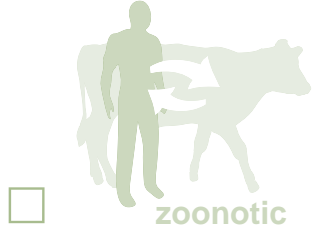
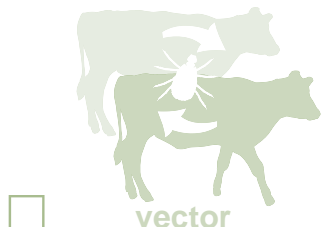
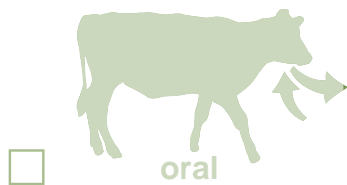
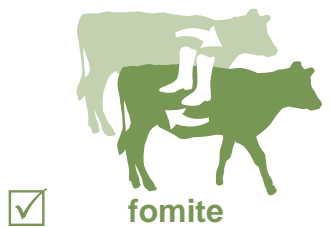


# Rinderpest

## Prevention Practices

### Route(s) of Transmission:



## Introduction

Rinderpest is a highly contagious viral disease that affects:

- Cows
- Domestic buffalo
- Sheep
- Goats
- Pigs
- Deer

Signs of illness include:

- Fever
- Depression
- Diarrhea
- Mouth sores
- Drooling
- Discharge from eyes, nose

This disease does not affect humans.

Rinderpest is transmitted to other animals through the following routes: direct contact and fomite.

The following pages contain more information about Rinderpest. Prevention practices are also included.

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**If you notice any signs of illness in your cattle that resemble Rinderpest, or unexplained illness or death, contact your local veterinarian immediately.**

# Rinderpest

## What is rinderpest and what causes it?

Rinderpest is a disease primarily affecting domestic cattle and buffalo. It is caused by a virus, is spread by direct contact and commonly causes death of infected animals. Due to a Global Rinderpest Eradication Program, it is limited to a few areas of Africa and central Asia.

## What animals get rinderpest?

Cattle and buffalo are most commonly affected. Outbreaks in these animals can approach death rates of 100%. Sheep and goats are also affected, but with less serious consequences. Pigs and deer can be infected, but many times the disease goes unnoticed in these species...

## How can my animal get rinderpest?

Rinderpest can spread from sick animals to healthy animals through **direct contact**. The spread of rinderpest from one location to another requires the movement of infected animals. It can also spread through **fomites** such as feed troughs and watering tanks.

## How does rinderpest affect my animal?

Sick animals have a sudden onset of fever, followed by depression and diarrhea. Sores develop in their mouths which causes them to drool. Discharges from the nose and eyes are also present. Most animals that contract this disease develop mouth sores and die.

## Can I get rinderpest?

No. Rinderpest does not infect people.

## Who should I contact, if I suspect rinderpest?

### In Animals –

Contact your veterinarian.

## How can I protect my animal from rinderpest?

Rinderpest is considered a foreign animal disease and is not present in the United States. The best approach to prevention is surveillance.

Becoming aware of the clinical signs of the disease (sores in the mouth, sudden fever, drooling and a high death rate) and the conditions resulting in the transmission of the disease (the introduction of infected animals into the herd) is the best way to protect your animals.

The best defense in a rinderpest outbreak is to limit all contact with animals outside of your herd and quarantine all newly introduced animals for a period of time established with your herd veterinarian.

## For More Information

CFSPH Technical Fact Sheets. Rinderpest at <http://www.cfsph.iastate.edu/DiseaseInfo/>

Foreign Animal Diseases. The Gray Book. [http://www.vet.uga/vpp/gray\\_book/FAD/Search/search.htm](http://www.vet.uga/vpp/gray_book/FAD/Search/search.htm)

OIE Disease Cards. Rinderpest. [http://www.oie.int/eng/maladies/fiches/a\\_A040.htm](http://www.oie.int/eng/maladies/fiches/a_A040.htm)



# PREVENTION PRACTICES FOR RINDERPEST

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 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.**

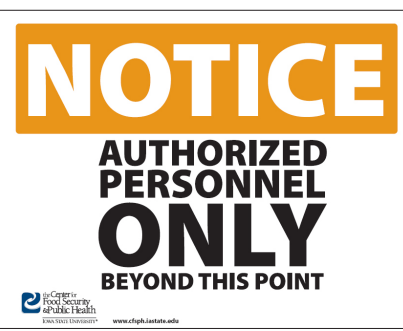
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# PREVENTION PRACTICES FOR RINDERPEST APPENDIX A



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](http://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

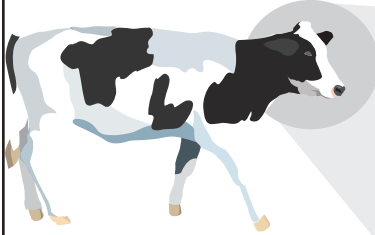


photo courtesy of P. Roeder at [www.fao.org](http://www.fao.org)



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](http://www.scotland.gov.uk)



Excessive drooling from sores  
in the mouth







### 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 peroxy-monosulfate 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 <b>OR</b> 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>.

# RINDERPEST PREVENTION PRACTICES CHECKLIST



## General Precautionary Measures

- Y N Have you restricted or stopped all animal movement on or off your farm to prevent entry or spread of rinderpest?
- Y N Do you use strict biosecurity measures for animals, animal products, vehicles, people and equipment on your farm?

## Farm Entrance and Perimeter

- Y N Do you limit access to your farm?
- Y N Do you have only one gated entrance to the animal areas on your farm to better control and monitor visitors and vehicles?
- Y N Do you keep the gate locked when not in use?
- Y N Have you posted signs at the farm entrance to inform visitors to stay off your farm unless absolutely necessary?
- Y N Do you require visitors to follow your farm's biosecurity procedures?
- Y N Do you require visitors to check-in with farm personnel upon their arrival?

## Animals- Livestock

- Y N Have you provided as much distance as possible between your animals and those of your neighbors (e.g. moved out of lots/pastures with direct contact or installed double fencing)?
- Y N Do you closely monitor animals every day for any developing illness?
- Y N Have you educated yourself about rinderpest and the signs of infection?
- Y N Have you educated your employees about rinderpest and the clinical signs of infection?

**CONTACT YOUR HERD VETERINARIAN IMMEDIATELY IF ANY UNUSUAL SIGNS OF ILLNESS ARE OBSERVED.**

## RINDERPEST PREVENTION PRACTICES CHECKLIST (CONT'D)



- Y N Do you isolate sick animals from the herd to minimize disease spread?
- Y N Do you use separate facilities, equipment, and staff to handle isolated livestock?
- Y N Do you prevent your vehicles or trailers from coming in contact with any other livestock that are not from your operation?
- Y N Do you prevent mixing livestock species (e.g. sheep with cattle) in vehicles when transporting animals?
- Y N Do you require that any animals that have recently been acquired or have returned to the farm be quarantined for a minimum of 21 days?
- Y N Do you prevent new additions and returning animals from sharing water, feed, facilities, or bedding with your other animals?
- Y N Do you always wash your hands thoroughly after any contact with sick animals to prevent disease spread to other animals?
- Y N Do you require your employees to wash their hands thoroughly after any contact with sick animals to prevent disease spread?

### Animals- Wildlife

- Y N Do you prevent contact between your livestock and all cloven-hooved wildlife like deer, antelope, elk, and especially buffalo?

### Record Keeping

- Y N Do you maintain thorough and accurate records of animal movement?
- Y N Is each farm location treated as a separate unit?
- Y N Is traffic on or off your farm closely monitored and recorded?
- Y N Do you maintain a log sheet to record any visitors or vehicles that come onto your farm?
- Y N Do you know the health status and the source of the animal(s) brought onto your farm?
- Y N Do you only bring animals onto your farm if they are proven to be from rinderpest-free areas?

## RINDERPEST PREVENTION PRACTICES CHECKLIST (CONT'D)



### Employees

- Y N Do you require that employees that have contact with livestock at other locations (including their own home) use strict biosecurity measures while on your farm (e.g. provide them with clean boots and coveralls to wear)?
- Y N Do you require that all employees inform you if they have had contact with animals, other than yours, in the last 72 hours?

### Neighbors

- Y N Have you discussed the threat of rinderpest with your neighbors and determined precautions you can take together to protect your farms from becoming infected?
- Y N Do you restrict the sharing of equipment or vehicles between farms?
- Y N Do you change clothes, wash and disinfect boots, and wear disposable gloves when moving between farms?
- Y N Do you always wash your hands thoroughly after any contact with your neighbor's animals to prevent spreading the virus to your animals?

### Visitors and Vehicles

- Y N Have you minimized traffic and visitors to only those essential for the continued operation of the farm?
- Y N Do you prevent or restrict access by visitors or vehicles that have had contact with animals in the previous 72 hours?
- Y N Do you require all visitors and vehicles to park near the entrance to the farm in established parking areas away from all animals, barns, and livestock areas?
- Y N Do you have all deliveries left at the entrance to the farm?
- Y N Do you 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?
- Y N Are visitors accompanied by someone from the farm at all times?

## RINDERPEST PREVENTION PRACTICES CHECKLIST (CONT'D)



Y N Do you require that visitors avoid livestock areas, pens, and barns unless absolutely necessary?

Y N Do you restrict close contact or handling of animals by visitors (unless necessary for the health of the animal)?

### Cleaning and Disinfection

Y N Do you clean and disinfect any non-disposable items that come in contact with eye or nasal discharges, manure, urine, saliva, or milk from an infected animal?

Y N Do you know the common disinfectants that will kill the rinderpest virus (e.g. bleach, Virkon-S, & soda ash)?

Y N Do you clean isolation areas and replace bedding regularly?

Y N Do you dispose of bedding and manure from isolation areas so that livestock or wildlife do not have access to it?

### Conclusion

**Total number of:**      **Yes responses**      \_\_\_\_\_      **No responses**      \_\_\_\_\_

If you have 1 or more No responses, you have identified areas for improvement on your farm. Not all questions are equal in their risk of disease transmission, so it is important to work with your veterinarian to develop a management plan addressing the biggest risks first. This will help minimize the chance of rinderpest from entering your farm. Each farm will be unique in their ability to prevent disease transmission because management styles, herd sizes and finances vary.