

## UF/IFAS: New Educational Materials

Amy Simonne, Ph.D.

2007 Multi-State Food Safety and Quality Updates, April 26, 2007



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## Lists of New Materials

- New Presentations for Ready-to-Eat Bag Salads
- Small Farm Food Safety Program
- Addressing other needs

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## Presentations for Ready-to-Eat Bag Salads



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### Consumer and Retail Food Service Guide to Washing Ready-to-Eat Salad

1. A Consumer's Guide to Washing Ready-to-Eat Lettuce/Leafy Green Salads
2. A Consumer's Guide to Washing Ready-to-Eat Lettuce/Leafy Green Salads Script
3. A Retail and Food Service Operator's Guide to Washing Ready-to-Eat Lettuce and Leafy Green Salads
4. A Retail and Food Service Operator's Guide to Washing Ready-to-Eat Lettuce and Leafy Green Salads Script
5. Fresh-cut Produce Re-Wash Panel
6. Recommendations to Consumers Regarding Washing Ready-to-Eat Lettuce/Leafy Green Salads
7. Recommendations to Retail and Food Service Operators Regarding Rewashing Ready-to-Eat Lettuce/Leafy Green Salads
8. FDA Safe Handling of Raw Produce and Fresh-Squeezed Fruit and Vegetable Juices
9. FDA Commodity Specific Food Safety Guidelines for the Lettuce and Leafy Greens Supply Chain

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### Background Information



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### How popular is fresh cut produce?

- 15 billion dollars are spent each year on fresh-cut fruits and vegetables (retail and food service market).
- 15% of all produce sales come from the sale of fresh-cut fruits and vegetables.
- Fresh-cut salads alone have sales of 2.7 billion dollars a year.



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## Nationwide *E. Coli* O157:H7 Outbreaks: Ready-to-Eat Spinach (2006)

- September 29, 2006 (FDA first announced the outbreak)
- Sickened 204 people in 26 states, 31 cases of Uremic Syndrome (HUS), 104 hospitalizations, three deaths (1- 2yr; 2 elderly women)
- Traced back to 4 fields
- Source was from cattle feces on one of the implicated ranches (identified by genetic fingerprints)

<http://www.cfsan.fda.gov/~dms/spinacqa.html>  
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## Why do ready-to-eat fresh vegetables, fruits, and prepared salads have a high potential risk of contamination?

- They are generally grown in a natural environment.
- They are often consumed without cooking.
- Numbers of illness associated with fresh produce is a concern of the FDA.

Statement of Dr. Robert E. Brackett, FDA-CFSAN to the Committee on Health,  
Nov 15, 2006

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## Is ready-to-eat fresh salad safe?

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## CA-DHS Food and Drug Branch: Fresh-cut Produce Re-Wash Panel

- April 2006 (initiated)
- 14 Member Expert Panel
- Academia, Governmental agencies (Federal and state), Trade Associations, and Private companies
- Summarize current research related to ready-to-eat fresh cut produce
- Formulated recommendations for consumers and food services based on new research and previous recommendations from different agencies

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## Existing Recommendations for Re- Washing of Fresh-cut Produce

- California Department of Health Services Food and Drug Branch
- U.S Food and Drug Administration and U.S. Department of Agriculture
- Produce for Better Health Foundation
- Partnership for Food Safety Education
- International Fresh-cut Produce Association

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## Points to address:

- Do human pathogens survival and grow on leafy vegetables?
- Do wash procedures affect subsequent growth or survival during storage?
- Are home and food service washing procedures effective reducing pathogens?
- Studies on washing produce and general food handling by consumers and food service establishments: Are they in compliance?
- What can you take home today?

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## Do human pathogens survive and grow on leafy vegetables?

- Studies on survival and growth of pathogens on lettuce and parsley have shown that *Shigella sonnei*, *Salmonella bairdson*, and *E. coli* O157:H7:
  - 1) decrease in # when stored at 4-5°C
  - 2) increase when stored at 12°C (*E.coli* O157:H7)
  - 3) increase (all three) at 21°C

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## How about the location of cells and their survival during initial chlorine treatment?

- Seo and Frank (1999)
- 1<sup>st</sup> experiment: submerged lettuce in *E. coli* suspension overnight at 7°C, then rinsed with sterile distilled water. Then treated with 20 ppm chlorine solution.
- 2<sup>nd</sup> experiment: *Pseudomonas*.

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## Effect of Wash Procedures on Growth and Survival During Storage

- Delaquis et al (2002) –Iceberg lettuce [*E.coli* O157:H7 and *Listeria monocytogenes*] – cold (4°C) vs warm (47°C) chlorine wash (100ppm) then stored at 1°C and 10°C for 14 Days.
- Li et al (2001)- lettuce [*E. coli*] wash with 20 ppm either at 20°C or 50°C
- Findings? Populations increase when vegetables are stored at 10°C or higher.

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## Home or Foodservice Washing Procedures (Various studies)

- “Household sanitizers”
- Apple cider vinegar
- House hold bleach
- Lemon juice
- White vinegar
- Findings: Washing lettuce with chlorine solutions (20-200ppm) reduces the microbial load more than washing with water. However, the difference is very small for spoilage or pathogenic bacteria.

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## Percent violation of 1997 Food Code [USHHS-FDA, 2004]

Type	Eqp	Surface	PPH	Hand washing
Fast F.	21.0	50.9	31.2	53.8
Full Sev.	37.3	56.6	41.7	72.7
Retail/produce	20.5	44.4	22.3	33.3

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## Bringing Food Safety Concepts to Small Farms in Florida

Amy H. Simonne, Mickie Swisher, Brian Lapinski, Bill Kelsey, Al Williamson, and Roger Burnham

2007 Multi-State Food Safety and Quality Updates, April 26, 2007

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## Small Farm Food Safety Program



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## Acknowledgement

- This project was partially funded by the USDA-Smith Lever-Special Needs Funds (USDA Proposal Number 2003-04995).
- We thank managers of farmers' markets in Florida for their assistance with the surveys.
- Cooperators and contributors: Rose Organic Farm, Inc. Gainesville, FL, and Brad Thompson, student actor

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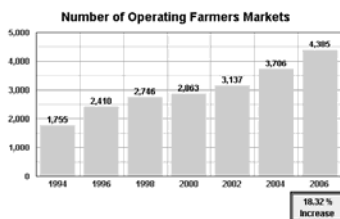
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## Growth of Farmers' Markets in the U.S.



<http://www.ams.usda.gov/farmersmarkets/facts.htm>

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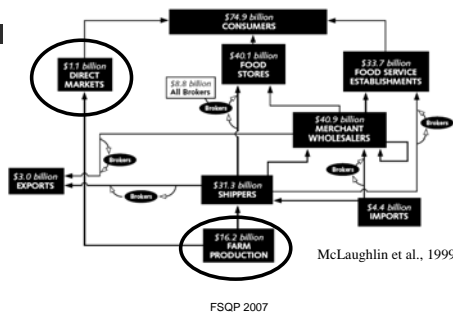
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## Where Do Farmers' Markets Fit?




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## Significance of Food Safety at Farmers' Markets

- 19,000 farmers sold produce at Farmers' Markets (USDA 2000)
- 58% of Markets participate in WIC coupon, food stamps, local, and/or State nutrition programs. <http://www.ams.usda.gov/farmersmarkets/WIC.htm>
- 25% percent of markets participate in gleaning and food recovery efforts
- The Senior Farmers' Market Nutrition Program (SFMNP)- \$16.7 million in grants in 2006 benefiting 750,000 low income seniors  
<http://www.ams.usda.gov/farmersmarkets/FMSeniors.htm>

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## Farmers' Markets in Florida

- 74 farmers' markets in operation (2005)\*
- 13 State Farmers' Markets
- Florida
  - More than 25 million units of fresh fruits and vegetables are sold annually
  - More than \$225 million in revenue

[http://www.florida-agriculture.com/consumers/farmers\\_markets.htm](http://www.florida-agriculture.com/consumers/farmers_markets.htm)

\*These numbers are likely to be higher this year following the national trends

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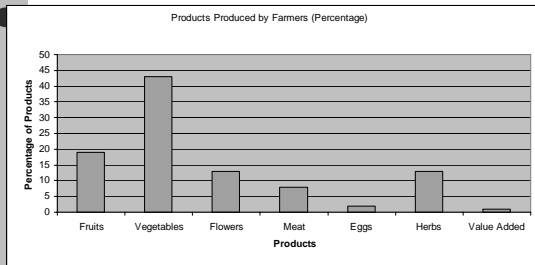
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## Major Products Sold at Farmers' Markets in Florida



Simonne et al., 2006, Food Protection Trends 26(6):386-392  
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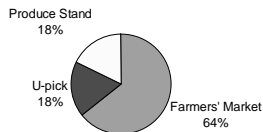
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## Major Outlets of Produce

Percentage of Markets that Farmers Sell Products Through



Simonne et al., 2006, Food Protection Trends 26(6):386-392

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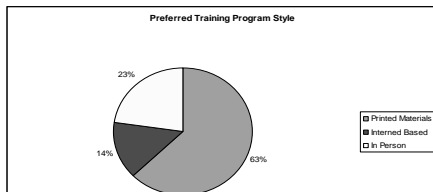
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## Preferred Training Style



Simonne et al., 2006, Food Protection Trends 26(6):386-392

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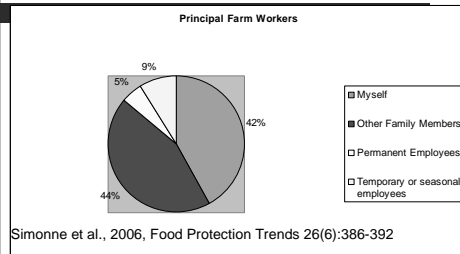
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## Who works in your farm?



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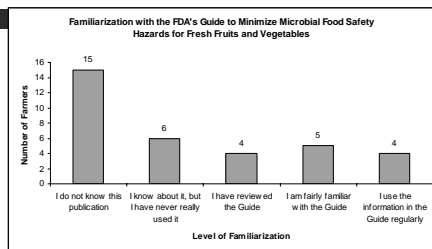
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## Familiarity with the FDA's GAPs



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## Components of the Program



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## Components of the Program

- Introduction
  - What, who, how, and where?
  - Simple slide presentation "Keep P.A.C.E!"
    - P=Prevention; A=Accountability; C=Control, and E=Education
- "The Buck Stops Here" (three foodborne illness scenarios)
- What's wrong with this picture? (3 video clips)
- Farm Map
- "Passing Along Best Practices": Making your farm food safety plans
- Resource Guide

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## Who can use this program and how?

- FCS county faculty who have strong basic background in food safety;
- Ag-county faculty who work with small farm/vegetable production; and
- Others who are interested.
- Look for future in-service trainings on this topic.

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## Your future needs:

- What materials are in the pipeline?
- Your future needs
- Fill out your survey at the training website.

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