

Welcome to

# SafeBites

from FoodHandler

We will begin shortly

[www.foodhandler.com](http://www.foodhandler.com)

FoodHandler®

SafeBites

## FOOD SAFETY BEST PRACTICES PART 1: Fresh Produce and Locally Grown Foods

Catherine Strohbehn, PhD, RD, CP-FS  
Extension Specialist/Adjunct Professor  
Human Sciences Extension and Outreach  
Iowa State University  
May 11, 2016

[WWW.FOODHANDLER.COM](http://WWW.FOODHANDLER.COM) | 800.338.4433 EXT.2

FoodHandler®

SafeBites

## Content Summary

- The proper care and handling of fresh produce at links of the food chain from farm to fork, whether from conventional or local sources
- Steps that can be taken to demonstrate *reasonable care* in minimizing risks of food borne illnesses from fresh produce

[WWW.FOODHANDLER.COM](http://WWW.FOODHANDLER.COM) | 800.338.4433 EXT.2

FoodHandler®

SafeBites

## Objectives: ...

At the end of the session, participants will...

- Understand risks of foodborne illness from fresh produce
- Identify best practices in procurement from local growers and national vendors
- Know proper produce handling practices
- Apply best practice in operations

[WWW.FOODHANDLER.COM](http://WWW.FOODHANDLER.COM) | 800.338.4433 EXT.2

FoodHandler®

SafeBites  
From FoodHandler

## Fresh Produce Risks

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

FoodHandler

SafeBites  
From FoodHandler

## Why worry?

*Really, fresh produce can cause foodborne illnesses?*

- CDC study in 2013 found 46% reported illnesses from 1998 to 2008 attributed to fresh produce and nuts.
- Media attention to national outbreaks:
  - salad greens (2006)
  - tomatoes (2008)
  - Alfalfa sprouts (2009)
  - Cantaloupe (2011 and 2012)



\* Painter JA, Hoekstra RM, Ayers T, Tauxe RV, Braden CR, Angulo FJ, et al. 2013. Attribution of foodborne illnesses, hospitalizations, and deaths to food commodities by using outbreak data, United States, 1998–2008. *Emerging Infectious Diseases*, 19(3). March. <http://dx.doi.org/10.3201/eid1903.111866>

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

FoodHandler

SafeBites  
From FoodHandler

## More recently...

- Chipotle had major outbreaks late 2015 from:
  - Shiga toxin-producing *Escherichia coli* O26 (STEC O26)
  - Norovirus
- At least 50 people from 9 states became ill
- Procurement Philosophy
  - Purchase from small local farms
  - Estimated 10% of produce sourced locally
- Difficult to track due to confirmation and lag time testing
- Why? Fresh produce, faulty food handling, and improper cleaning practices were suspected

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

FoodHandler


SafeBites  
From FoodHandler

## Impacts


- Outbreak has affected the business
- Chipotle has invested heavily in:
  - New supplier initiative (10 Million \$\$\$)
    - Education and training
    - Financial support
    - New partnerships local suppliers
  - Shift to central processing fresh produce
  - “Stop and Clean” programs

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2


FoodHandler

**SafeBites**  **Produce Safety Risks**

- Fresh produce is often consumed raw
- Contamination is sporadic & difficult to detect
- Microbial contamination on produce is extremely difficult to remove once present
- Produce characteristics:
  - Rough surfaces, folds, crevices
  - Bruises, cuts, stem scars



WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites**  **Sources of Risks**

**Environmental**

**Water**

- Source
- Quality
- Practices

**Soil**

- Prior land use
- Adjacent land use
  - Field slope and drainage
  - Soil properties
  - Soil fertility management

**Animals – feces contamination**

- Wildlife
- Pets
- Pest

**Buildings, Equipment, Tools**


- Equipment/containers (pre- and post-harvest)


WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites**  **Run off**




WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites**  **Tracks**




WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

## Sources of Risk

### Human Contamination


- Worker hygiene
- Worker Health
- Post harvesting processing
  - Temperature controls
  - Facilities control



WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

## FSMA



- Food Safety Modernization Act Produce Safety Rules
- Released December 2015 with scheduled implementation dates
- Note exemptions for *some* fresh produce growers selling only unprocessed items direct to outlets
- Rules focus on risk areas


WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

## GAPs



- Based on science
- National GAPs initiative Cornell University
- Reflected in FSMA Produce Rules
- Produce Safety Alliance preparing farmer certification workshops
- National and Regional Centers through FDA



WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

## GAPs

- Agricultural Water
- Biological Soil
- Health and Hygiene
- Domestic and Wild Animals
- Equipment, tools, and buildings
- Sprouts
- Training



WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

SafeBites  
from FoodHandler

# Procurement Best Practice

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

FoodHandler®

SafeBites  
from FoodHandler

# Food Supply Chains

```

    graph TD
      A[Farm/Transportation] --> B[Food Processor/Transportation]
      B --> C[Retail/Transportation]
      C --> D[Preparation/Consumption]
  
```

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

FoodHandler®

SafeBites  
from FoodHandler

# Buyers' Food Safety Assurances

- **Licensed or inspected by government**
  - TCS foods are regulated
  - Most fresh produce is NOT considered a PHF or TCS
  - No license is required to sell **most whole, unprocessed or minimally trimmed fresh produce**
  - Washing versus RTE
  - Pending implementation Produce Rules
- **Demonstration of knowledge**  
i.e. *certificate of training*

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

FoodHandler®

SafeBites  
from FoodHandler

# Food Safety Assurances

- **Documented practices and procedures**
  - i.e. *review of a farm food safety plan or checklist or water tests*
- **Farm or Facility Tours**
  - i.e. *DIY*
- **Certification by third party**
  - i.e. *GAPs Certification*

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

FoodHandler®



## Certification Options





FAIR TRADE  
CERTIFIED



CERTIFIED  
HUMANE  
RAISED & HANDLED



BUY FRESH  
BUY LOCAL  
PRACTICAL FARMERS OF IOWA






GOOD AGRICULTURAL PRACTICES PROJECT



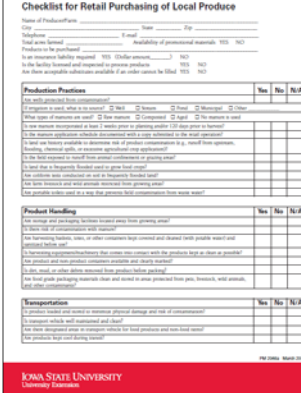
FOOD ALLIANCE  
The Link for a Healthier Future

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

## Example of Documentation




- Buyer exercises due diligence and demonstrates reasonable care
- ISU Extension PM2046A
  - Checklist
  - One form of documentation
  - Discuss packing and delivery and payment
  - Items based on GAPs:
    - Water
    - Manure
    - Product handling




WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

## Discuss



- Price – seasonal variations, local premium price
- Order procedures
  - When, lag time, substitution policy
- Product specifications
  - Quality, production practice, variety, size, number, packing containers
- Payments
  - Timing
- Delivery
  - When, where, who, what



WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

## Write Clear Specifications




### U. S. Grade Standards



[www.ams.usda.gov/standards](http://www.ams.usda.gov/standards)

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites**  **Purchasing Recap**


- Purchase from approved source
- Ask about food safety practices and controls
- Review written documentation
- Clearly communicate with specifications about
  - Pricing and payment
  - Product quality and characteristics
  - Packing information and delivery

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites**  **Produce Handling**



WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**


**SafeBites**  **Control of Risk**

- No kill step with cooking
- Not typically thought of as food of concern
- SOP addresses steps to follow in operation
- Attention to **flow of food**
- SOP examples at [www.iowafoodsafety.org](http://www.iowafoodsafety.org)




IOWA STATE UNIVERSITY.

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites**  **Receiving**

- Temperature controls
- Security
- Vendor authentication
- Inspect the delivery
  - Quality
  - Quantity
- Random checks of delivery
- Train staff when to accept/reject produce



www.iowafoodsafety.org

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

## You Decide!




WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

## Storage

- Monitor temperatures daily
- Prevent cross-contamination
  - Store above raw TCS foods
- Inventory Management
  - First In; First Out (FIFO)
  - Date product as store
  - Quality review




WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

## Preparation Controls

- Knowledge and skills needed
- Wash hands – *soap, water, 10 second lather, rinse, dry*
- Wash produce
  - under *running* water or alternate approved method
  - designated produce sink
  - never use unapproved chemicals
  - designated vegetable brush melons, etc.




WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

## Preparation Controls

- Wash produce prior to use *even if*
  - Using in a cooked product
  - Peeling the item
- Wear gloves as prepare
- Avoid cross contamination
  - Manual
  - Mechanical



WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**



**SafeBites** From FoodHandler

## Why wash hands?



Microorganisms from hands washed for the recommended 20 seconds

Microorganisms from unwashed hands after using the restroom

Source: Iowa State University Extension Service

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

**FoodHandler**

**SafeBites** From FoodHandler

## Produce Handling Resources



Source: Iowa State University Extension: Available at <https://store.extension.iastate.edu/Product/Leafy-Green-Safe-Handling-Posters>

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

**FoodHandler**

**SafeBites** From FoodHandler

## From USDA

- [http://www.fns.usda.gov/sites/default/files/foodsafety\\_bestpractices.pdf](http://www.fns.usda.gov/sites/default/files/foodsafety_bestpractices.pdf)



**BEST PRACTICES**  
HANDLING FRESH PRODUCE IN SCHOOLS

Fruits and vegetables are an important part of a healthy diet. Introducing children to them in schools will improve their present and future health. Fresh produce must be handled safely to reduce the risks of foodborne illness. There are a number of steps that foodservice employees can take to minimize the chances for fruits and vegetables they handle to become contaminated. Best practices for handling all types of produce are described in this fact sheet, along with practices specific to leafy greens, tomatoes, melons, and sprouts.

Contamination of produce with harmful microorganisms can occur at all stages of production, processing, transportation, storage, preparation, and service. To prevent foodborne illness, fresh produce needs to be handled with care at each step from farm to table.

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

**FoodHandler**

**SafeBites** From FoodHandler


## Service Controls




- Managers Matter!
  - SOPs staff health and hygiene
  - Service options
  - Equipment purchased (sneeze guards; refrigerated units)
  - Resources available (staffing, service ware)
- Service Pros and Cons
  - Prepared menu item (staff handle)
  - Self-service bars (customers serve selves)

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2

**FoodHandler**

**SafeBites**  **Service Decisions**

- Advantages to both
- Resource availability – inputs pre-service versus service
- Controls in place
  - Temperature
  - Handling
  - Food safety
  - Food defense
- SOPs and Signage
  - Back of house
  - Front of house

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 

**SafeBites**  **Service Controls**

- Temperature controls – TCS produce
- Prepared/Served items
  - Holding temperatures
  - Protection contaminants
  - Plate and product handling
- Monitor self-service
  - Temperature controls
  - Sneeze guards
  - Clean areas
  - Change utensils as needed




WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 

**SafeBites**  **Self-Service Principles**

- Keep batches separate
- Have new plates available for refills
- Have separate utensils each item/change as needed
- Communicate best practice
- Monitor areas
- Keep areas clean
- Identify all food items
  - Label all containers
  - Place salad dressing names on ladle handles
- Pre-wrap “Grab and Go” items
- Wash and wrap fresh fruit with edible peels for vending

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 

**SafeBites**  **Before and After Service**




WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 

**SafeBites** from FoodHandler

## What's right? What's wrong?

**What's Right**

- Clean tray line
- Extra plates
- On ice
- Sneeze guards
- Service utensils – handles up

**What's Wrong**

- No labels
- Too many items
- Utensils – tongs in lettuce



WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

## What's right? What's wrong?






WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

## Wrap Up

- Do you understand risks of foodborne illness from fresh produce?
- Can you identify best practices in procurement from local growers and national vendors?
- Do you know proper produce handling practices?
- Will you “show and tell” others in your operation?

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**

**SafeBites** from FoodHandler

Thank you for the invitation to speak!  
Are there any questions?

[cstrohbe@iastate.edu](mailto:cstrohbe@iastate.edu)  
515-294-3527  
[www.iowafoodsafety.org](http://www.iowafoodsafety.org)

WWW.FOODHANDLER.COM | 800.338.4433 EXT.2 **FoodHandler**