



# Biosecurity Guidelines for Animal Industries

## Introduction:

Biosecurity is defined as a system of management practices that prevent or greatly reduces the risk of introducing new diseases to a farm or stable. A good biosecurity program should address the prevention of disease entry and spread on a farm, stable or home.

As with any biosecurity plan, livestock and horse owners should contact their regular veterinarian to discuss what appropriate measures should be implemented on their specific operation.

## Best Management Practices:

Since some animals may not exhibit obvious signs of disease it is important to understand how diseases are transmitted.

- Spread of disease agents
  - Animal to animal
  - Animal to human
- Different routes of transmission:
  - **Aerosol** – Disease agents are contained in droplets which can pass through the air
  - **Direct contact** - Disease agent in animals or the environment are transferred from one to the other  
**Examples:** Open wounds, mucous membranes, skin, blood, saliva, nose to nose, rubbing, biting
  - **Reproductive transmission** - breeding or dam to offspring
  - **Fomite** - Contaminated inanimate object carries agents to other animals  
**Examples:** Brushes, needles, shovels, trailer, humans
  - **Oral** - Consumption of contaminated feed or water, licking or chewing environments containing feces, urine, or saliva
  - **Vector-borne** - Insect acquires pathogen from one animal and transmits to other animal(s)
    - Living organisms that carry disease agents from one host to another are called vectors

**Mechanical vectors:** A vector that simply carries a microorganism with no replication from host to host. **Examples:** flies and cockroaches

**Biological vectors:** In contrast, microbes must propagate within a biological vector before the biological vector can transmit the microbes. **Examples:** fleas, ticks, and mosquitoes

Prevent the entry and spread of diseases by implementing and maintaining a good biosecurity plan.

- **Zoonotic** – Infectious agents that can be transmitted between (or are shared by) animals and humans

**Examples:** Brucellosis, Tuberculosis, West Nile Virus, and the Plague

### General Prevention Tips:

#### Purchasing and Introduction of New Animals to Herd

- Buy from a reliable source.
- Make sure health records on the new animals are up-to-date.
- Have a reliable veterinarian in the area inspect the animal(s) prior to purchase.
- Isolate animals once on your property (30 days is the recommended for cattle, sheep, goats, horses, poultry and 60 days for swine).
- Provide a pen or stall that has adequate ventilation and is not located near other livestock or horses.
- Do not cross use shovels, feed buckets, brushes or other equipment between the isolated animal and other livestock.
- Ensure workers clean their hands and boots and change clothes prior to entering other areas.

#### Returning From Shows or Exhibits

- Isolate animals once on your property (see above recommendations).
- Use your own trailer to transport your animals. If you do not have your own transportation, it is crucial to disinfect all returning animal's hooves prior to entering your barn or stable.

#### Limit Contact with Animals

- Neighbor's livestock
- Wildlife and birds
- Roaming cats and dogs

#### Maintain Secure Fences and Locked Gates

- Establish biosecurity protocols for delivery vehicles and personnel

#### Keep Up-To-Date Health Records on Every Animal

- Review vaccination and treatment programs
  - Annually, bi-annually
  - Protocol versus actual
- Investigate unusual signs and unresponsive cases
  - Neurologic, downers, or sudden death
  - Train farm or stable personnel to report sick animals
  - Inspect animals daily
  - Clean equipment, boots, and clothing
- Euthanize terminally ill animals promptly and appropriately

- Removed and rendered
- Necropsy animals that died from unknown causes

### Key Points:

- Biological risk management is important
- All diseases are transmitted by a few common transmission routes (described above).
- Disease risk can be managed efficiently and effectively.
- Awareness education is essential.
- Work with your regular veterinarian.
- You play a critical role!

### Resources:

American Veterinary Medical Association resources:  
<http://www.avma.org/pubhlth/biosecurity/>

Biowarfare and Bioterrorism:  
<http://64.177.207.201/cbw/>

Dairy Facility Biosecurity:  
[http://www.state.ma.us/dfa/animalhealth/dairy\\_facility\\_biosecurity.htm](http://www.state.ma.us/dfa/animalhealth/dairy_facility_biosecurity.htm)

Farm and Ranch Biosecurity:  
<http://www.farmandranchbiosecurity.com>

Homeland Security:  
<http://www.usda.gov/homelandsecurity/homeland.html>

Livestock Biosecurity (Penn State website):  
<http://www.vetsci.psu.edu/Ext/Biosecurity/BioMain.htm>

Meat and Poultry Hotline: 1-888-MPHotline (1-888-674-6854); Hearing Impaired (TTY) 1-800-256-7072

National Biosecurity Resource Center for Animal Health Emergencies (primarily focuses on pigs):  
<http://www.biosecuritycenter.org/>

For more information visit [www.umass.edu/cdl](http://www.umass.edu/cdl)

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