PREVENTION PRACTICES FOR RINDERPEST

the Center for Food Security & Public Health
Iowa State University®

If a case of rinderpest is confirmed anywhere in the United States, it could spread from farm to farm mainly by the movement of infected animals and contact between animals. With quick diagnosis and control measures, an outbreak can be contained; however, with the extensive animal movement that takes place daily in the U.S., it is possible that the virus could spread to many different areas prior to detection. If any animal on your farm is confirmed to have rinderpest, all cloven-hooved animals on the farm that could get sick (cattle, swine, sheep and goats) may be euthanized and disposed of to control the further spread of the disease.

There are steps you can take to help prevent rinderpest from entering your farm. Strict biosecurity practices can help you and your neighbors minimize the chances that your animals will have to be destroyed.

A General Precautions handout (found on the CFSPH website) provides prevention steps that should always be used on a farm.

The biosecurity practices outlined here should be put into place immediately if rinderpest is confirmed anywhere in the United States and maintained until the U.S. is once again declared rinderpest free.

General Precautionary Measures

The spread of rinderpest between herds and to new areas is invariably by the movement of infected animals and close contact between animals. Infected cattle can start shedding the virus one to two days before the appearance of illness and they continue to shed virus for about nine to ten days after the onset of fever. They do not carry the virus for more than three weeks. Infected cattle may spread the virus through auction markets or other collection points and potentially transport it long distances before the disease is observed.

Prevention measures to minimize the introduction and spread of rinderpest onto your farm fall into three general categories:

1. Restrict or stop all animal movement to prevent entry or spread of the disease.
2. Use strict biosecurity measures for animals, animal products, vehicles, people and equipment.
3. Observe, detect, and report any disease or unusual signs to your herd veterinarian as quickly as possible.

Specific steps you can take upon rinderpest being confirmed in the United States are listed below. Many should already be in place on your farm but enhancement and more strict enforcement will minimize the chance of the disease being introduced onto your farm if rinderpest is confirmed in the U.S.

Farm Entrance

- **Limit access to your farm.**
  - The entrance to your farm is a major control point.
  - Have only one gated entrance to the animal areas on your farm to better control and monitor all visitors and vehicles arriving at your farm.
  - Keep the gate locked when not in use.
- **Stop all movement of animals on and off your farm.**
  - If rinderpest is confirmed in the U.S., movement restrictions may be put into place locally, regionally and possibly nationally.
  - Restrictions will depend on the scope of the outbreak.
  - These measures will minimize the spread of the virus to other areas, including your farm.
- **Post signs at the farm entrance to inform visitors of procedures to follow on your farm. (See Appendix A)**
  - Stay off this farm unless given permission to enter.
  - Honk before getting out of vehicle (to announce your arrival).
  - Check-in with farm personnel upon arrival. (Direct visitors to “where” they should check-in).
  - Follow farm biosecurity procedures.
  - Visitors that have had contact with livestock within 72 hours should not be allowed on your farm or should be required to wear clean protective clothing (coveralls, boots) while on your farm.

Animals

Livestock

- **Do not allow contact of your animals with neighbor’s livestock.**
  - The rinderpest virus can easily spread across fences when there is close contact between animals on both sides, but it will not spread over large distances.
  - Move animals out of pastures or lots where they have contact with neighboring animals.
  - Provide as much distance between your animals and neighboring animals as possible.
  - Consider double fencing the perimeters to minimize nose-to-nose contact.
- **Monitor animals closely and frequently for any developing illness or signs of disease.**

PREVENTION PRACTICES FOR RINDERPEST (CONT'D)

- **Educate yourself and train your employees about rinderpest and the signs of illness: (Photos found in Appendix B)**
  - Rinderpest should be considered if you see a rapidly spreading illness with fever and sudden onset in ALL ages of animals.
  - Following exposure to the virus, an animal usually shows illness in 4 to 5 days (this can range from 3 to 15 days).
  - The classic form of rinderpest is most common.
    - Fever (104-106°F)
    - Depression and loss of appetite
    - Initial constipation followed by watery diarrhea with blood
    - Discharge from the eyes and nose
    - Ulceration and raw/open sores in the mouth that cause drooling
    - Dehydration
    - Death in 6 to 12 days
  - The peracute form of rinderpest can be observed in highly susceptible (domestic cattle, buffalo, and yaks) and young animals.
    - Sudden onset of fever (104-107°F)
    - Death within 2 to 3 days
- **Contact the herd veterinarian immediately if unusual illness or signs are noticed.**
- **Isolate sick animals from the herd to minimize disease spread.**
  - Isolation should be a minimum of 21 days.
- **Use separate facilities, equipment, and staff to handle isolated livestock.**
  - If this is not possible, at a minimum, handle or visit the isolated animals LAST.
  - Clean and disinfect all equipment, clothing, boots, etc. that come into contact with sick animals.
- **When transporting animals, do not let your vehicle or trailer come in contact with any other livestock.**
- **Any animals that have recently been purchased or returned to the farm should be quarantined for a minimum of 21 days.**
  - New or returning animals (e.g. shows, competitions) can be infected with a disease without showing signs right away.
  - Quarantine allows time for a disease to develop in the animal, without exposing your entire herd to the disease agent. The animal can then be examined, diagnosed and treated (if it is not rinderpest).
  - Do not allow new additions and returning animals to share water, feed, facilities or bedding with your other animals.
  - Ideally animals should be quarantined at a separate location (premise).

Wildlife

- **Prevent contact between your livestock and all cloven-hooved wildlife like deer, antelope, elk, and especially buffalo.**
  - Wildlife can potentially spread the rinderpest virus to susceptible animals.
- **Control of wildlife will be difficult, but should be attempted.**

Record Keeping

- **Maintain thorough and accurate records of animal movement.**
  - Document all animal movements, including the dates of introduction into the herd, where they came from and movements between separate units.
  - Each farm location must be treated as a separate unit or premise.
  - This information will be essential to help trace where the disease came from.
- **Traffic on or off your farm should be closely monitored and recorded. (See Appendix C)**
  - Maintain a log sheet to record all visitors and vehicles that enter your farm.
  - Accurate record keeping of traffic on and off your farm will help with disease surveillance and tracking should it become necessary.
  - Do not rely on your ability to "recall" visitors and vehicles that were on your farm.
- **Know the health status and the source of any animal(s) brought onto your farm.**
  - Do not bring animals onto your farm unless they have been proven to be from rinderpest-free areas.

People and Vehicles

Employees

- **Employees that have contact with livestock at other locations (including their own home), should use strict biosecurity measures while on your farm.**
  - The rinderpest virus only survives for a short period of time in the environment but contaminated items can spread the disease.
  - This virus can be spread on clothing, boots, and equipment (fomites) if these items are recently

PREVENTION PRACTICES FOR RINDERPEST (CONT'D)

contaminated with eye or nasal discharges, manure, urine, saliva or milk from infected animals.
- Provide clean boots and coveralls on site for employees to wear on your farm.

- **Require that all employees inform you if they have had contact with animals in the last 72 hours.**
  - Employees that do not have contact with livestock or wildlife off your farm will most likely not be a threat to introduce the virus.

Neighbors

- **Discuss the threat of rinderpest with your neighbors.**
- **Determine precautions you can take together to protect your farms from becoming infected.**
  - Do not allow contact of your animals with neighbor's livestock.
  - Do not share equipment or vehicles between farms.
  - Change clothes, wash and disinfect boots and wear disposable gloves between farms.
  - Wash your hands thoroughly after any contact with animals.

Visitors and Vehicles

- **Minimize traffic and visitors to only those essential for the continued operation of the farm.**
- **Post warning signs telling visitors to keep out. (See Appendix A)**
- **Prevent or restrict access by visitors or vehicles that have had contact with animals in the previous 72 hours.**
- **All visitors and vehicles should park at the entrance to the farm or in established parking areas away from all animals, barns, and livestock areas.**
  - Have all deliveries left at the entrance to the farm.
- **If your livestock business depends on visitors (e.g. for sales promotion, petting farms):**
  - Ensure that they have not been to areas where rinderpest has recently occurred.
  - Visitors from these areas should not be allowed access until they have been away from affected areas for at least 72 hours.
- **Provide clean coveralls and disposable or disinfected rubber boots for visitors if they have had contact with livestock from other farms in the previous 72 hours.**
- **All visitors should be accompanied by someone from the farm at all times.**
- **Visitors and their vehicles should avoid livestock areas, pens and barns unless absolutely necessary.**
- **Restrict close contact or handling of animals by visitors (unless necessary for the health of the animal).**

Cleaning and Disinfection

- **Before reusing non-disposable items, clean and disinfect anything that has come in contact with eye or nasal discharges, manure, urine, saliva or milk from an infected animal.**
  - The rinderpest virus can be killed by most common disinfectants. (See Appendix D)
- **Clean isolation areas and replace bedding regularly.**
- **Dispose of bedding and manure from isolation areas and store it in a fenced off area for a period of two months, making sure livestock or wildlife do not have access to it.**

References

Bovine Alliance on Management and Nutrition. Handling foreign animal diseases in cattle. BAMN Publication. 2005.

United States Animal Health Association. Foreign Animal Diseases. Richmond, Virginia. 1998.

Department for Environment, Food and Rural Affairs (DEFRA-UK). Biosecurity guidance to prevent the spread of animal diseases. Accessed on July 06, 2005 at http://www.defra.gov.uk/animalh/diseases/pdf/biosecurity-guidance.pdf.

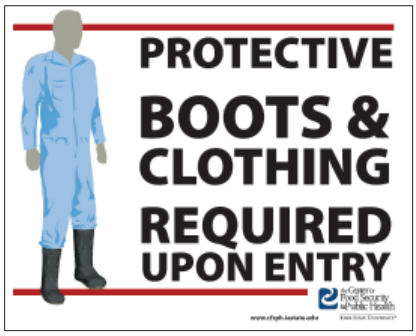
Montana Department of Livestock. Rinderpest. Accessed on September 21, 2005 at http://www.discoveringmontana.com/liv/animal-health/diseases/rinderpest/general.asp.

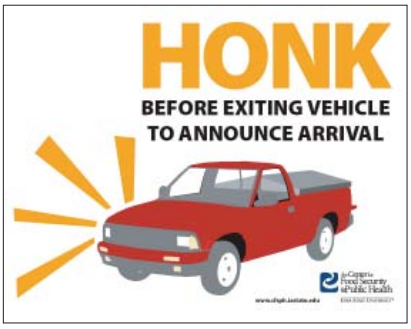
Washington State Department of Agriculture. Animal Health Program. Operational emergency response regarding highly contagious or foreign animal diseases. Annex 1. Accessed on July 7, 2005 at http://agr.wa.gov/FoodSecurity/Attachments/Annex1ProducersDairies.pdf.

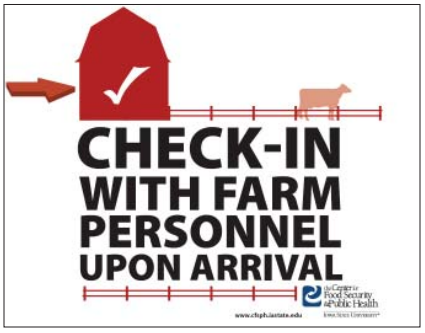
Food and Agriculture Organization of the United Nations. Manual on the Preparation of Rinderpest Contingency Plans. Accessed on September 21, 2005 at http://www.fao.org/DOCREP/004/X2720E/X2720E00.htm#TOC.

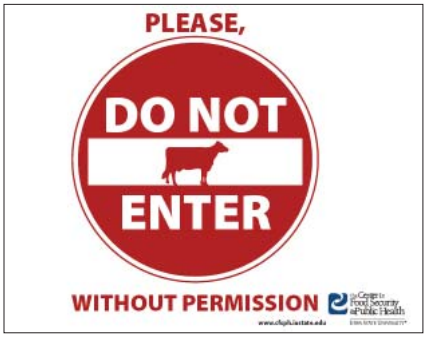
PREVENTION PRACTICES FOR RINDERPEST
APPENDIX A

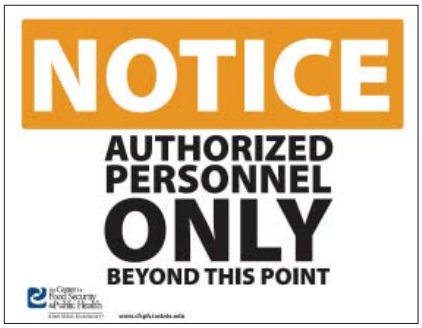
Sample signs to post at the farm entrance in the event of a Rinderpest outbreak in the U.S.
(Available from your state livestock extension specialist or the CFSPH web site at www.cfsph.iastate.edu)

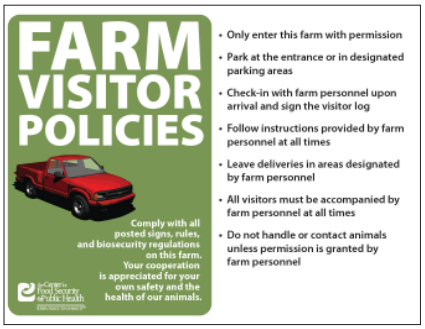


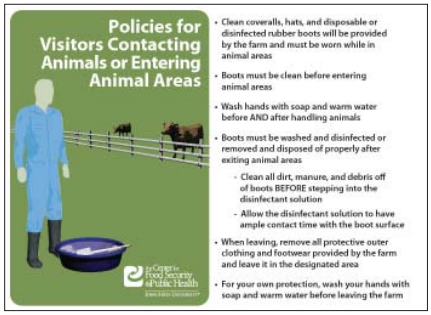












Additional signage available from private companies
(Those listed below are available from Gempler's).

PREVENTION PRACTICES FOR RINDERPEST
APPENDIX B

IMAGES OF RINDERPEST
Signs of Illness in Cattle

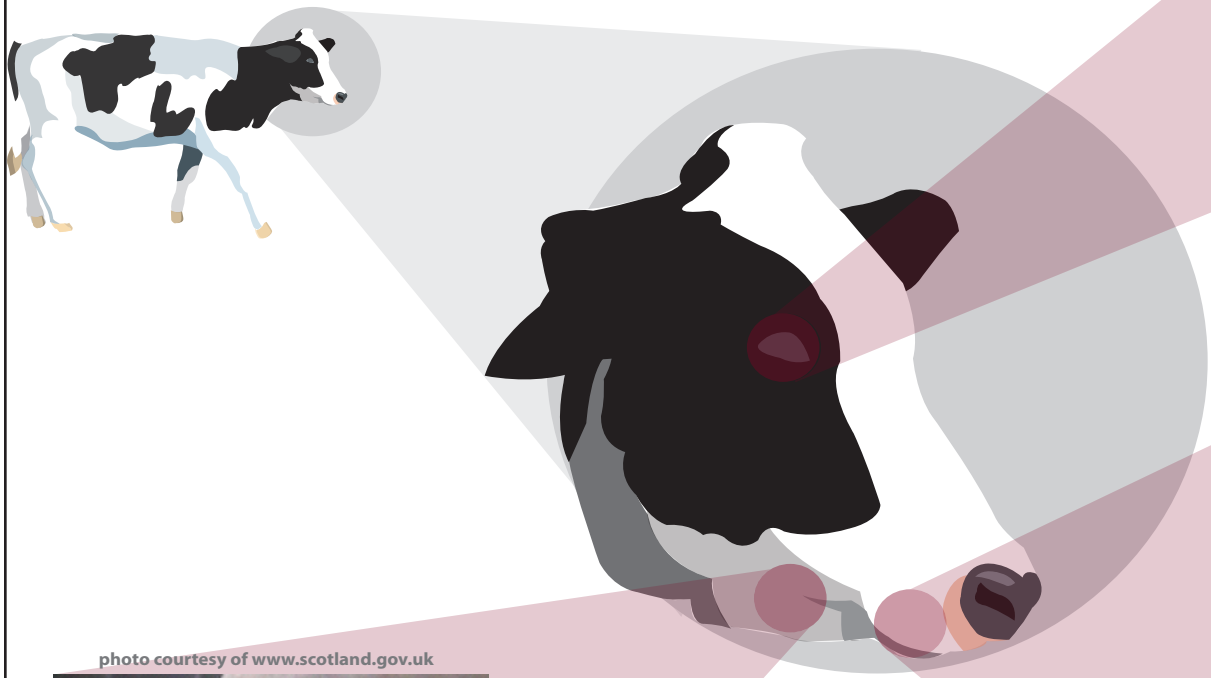


photo courtesy of P. Roeder at www.fao.org

Discharge from the eyes and nose

photos courtesy of
Plum Island Animal Disease Center

Ulceration and raw/open sores in the mouth

photo courtesy of www.scotland.gov.uk

Excessive drooling from sores in the mouth

the Center for Food Security & Public Health
IOWA STATE UNIVERSITY®

PREVENTION PRACTICES FOR RINDERPEST
APPENDIX C

DAILY VISITOR LOG

Visit Date	Name	Reason for Visit	Last Date of Contact with Livestock	Time In	Time Out

Disinfectants for Rinderpest Virus

Note: Before disinfecting, all surfaces must be cleaned. This includes removing any visible material such as manure, bedding and feed.

Product	Dilution	Mixing Instructions	Comments
Sodium hypochlorite 5.25% (NaOCl) (household bleach)	3%	2 gallons of bleach to 3 gallons of water. Mix thoroughly.	Not effective when area/objects are not clean; unstable in warm, sunny conditions.
Potassium peroxymonosulfate and sodium chloride	1%	Follow label directions.	e.g. Virkon-S
Sodium carbonate (soda ash)	4%	5.33 oz. sodium carbonate to 1 gallon of hot water **OR** 1 lb. soda ash to 3 gallons of hot water. Mix thoroughly.	The solution is mildly caustic (irritates skin), but can dull paint and varnished surfaces.

Source: AUSVETPLAN. Operational Procedures Manual, Version 2.1. Table 2.10 – Disinfectant/chemical selections and procedures – peste des petits ruminants and rinderpest. May 2000. At http://www.international-food-safety.com/pdf/ausvet-decontamination.pdf.