

Objectives

At the end of this lesson you will know
the answers to all of these topics:

- Explain what biosecurity means.
- Describe why biosecurity is important.
- Identify what kinds of disease agents we try to prevent or control with biosecurity.
- Demonstrate disease agent-host-environmental interactions that result in disease.

Before you begin, let's talk!

- We're going to ask you to read, think, and try to figure out answers to complete some activities. We don't expect you to know the answers. The glossary has additional information to help you.
- We're going to use lots of diseases as examples. Don't worry! You don't need to know about the diseases to complete the activities. (But if you want to know more about them, check the glossary.)
- If you don't get the answers right the first time, keep trying! No harm, no foul.

Now, go explore, have fun, and learn something!

What is biosecurity?

Think about the word. It's kind of two words put together: "bio" and "security."

Bio comes from the Greek word for "life"

Security comes from the Latin word for secure or safe.

What do you think it might mean?

Please type in your answer here and press submit.

Submit

NEXT

There are a number of definitions for **biosecurity**, some simple and some more complicated.

Try putting this definition together.

Create a definition for “biosecurity”
by dragging phrases into the upper box
in the correct order.

“”

to prevent animals, and plants. Actions we take diseases of humans, or control

Let's look at some examples of how we can prevent or control diseases.

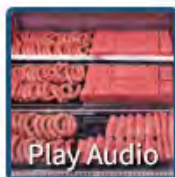
Drag and drop the pop-up text boxes into the correct column for our definition of biosecurity. *(Click on underlined words for more information.)*

Actions we take to prevent or control	diseases	of humans and animals.

Coccidiosis

Why should we care?

Listen to each person's story to find out.



Wait for the story to finish.

- Prevent animal illness and suffering

- Prevent zoonotic disease

- Prevent economic loss

- Keep food prices low for consumers

- Keep good public opinion

Keep trade open

BACK

NEXT

Let's think about diseases

Put your cursor on the words below to see what they mean.
Then drag the word to complete the correct sentence.

non-infectious **infectious** **host** **agent** **zoonotic**

Some diseases are caused by a disease
and can pass from person to person or animal to animal.
These are called _____ diseases.

Other conditions can be caused by poor nutrition, injury,
cancer, genetics, etc.; these are _____ causes.

Diseases that can pass from animals to humans or humans to animals
are called _____ diseases.

Infectious agents get inside the _____ (person, animal, or plant)
and multiply or produce toxins, causing disease.

For biosecurity, we are most concerned with infectious agents.

With the use of a microscope you, can see that they are all around us.

Draw lines connecting each word to a picture.
Roll over the images and words to learn more.



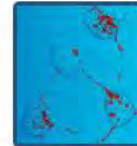
Parasites

Bacteria

Viruses

Fungi

Prions



Agents and diseases

Roll over all the images to learn more.

But when and how does
this **agent**...



...cause this **disease**?

You must roll over both images
before you can go to the next slide.

Diseases are like accidents...

They both involve three factors.

Listen to the narration
as you watch the slideshow.

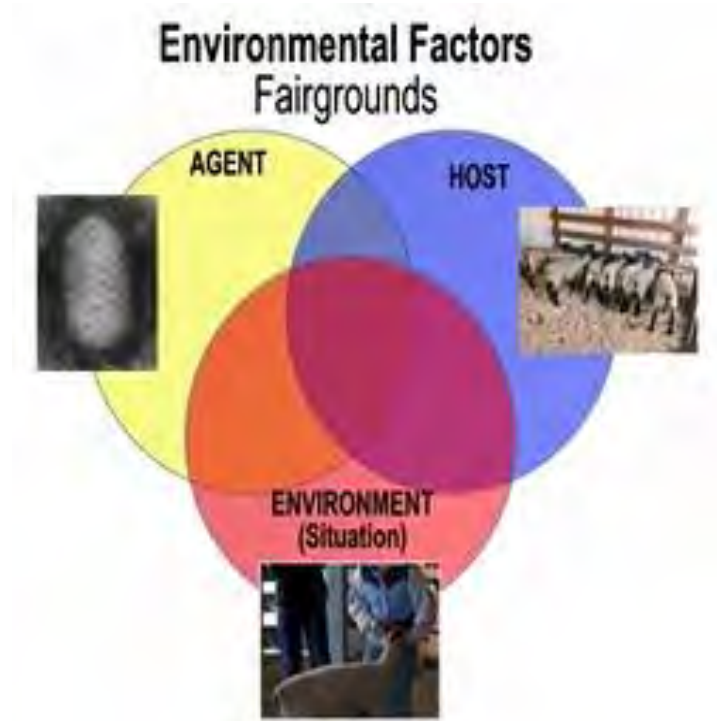


Begin the Slideshow

Display Transcript

Diseases are like accidents...

They both involve three factors.



Diseases are also accidents.



The severity of the disease depends on interactions between the host, agent, and environment.

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Diseases are also accidents.

When we try to prevent agents
from
making animals or humans sick,
we call it
BIOSECURITY.

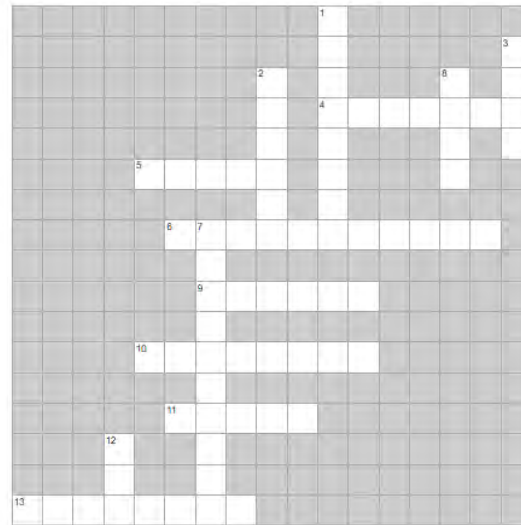
[BACK](#)

Go ahead to the next activity!

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Let's review!

Complete the crossword puzzle using key terms from today's lesson.



Word Bank

(You can click on the words to cross them out after using them in the puzzle)

PRION
BACTERIA
NUCLEUS
HOST
BIOSECURITY
FUNGUS
VIRUS
AGENTS
ORGANISM
ZOOONOTIC
INFECTIOUS
CELL
DNA

Across

4. An internal cell structure containing chromosomes that determine heredity
5. Abnormal protein that can cause a fatal brain disease
6. Actions to prevent or control diseases
9. Living organism such as mold that lives on decaying material or a host
10. One-celled organisms that can be found anywhere
11. Very small particle consisting of a protein coat surrounding DNA or RNA that can only replicate in living cells and may or may not cause disease
13. A living thing with many parts that work together

Down

1. Disease that can be passed between animals and humans
2. Things capable of causing disease
3. A living thing that can be affected by disease-causing agents
7. Spread by a disease-causing agent
8. Very small structure with a nucleus surrounded by a wall; the basic building block of tissues
12. Chains of chemical units in a twisted ladder arrangement that determine heredity

Reset Puzzle

Check My Answers

Here are the main points we want you to remember.

Can you answer these questions?

	Your answers:	Compare your answers:
What is <u>biosecurity</u> anyway?	Please type in your answer here and press the submit button to the right.	<input type="submit" value="Submit"/>
Six reasons why we should care	Please type in your answer here and press the submit button to the right.	<input type="submit" value="Submit"/>
What kinds of <u>disease agents</u> do we try to prevent or control with <u>biosecurity</u>?	Please type in your answer here and press the submit button to the right.	<input type="submit" value="Submit"/>

1 of 1

What is Biosecurity and Why Should We Care?



Glossary:

- **Agents** - Things capable of causing disease
- **Bacteria** - One-celled organisms that can be found anywhere
- **Biosecurity** - Actions to prevent or control diseases
- **Cell** - Very small structure with a nucleus surrounded by a wall; the basic building block of tissues
- **DNA** - Chains of chemical units in a twisted ladder arrangement that determine heredity
- **Fungus** - Living organisms such as molds that live on decaying material or a host (Plural = fungi)
- **Host** - A living thing that can be affected by disease-causing agents
- **Infectious** - Spread by a disease-causing agent
- **Non-infectious** - Disease conditions caused by poor nutrition, injury, cancer, genetics, etc. and are not spread to other individuals
- **Nucleus** - An internal cell structure consisting of chromosomes that determine heredity
- **Organism** - A living thing with many parts that work together
- **Parasite** - An organism that lives in or on another organism (its host) and benefits by deriving nutrients at the host's expense
- **Prion** - Abnormal protein that can cause a fatal brain disease
- **Virus** - Very small particle consisting of a protein coat surrounding DNA or RNA that can only replicate in living cells and may or may not cause disease
- **Zoonotic** - Disease that can be passed between animals and humans

What is animal biosecurity?

Actions we take to prevent or control diseases of animals and humans.

Why should we care?

- Prevent animal illness and suffering.
- Prevent zoonotic diseases.
- Prevent economic loss.
- Keep food prices low for consumers.
- Keep good public opinion.
- Keep interstate and international trade open.

What types of diseases do we try to prevent or control with biosecurity?
Infectious diseases caused by *bacteria, fungi, parasites, prions, a*

**Disease occurs when the right agent and the right host are together in just the right environment.
We use biosecurity to prevent disease accidents.**

You're all done! This was the last activity!!!

PROTECTING HERD HEALTH

An Animal Disease Biosecurity Coordinated Agricultural Project



Biosecurity

What Is "Animal Biosecurity"
and Why Should We Care?

Module 1

Certificate of Completion

type your name here

Signature

type leader, parent,
or guardian name here

type date here

Date

Credits

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References

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www.cfsph.iastate.edu