

# On FProduce Safety: Certifications and Regulations

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# Introduction to Produce Safety



Key points of the FSMA Produce Safety Rule and an overview of USDA GAPs

Photo Credit: Produce Safety Alliance

# Overview

- Importance of food safety
- Produce safety regulations/certifications
- On-farm produce safety basics
- Water testing
- Upcoming trainings, resources



# Why food safety?

- Provide products as safe as possible
- Protect markets - reduce liability
- Assure customers that product quality and safety, and their health, is important to you
  - impresses customers
- Meet regulations



Photo Credit: Produce Safety Alliance

# Food safety can improve quality, shelf life

- Many safety practices also help quality
  - Temperature control
  - Sanitation
- More pounds of product to sell
  - Reduce product water loss
- Prevents early spoilage and bad appearance- extends shelf life
  - Lost sales and profits



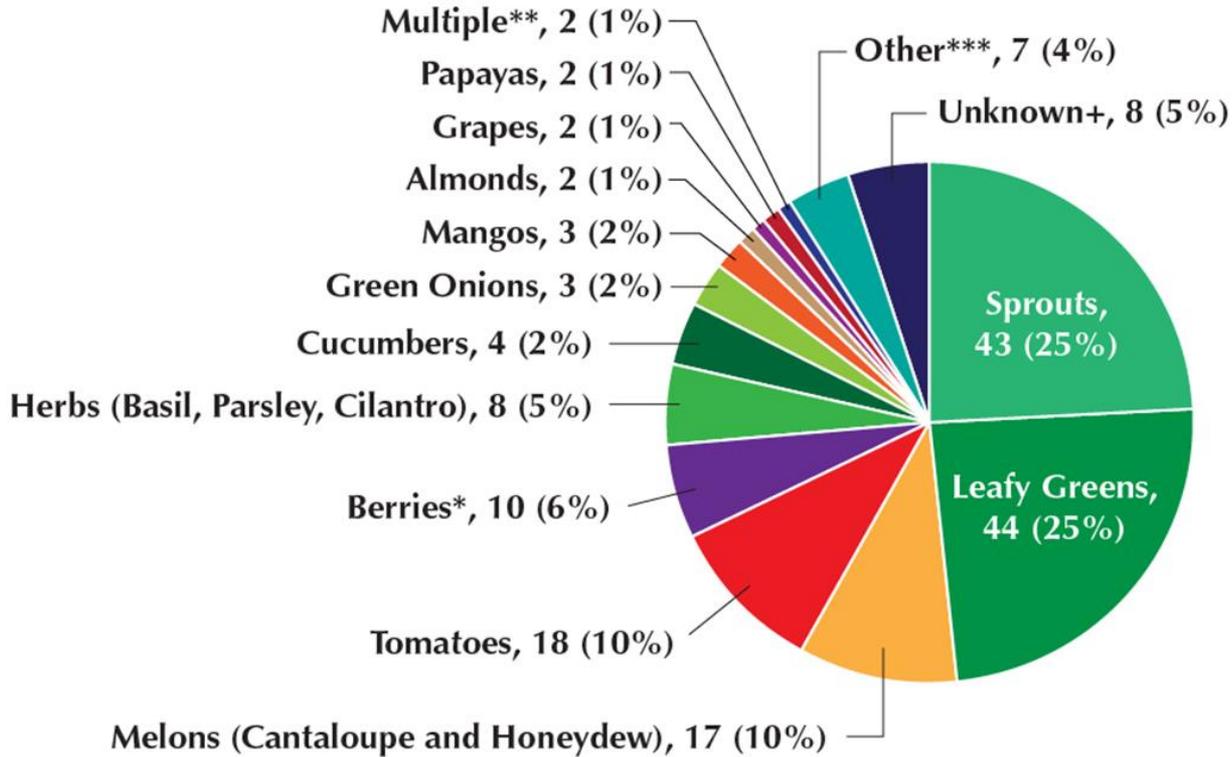
Photo Credit: Produce Safety Alliance

# Foodborne Illness (FBI)

- Each year, CDC estimates 1 in 6 people get sick from foodborne illness in US
  - ~48 million get sick; ~128,000 hospitalized
  - ~3,000 deaths
  - Highly under-reported \*\*
    - Does occur in small scale ag
- Outbreaks continue to occur
- Affects markets; **reduces consumer confidence**
- Populations most vulnerable to foodborne illness are the young, old, pregnant, and the sick

# Foodborne Illness (FBI)

FDA Outbreaks Linked to Produce Contamination Likely Prior to Retail: 1996–2014



Graphic Credit: Produce Safety Alliance

# **Produce Safety: Certifications and Regulations**

# What are GAPs and being GAP Certified?

- Good Agricultural Practices
  - Good practices for raising produce safely
- GAPs certification
  - NOT regulatory requirement; market driven
  - Required by certain produce buyers, banks
  - Administered by USDA or 3<sup>rd</sup> party



# Five Main Parts of FDA Food Safety Modernization Act (FSMA)

1. **Produce Safety Rule** – *Final rules: Nov 13, 2015*
2. Preventive Controls for Human Food – *Final rule published Sept 10, 2015*
3. Preventive Controls for Animal Food- *Sept 2015*
4. Foreign Supplier Verification Program
5. Accredited Third Party Certification

# FDA Food Safety Modernization Act

## Produce Safety Rule

- Final rule released in November 2015
- Focus on growing, harvesting, packing, holding produce
- First ever government regulation for the production, harvest, and handling of fruits and vegetables
- Similar requirements to USDA GAPs (buyer requirement)

# FSMA Produce Safety Rule

## Who is covered?

- Sell  $\leq$  \$25,000/ year in produce sales (on average over previous 3 years) **EXEMPT**
- Produce is rarely consumed raw (pumpkin)  
**EXEMPT**
- Produce that will be commercially processed before consumption (tomatoes sold to a canner)  
**EXEMPT**
- On average (over past 3 years), have
  - <\$500,000 annual food sales AND
  - Majority of food sold directly to “qualified end user”
  - **EXEMPT, but** have some record-keeping requirements
- Everyone else covered; NO exemption if linked to foodborne disease outbreak

# Produce Safety Rule Compliance

Business Size	Compliance date
All other businesses (>\$500K)	Jan 26, 2018
Small businesses (>\$250K-500K)	Jan 26, 2019
Very small businesses (>\$25K-250K)	Jan 26, 2020

*\*Compliance dates for certain aspects of the agricultural water requirements allow an additional two-**four** years beyond each of these compliance dates.*

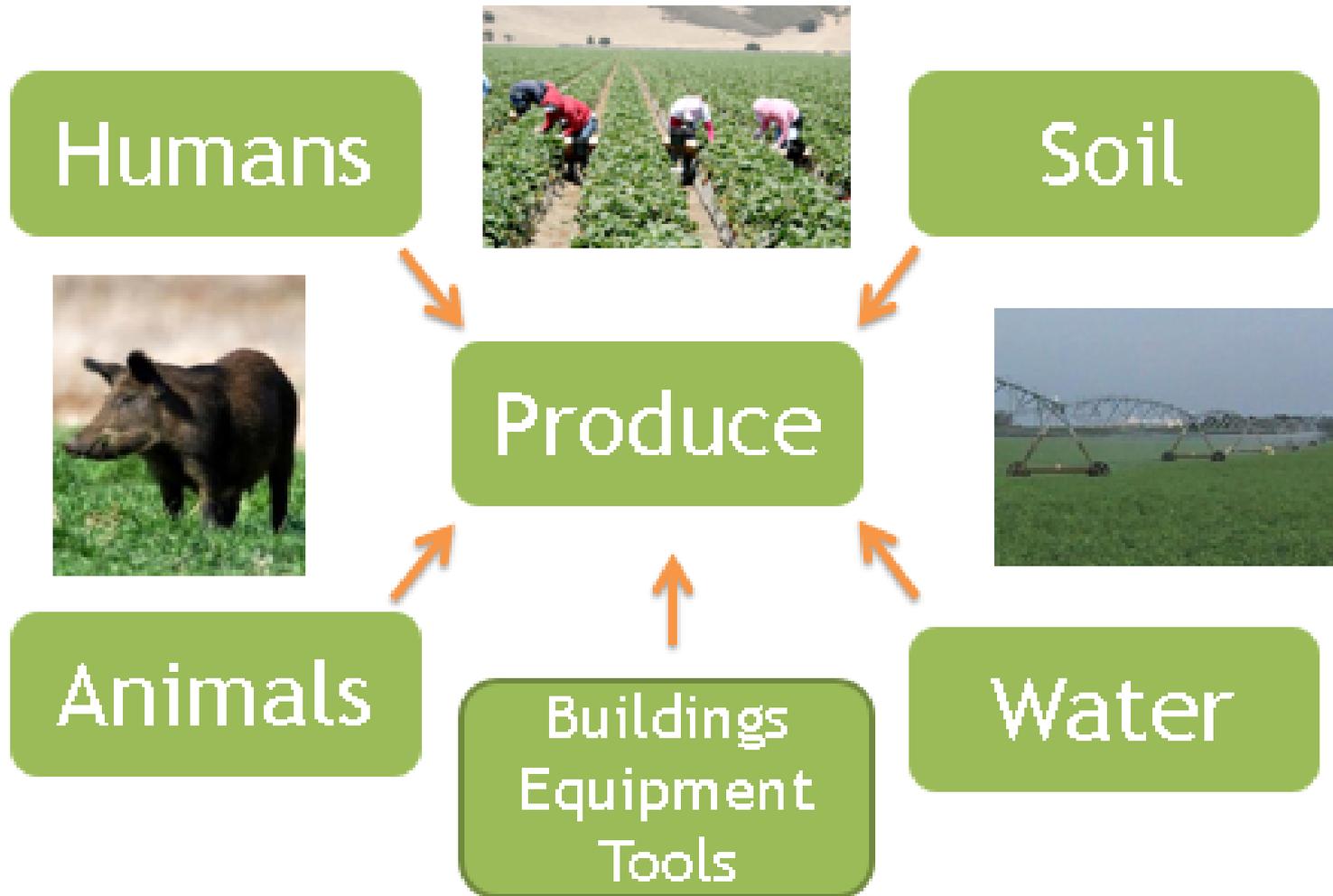
\*Note that routine inspections will begin one year after compliance dates

Credit: Produce Safety Alliance

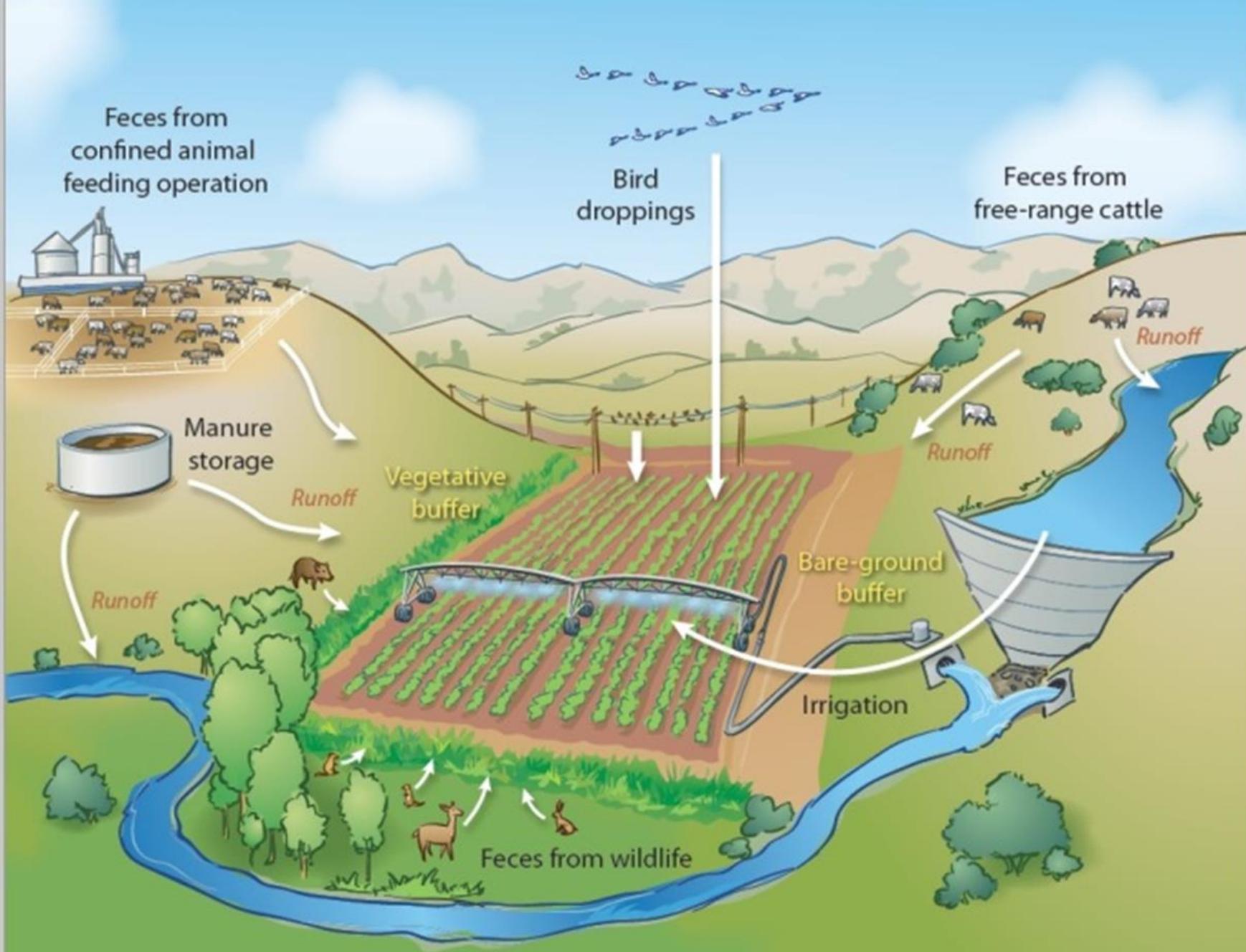
# Produce Safety Rule

- Similar to GAPs - Good Agricultural Practices
  - Agricultural water (irrigation, wash)
  - Biological soil amendments (manure)
  - Domesticated and wild animals
  - Worker training, health and hygiene
  - Equipment, tools, buildings, & sanitation
  - Growing, Harvesting, Packing, Holding

# The Big Picture



Credit: Produce Safety Alliance



Credit: Produce Safety Alliance

# Soil Amendments

Raw manure and other soil amendments can be a source of contamination if not properly handled and applied.

- Application too close to harvest
- Improper/incomplete treatment
- Improper storage
- Runoff
- Wind spread
- Cross-contamination due to improper sanitation procedures



Credit: Produce Safety Alliance

# Soil contamination

- Potential sources of contamination:

- **Includes things that have happened on that land in the past and things occurring now**
- Flooding
- Carcasses, Dump sites
- Septic leaks or run-off
- Location of manure and/or compost piles

- Best Practices

- Crops located away from animals, manure or compost piles (up slope if possible)
- Mediate with ditches, berms, buffer strips or hedgerows (protect from run-off)



# Soil Contamination vs. Soil Fertility?

- 120 days between raw manure application/livestock rotations and harvesting
  - Where edible portion is in contact with soil
  - Edible portion not in contact with soil (i.e. sweet corn), 90 days

# On-Farm Composting

- Keep compost records: temperatures & turning
- Scientifically valid treatment process
- Watch out for re-contamination!



# Compost and GAPs Certification

**Must use a scientifically valid process:**

Either...

Compost on your farm (see sheet for composting standards and records required for GAPs Certification)

Or...

For purchased compost, request a letter from the seller indicating their composting standards.

# Agricultural Water

Where do you use water in your produce operation?

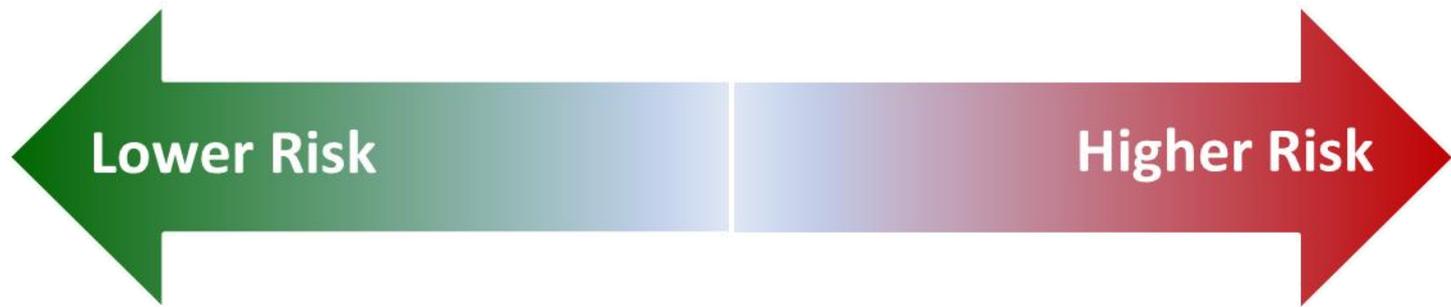
How can you reduce potential contamination from water in your produce operation?

# Agricultural Water

Water can carry and spread human pathogens, contaminating entire fields or large amounts of produce.

- Production water
  - Irrigation, crop sprays, frost protection
- Postharvest water
  - Fluming, cooling, washing, waxing, cleaning
- Unexpected events
  - Flooding, runoff

# Agricultural Water Probability of Contamination



**Public Water Supply**



Treated

**Ground Water**



**Surface Water**



Open to  
Environment

Credit: Produce Safety Alliance

# Agricultural Water

- Test all water sources
  - Using municipal water- get results from city
  - Well and surface waters- get tested
- Production water: each source must have:
  - $\leq 126$  colony forming units (CFU) generic E. coli/ 100 ml water – geometric mean AND  $\leq 410$  CFU statistical threshold value (FSMA)
  - Online calculators available to help calculate:  
<http://wcfs.ucdavis.edu/>
- Post-harvest water: potable
  - No detectable generic E.coli mL water sample



# Assess Delivery Method

- Overhead Irrigation- ok for safety and water conservation
- Trench or furrow – better
- Drip or drip under plastic- best practice



# Domesticated and Wild Animals

- Domesticated and wild animals can carry and transmit human pathogens to produce
  - Animal feeding, rooting, and movement through fields
  - Animals can contaminate water sources
  - Manure runoff
- Prevention measures, monitoring, and measures taken if intrusion or possible contamination
- Do Not harvest produce that is visibly contaminated with feces or likely to have been contaminated



# Minimizing Animal Contamination (and Crop Damage)

## Decoys



## Fencing & Netting



Credit: Produce Safety Alliance

# Harvesting

- Pre- Plant and Pre-Harvest assessments
- Attempt to keep produce cool or cool quickly after harvest
- Keep non-root crops as clean harvest and washing



Credit: Produce  
Safety Alliance



# Harvest Containers and Tools

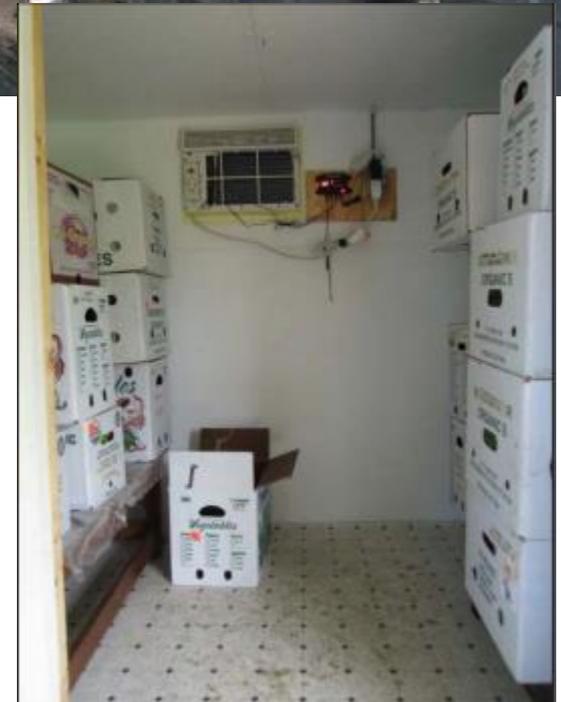


Washable harvest containers



Clean and sanitize  
harvest tools

# Example of Simple Pack-Shed



# Smooth & cleanable surfaces



*This cooler space was finished with Trusscore PVC panels resulting in a smooth, cleanable surface.*

# Pack shed example





**Porta potty with handwashing station nearby**



1. Wet hands



2. Use liquid soap



3. Lather, rub and count to 20



4. Rinse



5. Towel or air dry hands



6. Turn off taps with towel or your sleeve

## Post hand-washing signs

# Resources?

<https://postharvest.ucdavis.edu/>

<https://cals.cornell.edu/produce-safety-alliance/training/train-trainer-course>

<https://cals.cornell.edu/national-good-agricultural-practices-program>

# Question?

Survey Link for feedback



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