

The background of the slide is a close-up, high-density photograph of numerous yellow corn cobs. The cobs are arranged in a somewhat chaotic but repetitive pattern, filling the entire frame. The lighting is bright, highlighting the texture of the kernels and the dried husks at the ends of the cobs.

Post-Harvest Food Safety

Purdue University
Feng Lab

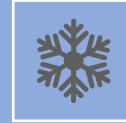


Post-Harvest Water

What is Post-Harvest Water?



Rinsing



Icing



Washing



Moving Produce



Cooling



Handwashing



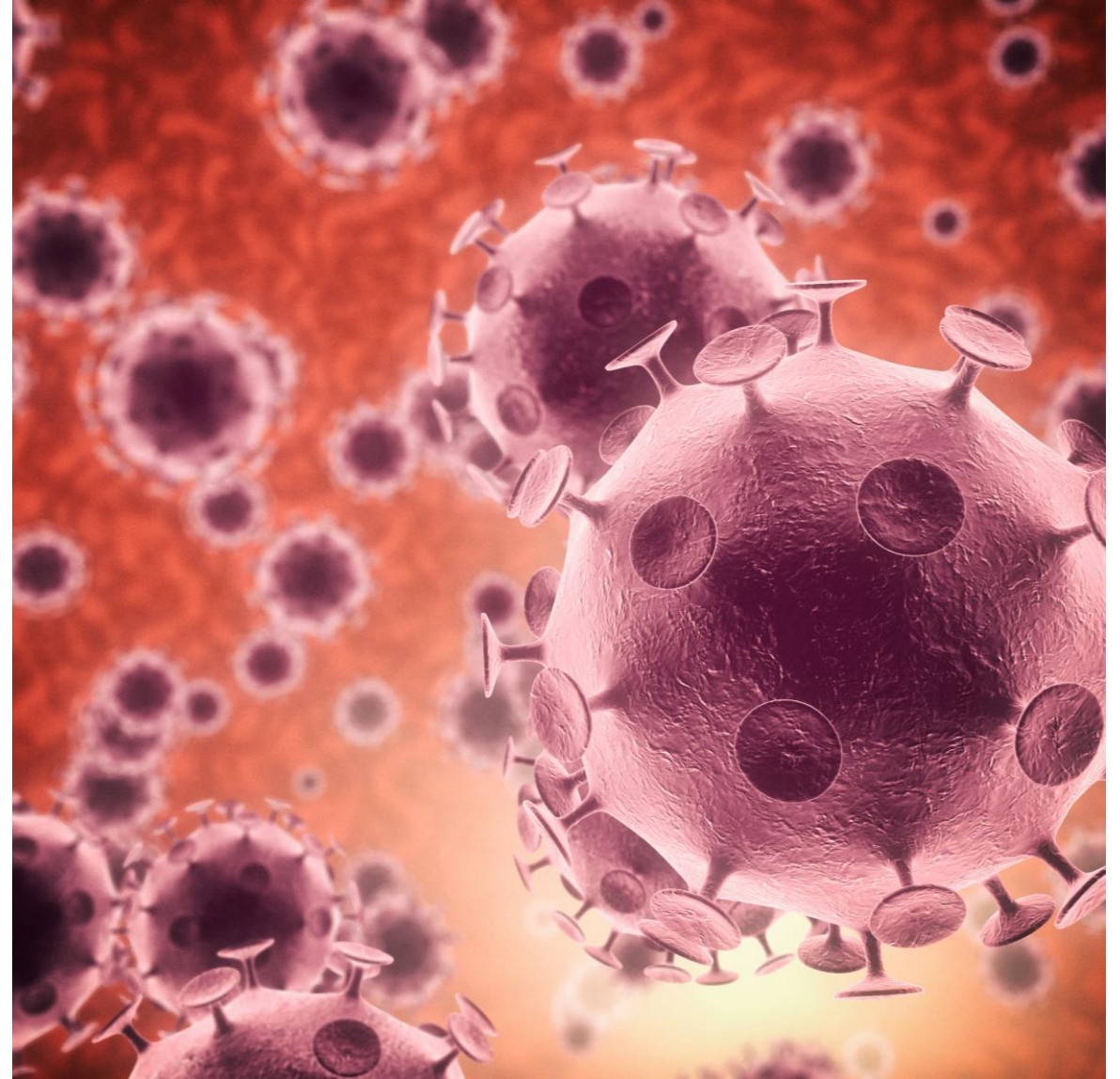
Waxing



Any food contact surfaces

Why is post-harvest water a concern?

Post harvest water may introduce the risk of biological contamination to produce



Post-Harvest Water Safety Tips

No detectable
generic E. coli in
100 mL water
sample

Sanitizer use to
prevent cross
contamination
between batches

Change water
when dirty

Clean and sanitize
tanks/bins
washers

Monitor water
temperature to
prevent infiltration

Document all post
harvest activities



Worker Hygiene

Why is Worker Hygiene Important?

Sources of Harmful Microorganism

Feces from people or animals

Contaminated raw food ingredients

Ill coworkers

Contaminated surfaces

Examples of Harmful Microorganisms

Salmonella

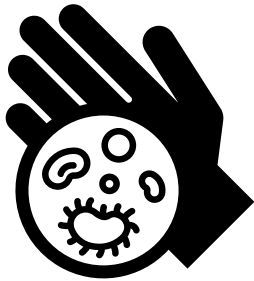
Norovirus

Pathogenic *E. coli* (*E. coli* O157:H7)

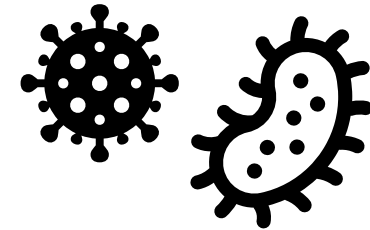
Hepatitis A

Why is Handwashing Important?

- ☑ Prevent illness and spread of harmful microorganism
- ☑ Removes microorganisms from hands



Remember That:



**People frequently
touch their face**

**Microorganisms
can get into food**

**Microorganisms
can be transferred
to surfaces**

When to Wash Your Hands

Before entering the production area



Every time you return to the production area



After using the restroom



After sneezing or blowing your nose



After returning from lunch



A pair of hands, palms facing each other, with a blue-tinted background. The hands are positioned as if about to clasp or are in the process of washing. The background is a blurred, textured surface, possibly a wall or a large object, with a blue overlay.

Transitioning from Field to Produce Handling Areas

Change dirty clothes

Hair and beard nets

Wash hands with hot soapy water



Facility Sanitation

Produce Handling Areas



Cleaning vs. Sanitizing

Cleaning

- The removal of any type of soil

Sanitizing

- A process that destroys vegetative cells of pathogens and reduces other undesirable microorganisms

Cleaning and Sanitation Steps

Step 1 Rinse with water

- No detectable generic E. coli in 100 mL sample
- Rinse top to bottom
- Remove majority of soil

Step 2 Scrub

- Scrub surface with appropriate detergent
- Remove the rest of the soil

Step 3 Rinse with water

- No detectable generic E. coli in 100 mL sample
- Rinse bottom to top

Step 4 Sanitize

- Apply sanitizing method (follow direction on sanitizer label)
- Thermal or Chemical
- Apply top to bottom

Facility Pest Management

- Don't use baited traps inside packing areas
- Keep doors and windows closed as much as possible
- Store produce at least 1 foot from the walls to aid in visual inspections and trap monitoring
- Keep produce covered when possible
- Maintain a physical record of pest management system and record when traps are set



A top-down view of approximately 18 hazelnuts scattered on a dark, textured surface. The nuts are mostly whole, showing their characteristic smooth, reddish-brown, ribbed shells. One nut on the left is cracked open, revealing the light brown, textured interior. A semi-transparent grey rectangular box with rounded corners and a thin green border is centered over the image, containing the text "Chemical and Physical Contamination" in white.

Chemical and Physical Contamination

What are Chemical Hazards?

Naturally Occurring

- Allergens
- Mycotoxins

Unintentionally Present

- Detergents
- Oil from Equipment
- Pesticides
- Allergens

Chemical Hazard Prevention



Proper sanitation to avoid allergen cross contamination



Use only food grade equipment, lubricants, oils and other chemicals



Keep cleaning products in a separate location from pesticides and in clearly labeled areas

What are Physical Hazards?

Physical

- Glass
- Metal
- Plastic
- Wood

Example Sources

- Broken lights
- Poorly maintained equipment
- Debris from field

Physical Hazard Detection

Metal detectors

Magnets

X-ray

Visual inspection of equipment



A large stack of papers and folders is shown, with a central graphic overlay consisting of two large, light gray triangles pointing towards each other, forming a diamond shape. A dark gray banner with a green border is positioned horizontally across the center of the stack, containing the text "Regulations to Consider".

Regulations to Consider

Food Safety Modernization Act (FSMA)

Preventive Controls for Human Food Rule

Preventive Controls for Animal Food Rule

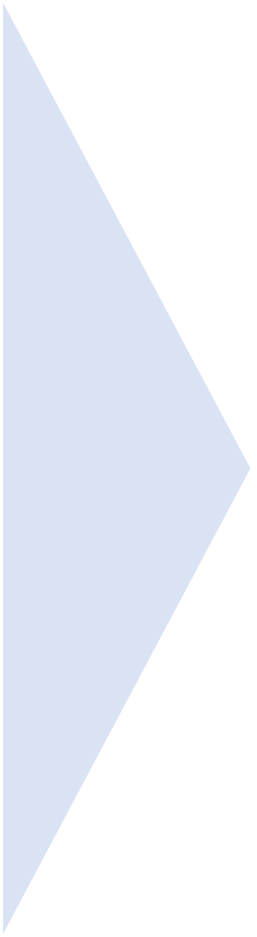
Produce Safety Rule

Foreign Supplier Verification Rule

Sanitary Transport Rule

Food Defense Rule

Third Party Accreditation and Certification Rule



**7
Rules
of
FSMA**

Produce Safety Rule

Agriculture
Water

Biological Soil
Amendments

Sprouts

Domesticated
and Wild
Animals

Working Training
and Health and
Hygiene

Equipment ,
Tools and
Building



Food Safety Modernization Act (FSMA)

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About 48 million people in the U.S. (1 in 6) get sick, 128,000 are hospitalized, and 3,000 die each year from foodborne diseases, according to recent data from the Centers for Disease Control and Prevention. This is a significant public health burden that is largely

Content current as of:

06/09/2022

Regulated Product(s)

Food & Beverages

Law(s) & Regulation(s)

Food Safety Modernization Act

A close-up photograph of a white lamb's face, looking directly at the camera. The lamb has soft, white wool and prominent red inner ears. The background is a blurred, textured surface of wool. The text "Thank you!" is overlaid in white, sans-serif font across the center of the image.

Thank you!

Acknowledgement

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