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## Food Safety: The Overview

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### What We'll Cover

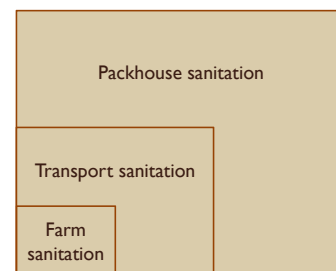
- FSMA highlights
- What the heck is HACCP?
- Handling Leafy Greens
- Do's and Don'ts

### The Past as Prelude

- 2008-Spinach Outbreak
- 2009-Congress proposes FSMA
- January 2011-FSMA Passed.
- January 2013-Produce Safety Rule Released.
- Nov 2013-Comment period closed

### Overall Approach

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## Food Safety Modernization Act (FSMA)

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- Produce Rule includes:
  - Manure Source, Use, and Handling
  - Irrigation and Wash Water Sources
  - Employee Training and Hygiene
  - Farm and Equipment Sanitation

## Exempt Under FSMA

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- Asparagus
- Beets
- Brussels Sprouts
- Collard Greens
- Eggplant
- Kale
- Kidney Beans
- Parsnips
- Pinto Beans
- Potatoes
- Rutabaga
- Sugarbeet
- Sweet Corn
- Turnips
- Winter Squash

## FSMA Implementation

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- Two years for firms over \$500,000.
- Three years for firms \$250,000.
- Four years for firms above \$25,000.

*All farms above \$25,000 are subject to the rule.  
Farms below \$500,000 are qualified exempt.*

## Manure Use

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- Nine month preharvest window for RAW manure.
- 45 day preharvest window for compost with ANIMAL DERIVED components.

*If you can prove that what you are doing doesn't compromise the safety of the produce, it is considered OK.*

## Compost

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- Static Compost: minimum of 131 F for 3 days then “adequate curing, which includes proper insulation”
- Turned Compost: minimum of 131 F for 15 days then “adequate curing, which includes proper insulation”

*If you can prove that what you are doing doesn't compromise the safety of the produce, it is considered OK.*

## Irrigation Water

- Agricultural Water comes in **direct contact** with the **edible portion** of the plant.
- Indirect water does **NOT** come into **direct contact** with the **edible portion** of the plant.

## Irrigation Water

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- Agricultural water must meet the following standards:

*No more than 235 CFU generic E. coli in any one sample AND a rolling average of 126 CFU over the last 5 samples*

- This is the current Recreational Water Standard

## Harvest Water

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- Generic E. coli per 100 ml are what is measured.

*No detectable generic E. coli in wash water, flume water, spray water, or dunk tank water.*

## Water Testing

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- Surface water with regular runoff (ie. rivers, lakes and streams) must be tested every 7 days.
- Surface water pumped from a well (ie ponds) must be tested monthly.
- Groundwater sources should be tested at the start of the season then every three months thereafter the first year, then once annually.

## Water Testing Exceptions

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- If no direct contact with the plants is made, then the water is exempt from needing to be tested. (ie. Drip irrigation)
- Public water systems are not required to be tested **HOWEVER** the grower needs to maintain results or a certificate of compliance

## Employee Training and Hygiene

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- Employees must be trained annually.
- Training must include:
  - Proper hygiene
  - Signs and symptoms of illness
  - Handling contaminated produce.
- A record of training must exist for the employees and be maintained by the farmer.

## Farm Sanitation

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- Restriction of domestic animals in production areas. (Working animal exemption)
- Wild animals should be monitored and “reasonable precautions” should be taken to prevent contamination.
- Restriction of domestic and wild animals in packing areas.

## Record Retention

- Records must be on-site for at least 6 months.
- After 6 months, records must be stored so as to be accessible on-site within 24 hours.
- Records must be retained for 2 years.
- Can be maintained via hard copy or digitally.

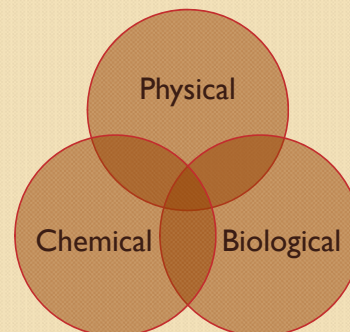
## What's Next?

- Revised proposed rule language will be announced on key provisions this Summer.
  - water quality standards and testing
  - using raw manure and compost
  - mixed-use facilities
  - procedures for withdrawing the qualified exemption for certain farms
- Comment will be accepted on **ONLY THESE PROVISIONS**.
- By Court order, the final rule **WILL** be in place by May 2015 at the latest.

## Hazard Analysis Critical Control Points (HACCP)

- A process that looks at all the **possible** hazards at every step in your operation.
- Where the hazards are **probable**, controls are put in place to reduce/eliminate the risks.

## What is a Food Safety Hazard ?



## Seven Steps to HACCP

- Conduct a Hazard Analysis
- Identify Critical Control Points
- Establish Critical Limits
- Establish Monitoring Procedures
- Establish Corrective Actions
- Establish Verification Procedures
- Keep a Record of Activities

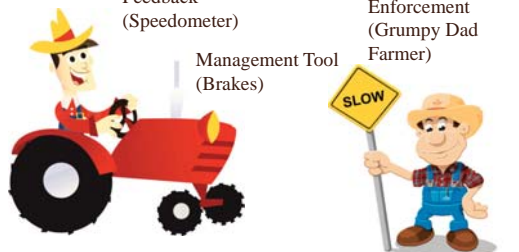
## Operationalizing HACCP

Responsible Party  
(Driver)

Feedback  
(Speedometer)

Management Tool  
(Brakes)

Enforcement  
(Grumpy Dad  
Farmer)



## What Constitutes Crop Risk?



## Leafy Greens are Special

- The 2009 Food code classifies leafy greens as a food requiring Temperature Control for Safety (TCS).
- This means leafy greens need to stay refrigerated from the time they are washed until they reach the consumer



## Greens Best Practices

- Decrease handling
  - Cross-contamination
- Food-grade containers
  - Garbage bags are not food-grade
    - Treated with mold-inhibiting compounds
- Reuse of grocery bags
  - May have contamination by food previously stored
- Coverage



## Do's and Don'ts

## Do Clearly Mark Trash Bins

- Food totes or buckets **MUST** only be used for food.
- Trash totes or buckets used for trash should be clearly marked.



## Do Wash and Sanitize Zone 1

### • Procedure

- Rinse
- Wash
- Rinse
- Sanitize
- Example



- Food contact surfaces – 200 ppm chlorine
  - 1 tablespoon plain household bleach per gallon of water
- Surfaces not contacting food – 400 ppm chlorine
  - 2 tablespoons plain household bleach per gallon of water

## Do Wash Your Hands

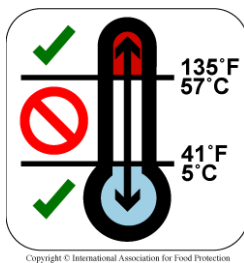
- Provide adequate bathroom facilities
- Provide adequate hand washing facilities
- Within ¼ mile from each worker in the field or packing shed



## Handwashing Demonstration

## Do Calibrate Thermometers

- Adopt a protocol for calibrating thermometers
- Once a year, calibrate all thermometers.
- Record your findings on a log sheet.



## Thermometer Calibration



## What's Next

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- Four Flash Trainings coming up...
  - Hazard Analysis
  - Traceability
  - Water Quality
  - Writing an SOP
- The goal is implementing small practices piece by piece on your farm.