

Reminder to Vaccinate Against Anthrax

The spring of 2006 has been one of flooding in many parts of Manitoba. Flooding increases the risk of anthrax as it disrupts the soil and can bring anthrax spores to the surface from animals that may have died many years ago.

Livestock owners in areas that have had anthrax outbreaks should vaccinate their animals before turnout. The vaccine is relatively inexpensive at a dollar and some cents a dose.

Livestock in other areas that will graze alkaline to neutral soils, flooded this year, may also want to consider vaccinating. In 2005, Manitoba had 12 anthrax outbreaks in 10 cattle and 2 horse herds on premises never previously recorded as having anthrax. Ten of the outbreaks occurred on alkaline soils or nearby neutral soils according to large survey maps. The other two, near Stephenfield Lake, were recorded as neutral soils. (see maps)

Vaccination in a known “anthrax area”

There is no doubt that the premises where anthrax previously occurred constitutes an anthrax area. The affected premises should as a minimum be vaccinated for 3 consecutive years after the last outbreak. Three years is recommended by Dr. Martin Hugh-Jones (Coordinator of the World Health Organization Working Group on Anthrax Research and Control), as the time it can take for superficial spores to be diluted by wind and rain and killed by ultraviolet and solar rays.

To be cautious a recent unified recommendation, shortly coming out from a joint committee formed by Manitoba, North Dakota, South Dakota and Minnesota, will recommend 10 years on an affected premise. A prudent livestock owner, however, should consider making it an indefinite part of their herd health program. Spores can persist under the right conditions for 50-250 years (possibly more) and one never knows when the next disruption may bring them to the surface.

What about vaccination of herds surrounding the affected premise? The unified recommendations mentioned previously, will recommend vaccination within 10 kms of an affected premise. The adjacent areas usually share many of the same topographical features as the affected premise. As well, if tabanid flies or other large biting flies, scavengers and infected wildlife play a role in spreading anthrax, vaccination in this circle should practically cover any dispersal from these sources. Beyond this circle, vaccination could still be a consideration but at a reduced risk level as one travels outwards. Whether to vaccinate or not would take into consideration topography (pH of soil, tendency to flood) and other factors including accessibility of the animals to monitor and treat. Limits of this outwards circle has been suggested up to 50 kms away.

Vaccination outside an “anthrax area”

Unfortunately we do not know where all the old anthrax sites are in the province. The 12 premises affected last year were at sites not recorded previously. There is a concern anthrax could be ticking over very slowly in some areas. Livestock herds on alkaline to neutral soils prone to flooding, especially herds that cannot be monitored or treated easily, may also want to consider vaccinating.

What animals should be vaccinated, when and how

Within anthrax areas all susceptible animals are recommended to be vaccinated. Susceptible animals include cattle, horses, mules, sheep, goats and pigs. Off label use of the vaccine should be considered for bison, and farmed elk and deer. Any off label use of the vaccine must be discussed with a veterinarian.

One dose annually as a preventative should be sufficient. The vaccine usually takes ~5-10 days to be effective and according to Dr. Hugh-Jones is sound for 9 months and tapers off. As the height of anthrax season is usually July to August with occasionally extension into September, one could consider vaccinating as early as late December or January if that fits management better - as it can for bison. Maternal transfer is uncertain and it is recommended all ages should be vaccinated if possible before turn out.

For a first time vaccinated animal, the manufacturer (Colorado Serum) recommends a booster in 2-3 weeks in heavily contaminated areas. The vaccine is live (Sterne type) and has to be handled properly to maintain efficacy. Antibiotics will kill the vaccine and should not be present in the animal's system at the time the vaccine is given or in the next 8 days so the vaccine can take full effect. The dose is 1 ml. injected subcutaneously in the neck. Light to moderate swelling may appear at the injection site which will disappear after several days.

Some articles indicate horses tend to react to the vaccine more than cattle. To minimize the potential, Colorado Serum suggests vaccinating horses in the brisket (pectorals). Anecdotal evidence from the field indicates that dividing the dose in half and giving a half dose on each side of the neck may help as well. To decrease the risk of secondary Clostridial infections, it has also been recommended to vaccinate horses when the hair coat is dry.

There have been a few reports of the Sterne vaccine retaining a degree of virulence for certain species such as goats and llamas. The World Health Organizations recommends the Sterne-type vaccines be used with caution in these species. Accidental injection into people has not caused a problem but affected people should still contact their health care provider to prevent secondary infections; tetanus boosters may also be required.

Vaccinated animals should not be slaughtered for 42 days after the last dose of anthrax vaccine. There is no withdrawal time for milk.

What to do with unexplained deaths

Any unexplained deaths in susceptible livestock or wildlife should be looked at by a veterinarian. If possible, the carcass should not be moved and it should be protected from scavengers. If anthrax is suspected, the carcass is not opened. A blood sample taken by the veterinarian and sent into the Winnipeg provincial lab can result in an answer within 24 hours or less.

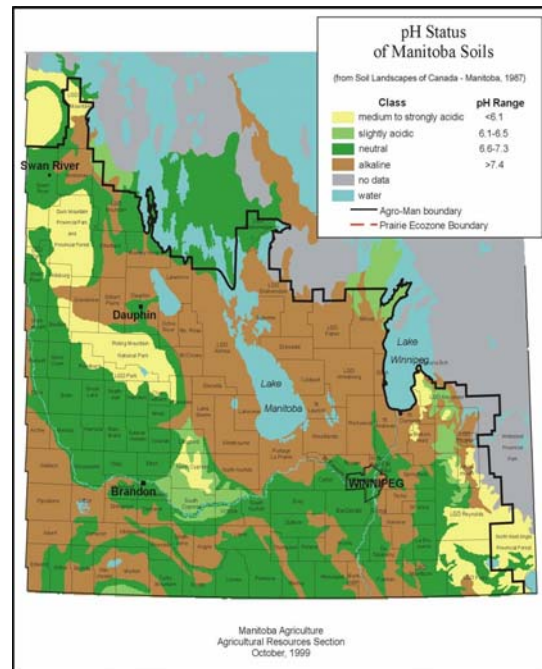
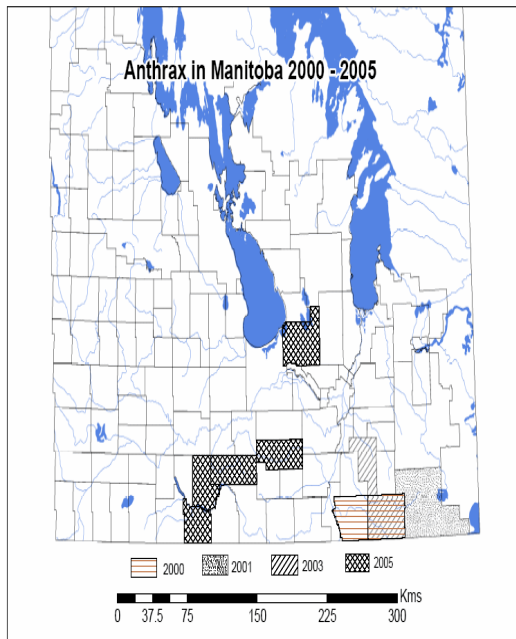
In Canada, anthrax is a federally "reportable disease" and the Canadian Food Inspection Agency (CFIA) must be notified. CFIA will ensure measures are taken to prevent its spread and that carcasses are properly disposed of. CFIA also will pay up to \$500/ head for cattle they have confirmed died from anthrax, to help cover the costs of proper

disposal and to promote reporting. Indemnity is also available for horses, sheep, swine and goats.

Public health risks

Anthrax can also cause disease in people. The risk however is low for people contracting it from animals. Due to food safety regulations, anthrax in the food supply does not occur in Canada. The skin form does occasionally occur, with veterinarians have the highest risk because of their contact with carcasses when determining the cause of death. Livestock owners should not handle suspect carcasses. Preventative measures for veterinarians are the same as for handling any disease suspect, including the use of rubber gloves. In addition, as fluids may be inadvertently splashed, eyewear is recommended. For the same reason, a mask (N95) is also recommended to prevent contact of splashed fluids with the lips, mouth, and nostrils. It also will prevent inhalation of spores, though this is an unlikely problem based on aerosolization studies.

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