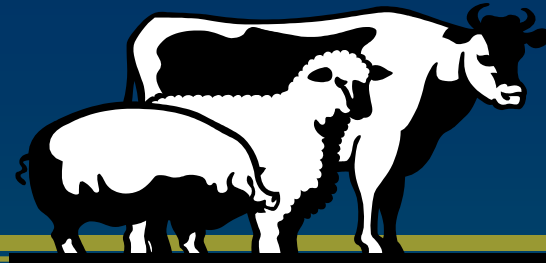


# *Anthrax in Northwest Minnesota*

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# What is anthrax?



- Anthrax is a naturally occurring disease to animals caused by *Bacillus anthracis*.
  - All warm-blooded animals are susceptible to the disease but cattle, horses, sheep and goats are most commonly affected.
- Since 2000, most cases have been clustered in northwestern Minnesota.
  - In addition to MN, anthrax was reported in South Dakota, North Dakota, Manitoba, Saskatchewan, and Texas this past year.

# How do Animals get Anthrax?

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- Outbreaks often occur after heavy rain or flooding move anthrax spores to the soil surface.
- Livestock ingest spores as they graze and spores become active once they are inside the animal's body.
  - Excavation and tilling, as well as drought, can also bring spores to the soil surface.
- Animal to animal contact does not spread anthrax.

# How do Animals get Anthrax?

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- Most cases occur in areas where animals have died of anthrax, since the bacteria outside the body forms spores that can live in the soil.
- These spores are extremely resistant to heat, cold, and chemical disinfectants.
- Clinical cases are most commonly seen when outside temperatures are 60 degrees Fahrenheit or higher.



# How do People get Anthrax from Animals?



- Cutaneous anthrax is the most common form of the disease in people, 95% of cases.
  - Direct contact with infected animals is required to develop cutaneous anthrax.
  - Cutaneous anthrax responds very well to antibiotic treatment and fatalities are rare.
- Gastrointestinal and inhalation anthrax are more lethal but very rare.
  - GI anthrax results from eating raw or undercooked meat from an infected animal.

# Is My Family at Risk?

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- Numerous safeguards are in place to ensure that animals with anthrax don't pose a threat to public health.
  - Animals that die suddenly on farms never enter the food supply.
  - If anthrax is confirmed, the animals are incinerated onsite.

- Human infection with anthrax from the environment is extremely unlikely.
- If a dead animal were missed, the anthrax spores would only contaminate the soil in the immediate area.
  - Transmission via direct contact with an anthrax infected animal is unlikely.

# How can human exposure be prevented?



- People handling carcasses of animals that have died of anthrax should wear latex gloves and long sleeves.
- All carcass disposal should be performed under the supervision of a Board of Animal Health veterinarian.
  - Diseased, dying, and/or dead animals should not be processed for human consumption.
- Bear and deer hunters should observe the following precautions:
  - Do not shoot an animal that acts strangely or has an unusual appearance.
  - Clean carcasses wearing rubber gloves.
  - Cook meat thoroughly before eating it.
  - Report dead bear or deer to the MN DNR at 651-296-3043

# 2006 Reported Cases

Kittson

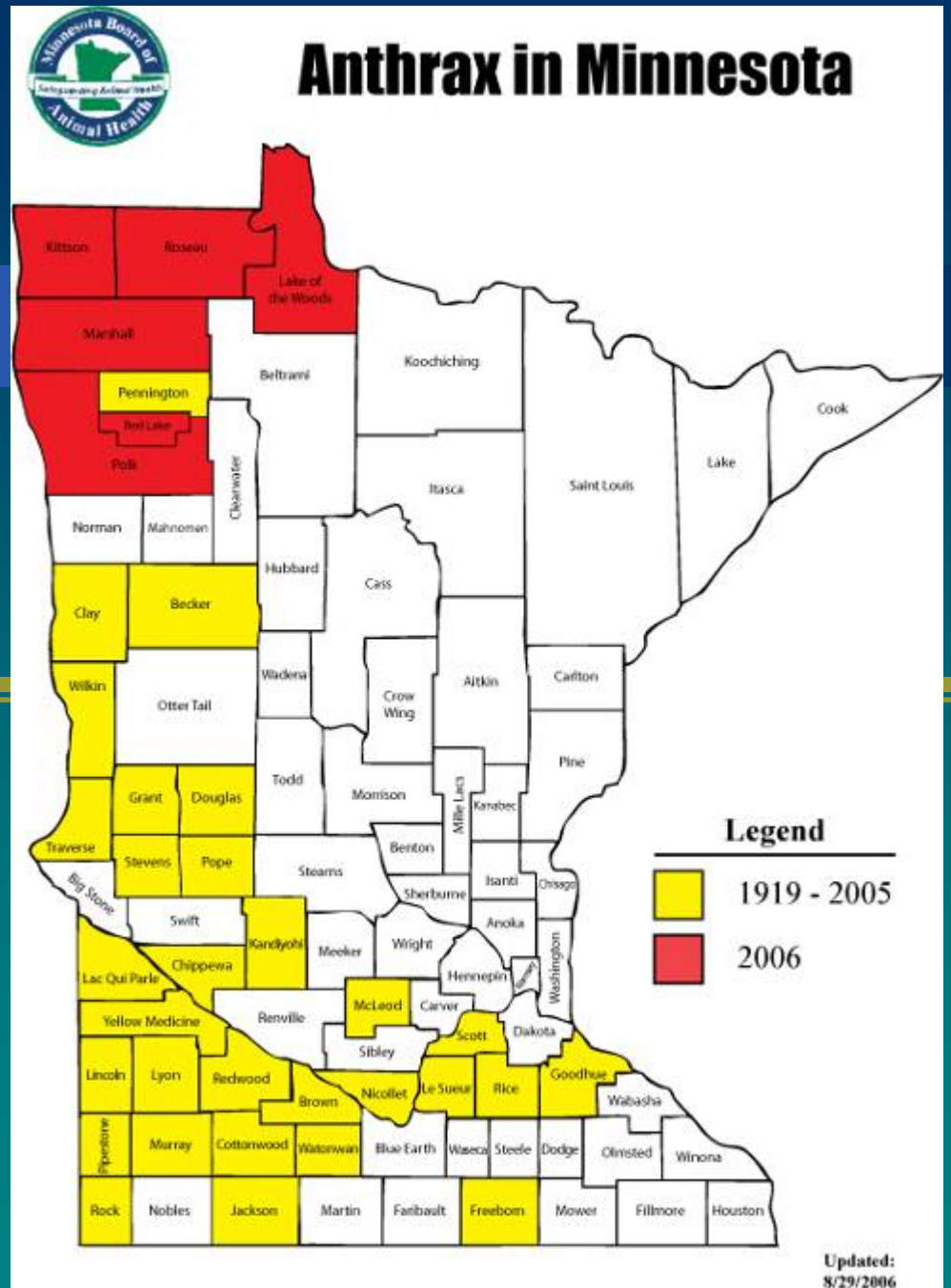
Roseau

Lake of Woods

Marshall

Red Lake

Polk





*Minnesota*  
Board of Animal Health  
Safeguarding domestic animal health in Minnesota

- **Anthrax in Minnesota:  
Current Updates**

- **Updated: September 18, 2006**

Anthrax cases in northwestern Minnesota have risen steadily throughout the summer. Since mid-June, 28 farms in Kittson, Polk, Roseau, Red Lake, Marshall, and Lake of the Woods Counties have had animals test positive for the disease, making this the second largest anthrax outbreak in the state's history. Minnesota's worst anthrax outbreak on record was in 1919 when 42 sites were infected. There have been few reported cases of anthrax in North and South Dakota this year, but the Canadian province of Saskatchewan has seen record levels of the disease. Minnesota's first case in 2006 was identified when six head of cattle from a farm in Kittson County tested positive in mid-June. In total, 91 animals have died of anthrax including cattle, bison, and horses.

# What are the clinical signs of anthrax in animals?

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- Often an animal dies without showing any clinical signs.
  - In the acute form of the disease, an animal may stagger, convulse, and die.
  - Hemorrhages from the mouth, nose and rectum are common.
  - Other symptoms include excitement, often followed by depression, fever, trembling, and difficulty breathing.
  - Carcasses decompose rapidly, and rigor mortis is often incomplete.

# What happens when anthrax is confirmed?

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- Any animal that dies suddenly of unknown causes in an anthrax endemic area should be treated as an anthrax suspect.
- A veterinarian should investigate the death and collect a blood sample to test for anthrax. The carcass must not be rendered. A post mortem examination should not be performed since this releases large numbers of anthrax bacteria into the environment.
- All suspect and confirmed cases are reported immediately to the Minnesota Board of Animal Health.
- If anthrax is confirmed, all animals on the pasture are placed under quarantine. Remaining animals should be removed from the infected pasture whenever possible.
- Long-acting penicillin and vaccinations can help prevent further death loss.

# How can Anthrax be prevented?

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- Vaccination
  - Recommended on all cattle, horses, buffalo, sheep, and goats on or near any premises that has had confirmed cases of anthrax.
- Whenever possible, do not allow animals to graze on previously infected anthrax sites or on adjacent low-lying areas where flooding may have contaminated the area with anthrax spores.

# Vaccination



- Dosage? 1 cc injection
- How is it given? Subcutaneously (under the skin with a ½ inch 16 or 18 gauge needle)
- Injection Site? The region of the neck just in front of the shoulder is a convenient site for administering the vaccine.
- A light to moderate swelling may appear at the site of injection. This will disappear after several days.
- Animals being vaccinated or recently vaccinated should not receive antibiotics, as antibiotics will interfere with effective vaccination.
- Revaccinate in 2-3 weeks in heavily contaminated areas.

# Vaccination

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- In areas where anthrax is known to be a problem, it is advisable to revaccinate annually approximately 4 weeks prior to the time the disease usually appears.
- For control of outbreaks, vaccination of all animals not showing symptoms is recommended. Not all animals will be protected by this procedure but taking action as suggested may stop further spread of the disease.
- It is also recommended that animals showing symptoms be isolated and treated with antibiotics as permitted.

## Vaccinating – cost?



Anthrax Vaccine - <\$0.90 per dose  
sold in 10 dose bottles

## Not Vaccinating – cost?

- Death loss
- Antibiotics
- Vaccine
- Time - Facilities

# Recommendations

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- Vaccinate in the spring prior to putting animals out on summer pastures.
  - Report any death loss to your veterinarian to rule out anthrax, especially in endemic regions.
  - When vaccinating horses, use separate clean needles to prevent injection site reactions.
  - Used needles and vaccine bottles should be burned or returned to your veterinarian for proper disposal.

## For more information on anthrax:

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- Minnesota Board of Animal Health:
  - 651-296-2942
  - [www.bah.state.mn.us](http://www.bah.state.mn.us)
- Minnesota Department of Agriculture
  - 1-800-967-2474
  - [www.mda.state.mn.us](http://www.mda.state.mn.us)

# Questions & Comments

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