



Produce Safety

Activity 1: Bacterial Growth Simulation

Jellybeans are used to provide a visual representation of bacteria's exponential growth pattern.

KEY TERMS

Bacteria: single-celled microorganisms that can multiply in environments outside OR Inside a host organism, such as a person, farm animal, or wild animal. Most can multiply very quickly, reaching high numbers in a short period of time if they are in the right environment. Examples of bacteria include E.coli, Salmonella, and Listeria monocytogenes.

Cross-contamination: cross-contamination means the transfer of harmful microorganisms called pathogens or germs from one person, object or place to another.

Microorganisms: organisms including yeasts, molds bacteria, viruses, protozoa and parasites that are so small they can only be viewed through a microscope

Pathogens: commonly called "germs"; microorganisms that are capable of causing disease or illness; examples include bacteria, viruses and parasites

SUPPLIES NEEDED

- Jellybean jars provided by the facilitator





Produce Safety What makes produce unsafe?

How do you do this?

The first part of this activity will be a discussion about bacteria and how they grow. Think about types of bacteria that you might already be familiar with. What type of environmental conditions do bacteria live and grow well under?

Next, you'll look at a visual example of how bacteria grow using jellybeans to represent the number of bacteria present over a period of time given ideal environmental conditions.

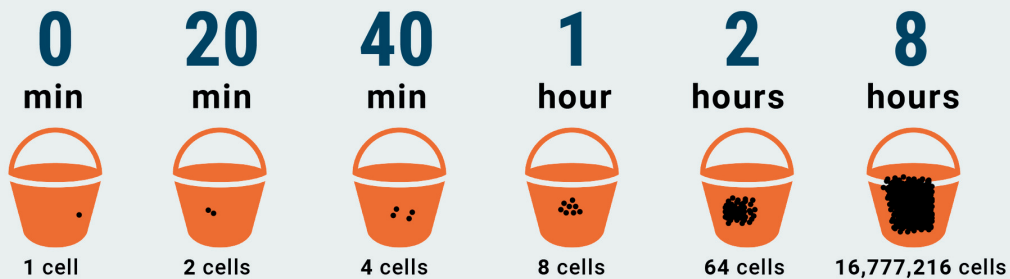
BACTERIA ON THE FARM

IT ALL STARTS WITH

ONE...

Bacteria can multiply **once every 20 minutes.**

One bacterium can turn into thousands in the matter of hours.



Sanitizing your equipment, tools, and other food contact surfaces often can help slow multiplication rates or prevent contamination from occurring.



**Your equipment may be visibly free of dirt,
but that doesn't mean it isn't covered in bacteria.**



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Source: Produce Safety Alliance Grower Training Module 1



What does it mean for my farm?

- How would you explain bacterial growth and how it can impact produce safety on the farm to a new employee?
- What are some aspects of your farm's operation that could pose a cross-contamination risk?
- Discuss how worker hygiene and sanitation practices can reduce the risk of bacteria being present on food or food contact surfaces on the farm.
- Walk through your farm with an eye toward conditions in which bacteria thrive: food, acidity, time, temperature, oxygen, and moisture (F.A.T.T.O.M). What are some areas that will require vigilance to prevent the spread of bacteria?

RESOURCES FOR ADDITIONAL LEARNING

- Bacterial Growth Video

