

HIGH CONSEQUENCE DISEASES AND YOUR LIVESTOCK

Biological Emergencies



While there are many disease threats for livestock, some can be of special concern based on their ability to spread rapidly and cause severe illness, and often death. These diseases include emerging, and “exotic” or foreign animal diseases. These high consequence diseases can have devastating economic effects, (such as loss or disruption of trade, loss of consumer confidence), and lead to restrictions on animal movement, costing the animal industry millions of dollars. Prevention measures and rapid response for these diseases are essential for minimizing the further spread and impact to your livestock.

Definitions

- **High Consequence Livestock Diseases.**
 - Diseases that spreads rapidly from animal-to-animal and, if given the opportunity, from herd-to-herd; includes most emerging and foreign animal diseases.
- **Emerging Diseases.**
 - Diseases that are newly discovered, have increased in occurrence or have spread to new locations or species. Examples include: bovine tuberculosis, brucellosis, vesicular stomatitis.
- **“Exotic” or Foreign Animal Diseases.**
 - Livestock disease not currently found in the U.S., but is present in other areas of the world, thereby making it a potential biological threat to U.S. livestock. Examples include: foot-and-mouth disease, highly pathogenic avian influenza, Rift Valley fever.

Disease Transmission

Disease-causing organisms can be spread by a variety of methods. These are important to consider when setting up biosecurity protocols, to reduce further transmission.

- **Direct contact:** Entry of disease agent into open wounds, mucous membranes, or the skin; may occur by contact with blood, saliva, nose-to-nose contact, rubbing, or biting from an infected animal.
- **Indirect contact or fomites:** Transfer of disease agent by an inanimate object (e.g., equipment, vehicle, clothing, footwear).
- **Aerosol:** Infectious droplets passed through the air from one animal to another.
- **Ingestion:** Consumption of disease agent in contaminated feed or water or by licking or chewing contaminated environmental objects.
- **Vector-borne:** Disease agent spread by insects (e.g., mosquitoes, ticks, biting midges, flies)

Prevention: Biosecurity Measures

- **Isolate new introductions or returning animals.**
- **Monitor animals for illness.**
 - Observe animals daily for signs of illness.
 - Sick animals should be identified and isolated as soon as possible.
 - Contact your veterinarian immediately!
- **Implement strict biosecurity measures on your farm.**
 - Restrict access to your property and your animals.
 - Only allow essential workers and vehicles on the premises.
 - Prohibit visitors near animals unless absolutely necessary.
- **Wear protective clothing to minimize spread.**
 - Ensure all personnel or allowed visitors have clean footwear (disposable boots) and clothes (coveralls) while on the farm.
- **Cleaning and disinfection.**
 - Clean and disinfect clothes, shoes, equipment, vehicles and hands after contact with animals.
 - Clean and disinfect premises and equipment regularly.
 - Do not share equipment with other farms, unless items have been cleaning and disinfected.
- **For additional biosecurity measures to implement, visit http://www.cfsph.iastate.edu/Infection_Control**

During an Outbreak Situation

The response needed for a high consequence livestock disease will involve various state and federal agencies in efforts to control the further spread of the disease.

- To learn more about the necessary response to a high consequence disease, visit http://www.aphis.usda.gov/publications/animal_health/content/printable_version/fs_fmd_con_07.pdf
- **What you can do.**
 - Cooperate with veterinarians and officials to prevent the disease from spreading further.
 - Implement strict biosecurity measures on your farm.
 - Monitor your animals for signs of illness.
 - In some situations, vaccines may be available and used to aid in controlling the disease spread. Determination will be made by state or federal animal health authorities.

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HIGH CONSEQUENCE LIVESTOCK PATHOGENS

Biological Emergencies

These pathogens (listed by affected animal species) are considered high consequence due to their ability to spread rapidly, cause severe disease in livestock or have severe economic impacts.

Ruminants		
These pathogens can occur in cattle, sheep, and goats.		
Anthrax <i>cattle, sheep, goats</i>	Contagious caprine pleuropneumonia <i>sheep</i>	Peste des petits ruminants <i>sheep, goats</i>
Akabane virus <i>cattle, sheep, goats</i>	Foot and mouth disease <i>cattle, sheep, goats</i>	Q Fever <i>cattle, sheep, goats</i>
Bluetongue virus (exotic strain) <i>cattle, sheep, goats</i>	Goat and sheep pox <i>goats, sheep</i>	Rinderpest <i>cattle, sheep, goats</i>
Bovine spongiform encephalopathy (mad cow disease) <i>cattle</i>	Heartwater <i>cattle, sheep, goats</i>	Rift Valley Fever <i>cattle, sheep, goats</i>
Brucellosis <i>cattle, sheep, goats</i>	Lumpy skin disease <i>cattle</i>	Screwworm myiasis <i>cattle, sheep, goats</i>
Coccidioidomycosis <i>cattle, sheep</i>	Malignant catarrhal fever <i>cattle, wild ruminants</i>	Tularemia <i>sheep</i>
Contagious bovine pleuropneumonia <i>cattle</i>	Melioidiosis <i>sheep, goats</i>	Vesicular stomatitis virus <i>cattle</i>
Swine		
These pathogens can occur in swine.		
African swine fever	Foot and mouth disease	Nipah virus
Brucellosis	Japanese encephalitis virus	Rinderpest
Classical swine fever virus (hog cholera)	Melioidiosis	Swine vesicular disease
Coccidioidomycosis	Menangle virus	
Horses		
These pathogens can be found in horses, donkeys, mules, and zebras.		
African horse sickness	Hendra virus	Vesicular stomatitis virus
Coccidioidomycosis	Japanese encephalitis virus	Viral encephalitis viruses Eastern Equine Encephalitis virus, Western Equine Encephalitis virus Venezuelan Equine Encephalitis virus
Glanders	Screwworm myiasis	West Nile Virus
Avian		
These pathogens can be found in chickens, turkeys, wild birds and waterfowl.		
Avian influenza virus	Exotic Newcastle disease virus	Viral encephalitis viruses Eastern Equine Encephalitis virus, Venezuelan Equine Encephalitis virus
Screwworm myiasis		

***Bolded diseases** indicate human can also be affected.

To learn more about any of these diseases, visit <http://www.cfsph.iastate.edu/DiseaseInfo>