

Disease Transmission and Biosecurity Activity

Instructor Guide

LEARNING OBJECTIVES

- Explain ways zoonotic diseases might be spread to you or your animals on the farm and at exhibitions.
- Describe measures to prevent zoonotic disease spread to you and your animals on the farm and at exhibitions.

PREPARATION TIME: 10 minutes

ACTIVITY TIME: 20–30 minutes

MATERIALS

- Glo Germ
- Black light
- Stuffed animal covered with Glo Germ
- Feed samples in bags or buckets mixed with Glo Germ
- Bucket
- Popped popcorn mixed with Glo Germ
- Objects that could serve as fomites (brushes, halters, etc.) covered with Glo Germ
- Personal protective equipment (PPE), such as gloves, shoe covers, coveralls, face mask, etc.

PREPARATION

- Sprinkle Glo Germ in doorway.
- Sprinkle Glo Germ powder on example fomites, animals, and feed.

EXPLANATION OF ACTIVITY

Diseases can be spread by direct contact, indirect contact, aerosols or droplets, ingestion or oral, or vectors. Indirect contact transmission is the spread of pathogens through coming into contact with areas where animals live and roam, or objects or surfaces contaminated by an infected animal. Objects or surfaces that may become contaminated with pathogens are called fomites. Some examples of fomites are boots, cages, needles, bedding, clothing, vehicles, and restraint devices. Ingestion, or oral, transmission occurs when disease-causing agents are ingested from contaminated food or water or by licking or chewing contaminated objects in the environment.

INSTRUCTIONS

1. Divide the students into groups and tell them that they need to get their animal ready for a show. Give them the following tasks:
 - a. Have the students 'inspect' the stuffed animal to make sure it is ready for the show.
 - b. Have the students mix different feed samples in the bucket.
 - c. Have the students collect the equipment to bring to a show.
2. Use a black light to demonstrate how diseases can be spread by direct contact and on clothing, feed, buckets, equipment, fair food (popcorn), etc.
 - a. Demonstrate how pathogens can be spread by shoes by showing the black light throughout the room where students walked.
3. Have the students wash their hands and then use the black light again. Discuss the importance of handwashing and how and when you should wash your hands to prevent the spread of disease.
4. Have the students put on PPE and repeat the activity. Discuss how wearing proper PPE helps to prevent disease transmission. Discuss other biosecurity practices you could take that would also prevent the spread of disease.

DISCUSSION

- Discuss ways to prevent direct contact transmission:
 - Isolate sick animals
 - Wear gloves when working with sick animals
 - Wash your hands after having contact with animals or being in animal areas even if you did not touch the animals
- Discuss ways to prevent indirect contact transmission:
 - Avoid sharing equipment, or clean and disinfect equipment when sharing is necessary
 - Clean and disinfect any equipment used with sick animals or animals with skin lesions
 - Dispose of or wash boots and clothing after animal contact
 - Wash your hands after having contact with animals or being in animal areas even if you did not touch the animals
- Discuss ways to prevent aerosol transmission:
 - Increase distance between sick animals and healthy animals and people
 - Wear respiratory protection when working with sick animals
 - Provide fresh air to animals and people
 - Decrease humidity and odor build up in barns
 - Stay away from animal barns if you are sick
- Discuss ways to prevent oral transmission:
 - Wash your hands
 - After contact with animals or being in animal areas even if you did not touch the animals
 - After cleaning pens or contact with manure
 - Before preparing or handling food

- After going to the bathroom
 - Cook meat to the appropriate temperature
 - Store food at the appropriate temperature
- Discuss ways to prevent vector-borne transmission:
 - Use insect control products
 - Work with your veterinarian to check and treat your animals for parasites
 - Prevent standing water
 - Check for ticks on people and pets

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