

Biosecurity & Animal Agriculture

Biosecurity Defined	
Essential Question(s)	
1. What is biosecurity? 2. Why is biosecurity important in animal agriculture?	
Key Concepts	
Biosecurity	<ul style="list-style-type: none"> • Biosecurity in the livestock industry is the prevention of _____ transmission to and through an operation <ul style="list-style-type: none"> – goal of biosecurity: <ul style="list-style-type: none"> • produce healthy animals with a greater well-being which results in the animals being more _____ for producers as the animals have an improved growth rate, feed efficiency and reproductive rate • Biosecurity is essential to: <ul style="list-style-type: none"> – providing a _____ product to customers in the food supply – raising healthy animals on farms – supporting a thriving _____ and ecosystem • Biosecurity protocols should be followed to: <ul style="list-style-type: none"> – raise animals with greater _____ efficiency – _____ common diseases – prevent major herd and flock deaths

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A National Perspective	
Essential Question(s)	
1. Why is biosecurity important at the national level? 2. What programs and initiatives are in place nationally to promote biosecurity?	
Key Concepts	
United States Food System	<ul style="list-style-type: none"> • United States food system is a _____, multifaceted system which feeds more than _____ consumers <ul style="list-style-type: none"> – changes in one part of the food system will have _____ on other parts of the food system <ul style="list-style-type: none"> • biosecurity _____ on one farm can impact other farms and industries
United States Government Biosecurity Programs	<ul style="list-style-type: none"> • Customs and Border Protection Agency's Agriculture Specialists monitor biosecurity risks of _____ travelers • United States Department of Agriculture (USDA)'s Animal and Plant Health Inspection Service (APHIS) monitors and controls diseases <ul style="list-style-type: none"> – _____ <ul style="list-style-type: none"> • biosecurity guidelines for backyard and commercial poultry growers – _____ <ul style="list-style-type: none"> • inspects and protects cattle herds from diseases such as BSE, Brucellosis and Tuberculosis – _____ <ul style="list-style-type: none"> • works to eliminate Scrapie from sheep and goat herds • USDA in partnership with U.S. Fish and Wildlife Services and the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service oversees the _____ <ul style="list-style-type: none"> – provides guidance for efficient, safe and effective national and international commerce of aquatic animals and protection of cultured and wild aquatic animals from foreign pests and diseases

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	<ul style="list-style-type: none">• _____/Agroterrorism is an intentional attack from an enemy aimed at disrupting the food supply<ul style="list-style-type: none">– both federal and state governments recognize bioterrorism and agroterrorism as a national security issue– _____<ul style="list-style-type: none">• established that every two years, the USDA will provide a list of toxins and agents which pose a high risk of damage to humans, animals, plants and animal or plant products– _____<ul style="list-style-type: none">• established a national policy to defend food and agricultural systems against terrorist attacks, major disasters and other emergencies• within this Directive the Strategic Partnership Program Agroterrorism Initiative works to identify and prioritize critical infrastructure, develop awareness and early warning capabilities, and evaluate response action criteria
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Biosecurity Risks	
Essential Question(s)	
1. What are common biosecurity risks in animal agriculture? 2. How are diseases transmitted?	
Key Concepts	
Biosecurity Risks	<ul style="list-style-type: none"> • Biosecurity risks can be broken into two categories: <ul style="list-style-type: none"> – _____ diseases <ul style="list-style-type: none"> • illnesses only transmittable from animal to animal or across animal species, but not to humans – _____ diseases <ul style="list-style-type: none"> • illnesses which can be transmitted between animals and humans • Illnesses are caused by _____ which include bacteria, viruses and other disease-causing microorganisms
Modes of Pathogen Transmission	<ul style="list-style-type: none"> • Modes of pathogen transmission include: <ul style="list-style-type: none"> – _____ <ul style="list-style-type: none"> • occurs when droplets in the air containing the pathogen are inhaled by a healthy animal – _____ <ul style="list-style-type: none"> • occurs when an infected animal touches a healthy animal and the pathogen is transmitted, typically through a secretion – _____ (inanimate objects) <ul style="list-style-type: none"> • occurs when an inanimate object such as a needle, brush or boot carries the pathogen until the object touches the animal and the pathogen infects the healthy animal – _____ <ul style="list-style-type: none"> • occurs when a healthy animal consumes contaminated food, water or dirt from its environment – _____ <ul style="list-style-type: none"> • occurs when a host organism which already is infected spreads the pathogen to a healthy animal

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Biosecurity Management	
Essential Question(s)	
1. What are common risk management techniques utilized in animal agriculture?	
Key Concepts	
Management Techniques	<ul style="list-style-type: none"> • Types of biosecurity measures put in place are impacted by: <ul style="list-style-type: none"> – the type of _____ <ul style="list-style-type: none"> • species on the operation • goals of the operation – the type of _____ <ul style="list-style-type: none"> • specie specific • transmission method • Types of biosecurity measures include: <ul style="list-style-type: none"> – _____ biosecurity <ul style="list-style-type: none"> • ability of the structures on an operation to keep pests and disease carriers out of barns, houses, pens and pastures • examples: <ul style="list-style-type: none"> – pest management procedures – repairing structural _____ – proper storage of feed and equipment – _____ – _____ biosecurity <ul style="list-style-type: none"> • management practices which reduce the introduction of pathogens to the herd or group • goal is to limit the number of _____ between livestock and other animals, humans and equipment • examples: <ul style="list-style-type: none"> – quarantining or _____ new animals or animals returning from travel prior to introducing them back into the entire herd or flock – controlling outside traffic

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	<ul style="list-style-type: none">- restricting _____ contact with animals- making sure proper clothing and shoe coverings are worn- requiring showers prior to entering or leaving the operation- properly cleaning equipment- not sharing equipment or tools with other operations- cleaning vehicles and trailers after travel- keeping _____ of vaccinations, morbidity and mortality
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