

What is biosecurity?

Depending on your area of concern, biosecurity can have many different meanings. In animals, biosecurity refers to things you do to keep your animals free from disease. Biosecurity has a big role in any herd health program, but biosecurity can reach far beyond the farm.

Biosecurity poses several concerns. One major concern is national biosecurity, measures directed at protecting our nation's agriculture industry. This includes quarantine and inspection procedures. State-level biosecurity measures protect a state's agriculture industry through programs such as disease monitoring, control and eradication programs, and issuing health papers and movement permits.

Population-based biosecurity plans done at the farm level are usually referred to as biosecurity or biocontainment measures. Biosecurity measures prevent the spread of disease between farms or herds. They are used to prevent the spread of diseases within different groups of animals within a herd.

Why is biosecurity important to livestock producers?

As food producers, we must protect both animal and human health. Some reasons for protecting animal health may include decreasing illness and discomfort, decreasing treatment costs, decreasing production losses, decreasing discarded meat, and decreasing livestock death. Ways to protect human health may include decreasing potential zoonotic pathogens (harmful organisms that can be transmitted from animals to humans) and ensuring a safe, wholesome human food supply.

Also, with more than 250,000 people entering the United States daily, there is a need to protect our agriculture industry from foreign animal diseases and invasive pests that may be intentionally or unintentionally introduced. State-level biosecurity measures protect a state's agriculture industry through programs such as disease monitoring, control and

eradication programs, and the issuance of health papers and movement permits. With a multibillion-dollar value, agriculture is Mississippi's number one industry, directly or indirectly employing more than 30 percent of its population.

How can a livestock producer implement a biosecurity plan?

The first step in creating a biosecurity plan is to recognize why you need a plan. The general purpose of a biosecurity plan is to decrease the spread of animal disease. Biosecurity plans will vary by operation and purpose and should be suited to each farm. Are you concerned about specific conditions, such as reproductive disorders, or do you have many visitors on your farm and want to prevent introducing contagious diseases in general? Do you show animals at several county fairs and exhibitions yearly and want to protect your herd at home?

Biosecurity plans are required in programs such as the Beef Quality Assurance (BQA) program and the Mississippi Voluntary Johne's Disease Program.

The most important part of putting a biosecurity plan in place is performing a risk analysis. A proper risk analysis includes risk assessment, risk management, and risk communication.

Risk assessment involves identifying disease hazards, assessing disease exposures and potential consequences, and characterizing disease risks (usually high, medium, and low).

Economic assessments and cost-benefit options are very important. There are costs of diagnostic testing, costs of preventive measures such as vaccinations, and costs of treatment options, as well as benefits in terms of increased health and productivity. In most cases, it may not be cost-effective to implement all possible biosecurity measures.

Risk management involves establishing herd health goals from the risk assessment, determining risk reduction strategies that are practical and effective, implementing needed

improvements, and evaluating the strategies. In other words, this is the action part of your biosecurity plan. How are you going to reduce the risks of disease to your farm, and how are you going to monitor your actions? It is important to realize this is a changing process – biosecurity risk management procedures may cause you to change your biosecurity risk assessments, and vice versa.

Risk communication is the third step in the biosecurity risk analysis process. It is important to document and share your plans. If your employees and visitors don't know the biosecurity plan, they are not likely to follow it.

You can do a risk analysis on any aspect of your operation, and in many cases, you may have to do a separate risk analysis for each potential disease situation. Your veterinarian can help you identify and rank the risks of disease on your operation.

What are some strategies producers can use to prevent the spread of disease within groups on a farm?

- Minimize contact between susceptible groups of animals. Pay attention to “animal flow.” Handle animals that are most susceptible to disease first, such as calves, and handle animals that pose a greater risk of spreading disease last. Use separate areas for the calving and the sick pen.
- Enhance animal immunity by providing proper nutrition, reducing stress, and following proper vaccination programs.
- Choose manure storage areas carefully. Drainage or runoff from manure storage can contaminate other areas of the farm. Pay special attention to the path of the loader or scraper, and avoid tracking manure through clean or high-risk areas.
- Do not use the same loader for feed and manure hauling, or properly clean and disinfect between uses. Avoid stepping or standing in feed bunks.
- Provide clean feed and water, and keep containers free from manure and other contaminants. Avoid feeding waste milk to calves. If colostrum is supplemented, be sure it is from a clean source or from a herd at least as healthy as your own.
- Isolate all sick animals, preferably for two weeks after symptoms of illness have stopped. An animal may look healthy but can continue to spread pathogens and infect other animals. You should also use separate equipment, personnel, and clothing in the isolation area if possible.

- Clean and disinfect all shared equipment between different groups of animals. Wear clean clothing and boots when working around animals.
- Have your veterinarian perform a necropsy on any animal that dies from unknown causes. Report unusual illnesses or deaths. Animals can warn of foreign animal diseases, as well as potentially dangerous human pathogens, such as anthrax and plague, and toxic agents.
- Do not let dogs, birds, or other animals have access to dead livestock. Dispose of carcasses and other animal fluids and tissues properly, preferably by burial under at least 24 inches of soil. Contact the Mississippi Board of Animal Health (1-888-646-8731) for specific regulations regarding other animal species or suspected reportable disease conditions such as anthrax.

What are some strategies producers can use to prevent the spread of disease between farms?

- The main origin of disease onto a farm is by adding animals. It is important to know the source of all new additions. Require disease testing, vaccination records, and health papers. Remember, just because an animal looks healthy, it doesn't mean it is healthy.
- Reducing contact with potentially sick animals or their secretions will help reduce disease. If you are in a show or sale barn, try to avoid direct or nose-to-nose contact between animals. Keep your areas clean, and avoid sharing feeders and waterers, which allow close contact between animals.
- Enhance animal immunity by providing proper nutrition and proper vaccinations when traveling or hauling animals.
- Quarantine all new animals or animals that have been taken off of the farm, such as bulls and show animals. The quarantine period should last at least 30 days, preferably 60 days. This will allow you to perform testing and give vaccinations, and allows the new animal time to acclimate to its surroundings. This may also allow for sufficient incubation time in the event that the animal is a carrier of an infectious or contagious disease.
- Clean and disinfect shared equipment. If possible, avoid sharing equipment with others in a sale barn, show barn, or any areas where large numbers of animals are gathered. Have a separate set of shovels, pitchforks, and buckets that go on the road with you and are not used on animals at home. If you share equipment with your neighbor, be sure it is cleaned after every use, before taking home.

- Consider a rodent and animal control plan. Mice, birds, cats, dogs and even visitors can spread disease within and among farms.
- Post and identify your operation as a biosecure area, and require visitors to follow your biosecurity rules.

What biosecurity procedures should be required of visitors to a farm or operation?

- Require visitors to check in at the house or office as soon as they arrive. Inform visitors of your biosecurity policy, and reserve the right to restrict farm access.
- Put visitors into low risk (low farm, low animal contact), medium risk (high farm, low animal contact), and high risk (high farm and high animal contact) groups (see the table on the back page). Then, make biosecurity recommendations for each group. Include neighbors, Extension agents, feed salesman, AI technicians, and veterinarians in your groupings.
- Restrict farm access for visitors who have traveled to certain international areas or who may have had contact with potentially infectious animals. Review these areas and conditions with your herd veterinarian during your risk analysis.
- Require visitors to wear clean clothing and boots, or have disposables or guest clothing and boots available for visitors.
- Try to reduce animal contact by visitors. Do not let visitors step into feed bunks or wash in water troughs.
- Do not allow visitors to unnecessarily bring farm dogs or other animals onto your property.
- Restrict unknown vehicular traffic. Trucks and other vehicles entering your property should not have visible manure and mud. Consider supplying a disinfectant sprayer for tires at each entrance to your property. Both the inside as well as outside of the tire should be sprayed.

What are some important principles for cleaning and disinfecting?

- In general, most disinfectants will not work where there are dirt and debris. You must clean surfaces before using disinfectants. Most disinfectants must have a minimum surface contact time to be effective.

- Most detergents and disinfectants work better in warm or hot water. Take care in combining detergents and disinfectants, since some disinfectants are inactivated with changes in pH.
- Sunlight (UV light) can be an effective and economical disinfectant. In many cases, you can clean large farm equipment thoroughly and leave it in the sunlight. This is a great way to disinfect objects such as troughs, trailers and vehicles.
- Be careful when using sprayers and high-pressure washers. Sometimes you can be accidentally spraying germs, effectively spreading them around.
- Not all disinfectants are equal. Read the labels of all products for proper use, and be sure to avoid potential human hazards. Have written guidelines readily available on the specific uses and properties of the various disinfectants.

Where can you go for more information and help in creating a farm biosecurity plan?

Your herd veterinarian is one of the most qualified people to help you determine the risks for disease for your specific operation. This requires knowledge of specific disease agents and transmission factors, as well as the most effective and practical prevention and control methods. You can also contact your county Extension agent, who can help direct you to valuable animal health resources within your community. There are many bulletins and extension publications available on biosecurity for livestock populations, as well as University and organizational websites. Create a consulting team of agricultural experts to help develop your plan. Remember, there is no one biosecurity plan.

Biosecurity Risk Assessment for Visitors

(Check most appropriate box)

Activity	Low Risk	Moderate Risk	High Risk
Other farm visits per day	One farm, little to no animal contact	Occasionally visits more than one farm/day, minimal animal contact	Visits many farms or livestock facilities. Much animal contact.
Ownership of similar animals	Does not own similar species at home	Similar species at home, but different production type.	Owns and/or cares for similar species and production type at home
Contact with potentially ill or infectious animals	Minimal or no contact with potentially ill or infectious animals	Contact with healthy animals but avoids contact with potentially infectious animals	May own or be exposed to many animals of unknown or poor health status
Use of protective clothing	Wears sanitized shoes or boots. One pair of coveralls per site	Wears sanitized boots and clean coveralls. If clean, may not change coveralls.	Does not wear boots or protective clothing, or wears same clothing between farms
Leaves or borrows supplies, equipment	Supplies and equipment kept away from animals or feed areas	Supplies and equipment in areas of minimal animal or feed contact.	Supplies and equipment may be left in animal or feed areas.
Work in animal contact areas	Does not work in areas with highly susceptible animals	Minimal exposure to high-risk animals and only with protective clothing	Works with highly susceptible animals. Few precautions taken.
Biosecurity knowledge	Understands and promotes biosecurity practices	Exposed to biosecurity principles but is not an advocate	Little appreciation for biosecurity principles and does not view it as important to industry
Foreign travel	Does not travel outside of the US or Canada	Limited travel outside the US or Canada, with minimal or no animal contact	Travel to foreign countries, with animal contact in those countries
Foreign visitors	Prohibits foreign visitors contact with feed or animals	Foreign visitors allowed in animal or feed areas following adequate quarantine	Visitors are permitted in animal or feed areas without screening or quarantine.

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