

# UF/IFAS: New Educational Materials

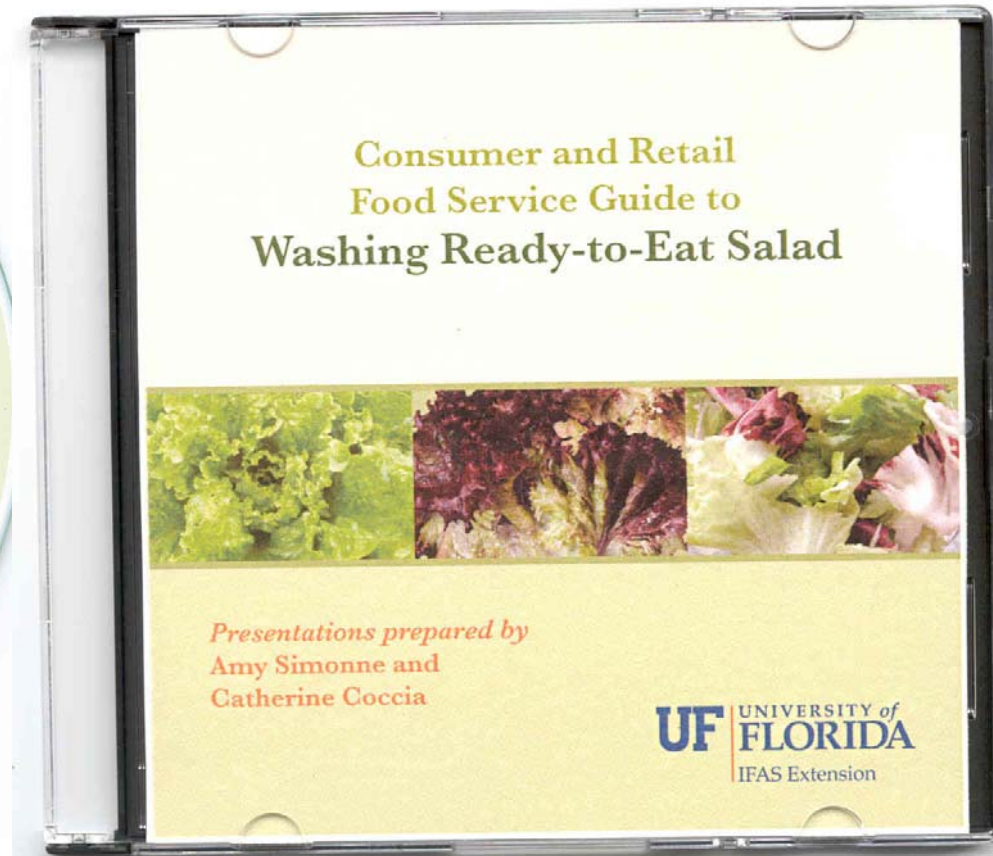
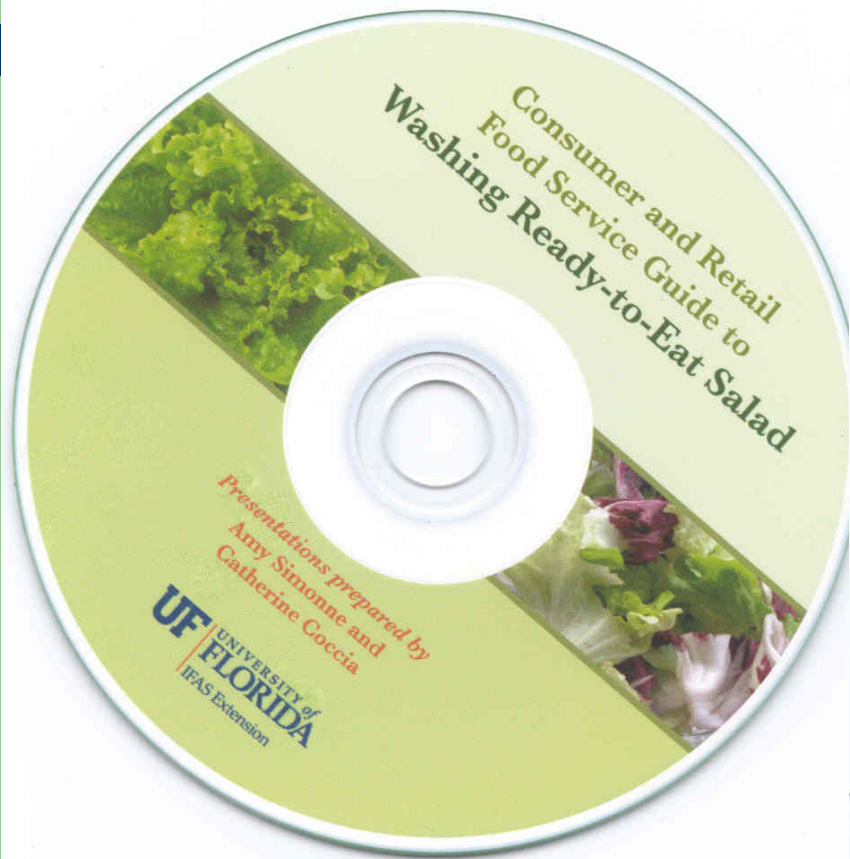
Amy Simonne, Ph.D.



# Lists of New Materials

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

# Presentations for Ready-to-Eat Bag Salads



## 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



# 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.



# 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>

# 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

# Is ready-to-eat fresh salad safe?



# 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

# 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

# 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?

# 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

# 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.

# 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.

# 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.


# 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

# Bringing Food Safety Concepts to Small Farms in Florida

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

# Small Farm Food Safety Program



**Small Farm  
Food Safety:  
Fresh  
Produce**

Development team: Amy Simonne, Ph.D.  
Marilyn Swisher, Ph.D., Brian Lapinski, B.A.  
Bill Kelsey, Al Williamson, Roger Burnham

Acknowledgement: This project was partially funded by the USDA/  
CSREES/Smith-Lever Special Needs Funds (USDA Proposal  
Number 2003-04995)

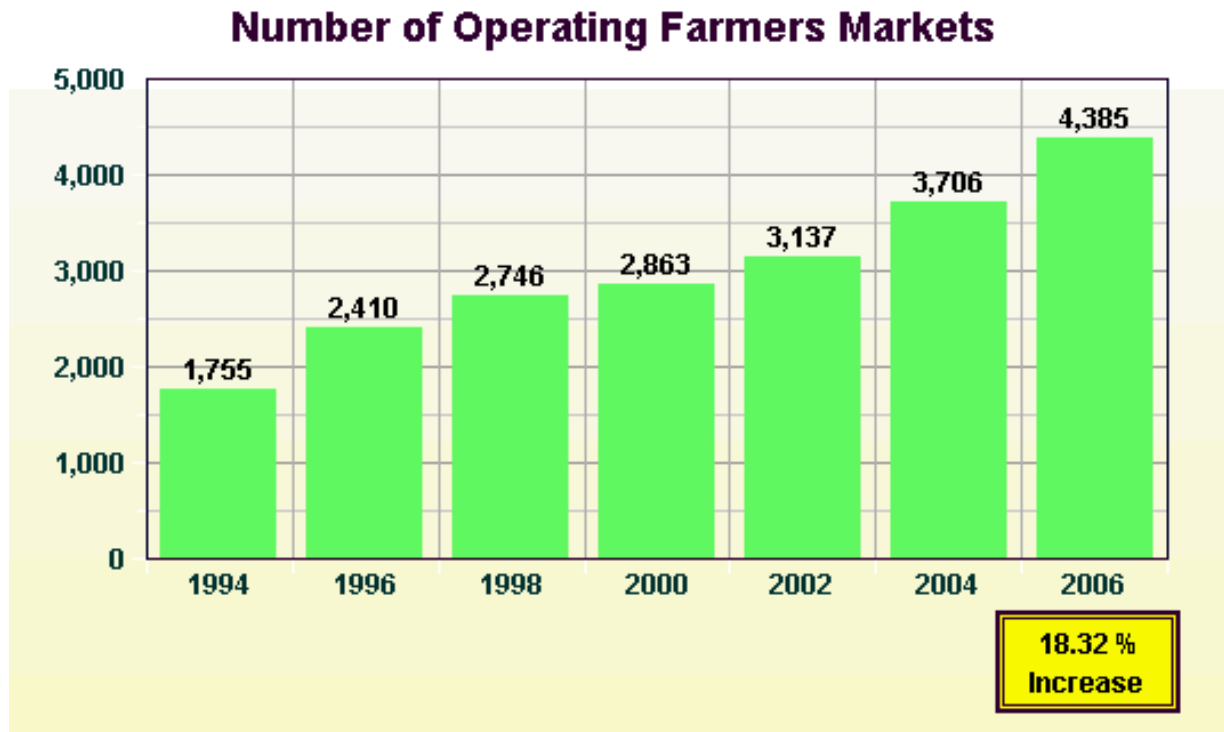
Collaborators and contributors:  
Rose Organic Farm, Inc. Gainesville, FL  
Brad Thompson, student actor

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# Acknowledgement

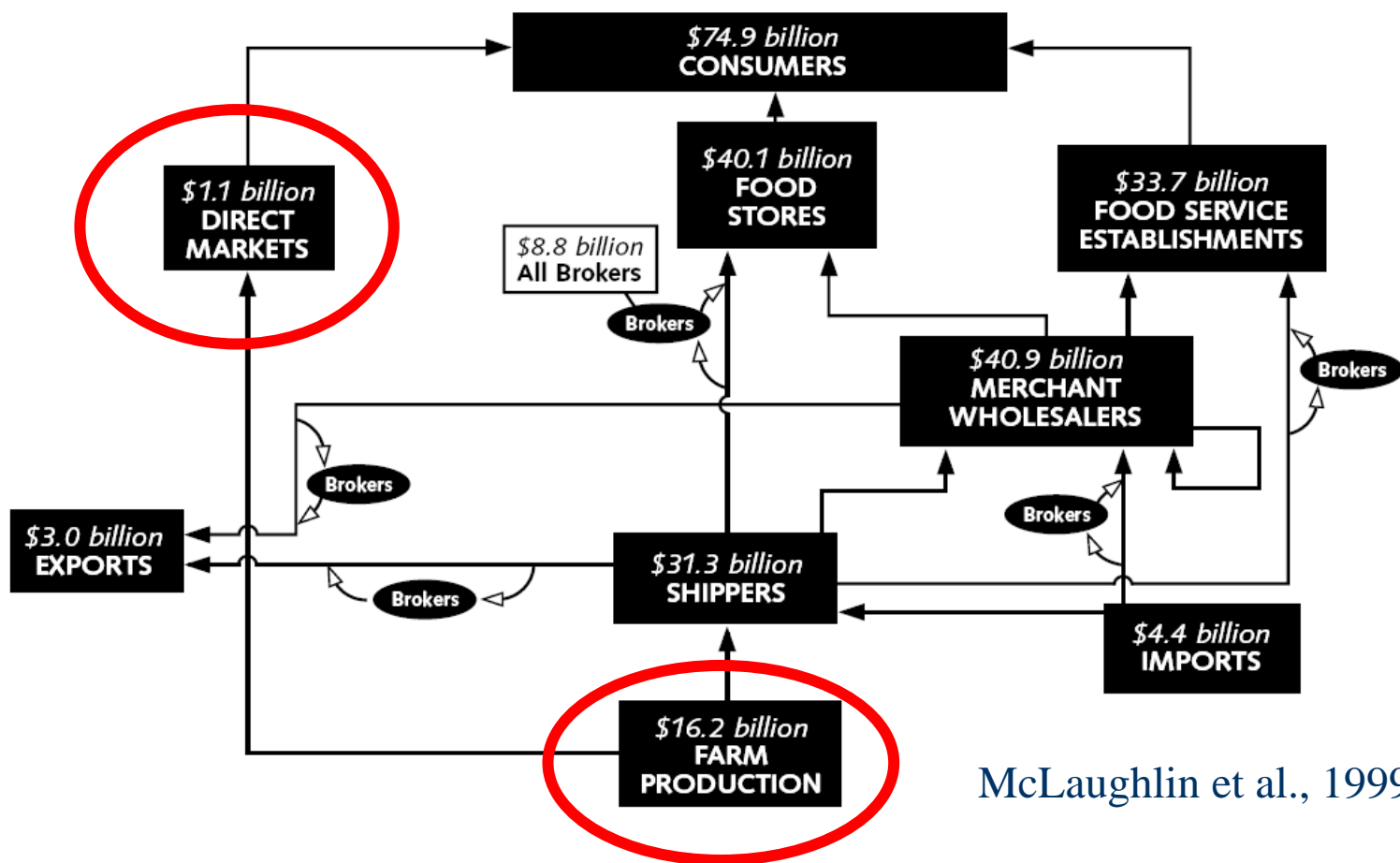
- This project was partially funded by the USDA-Smith Lever-Special Needs Funds (USDA Proposal Number 2003-04995).
- We thank managers of farmers' markets in Florida for their assistance with the surveys.
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# Growth of Farmers' Markets in the U.S.



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

# Where Do Farmers' Markets Fit?



McLaughlin et al., 1999

# 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>

# Farmers' Markets in Florida

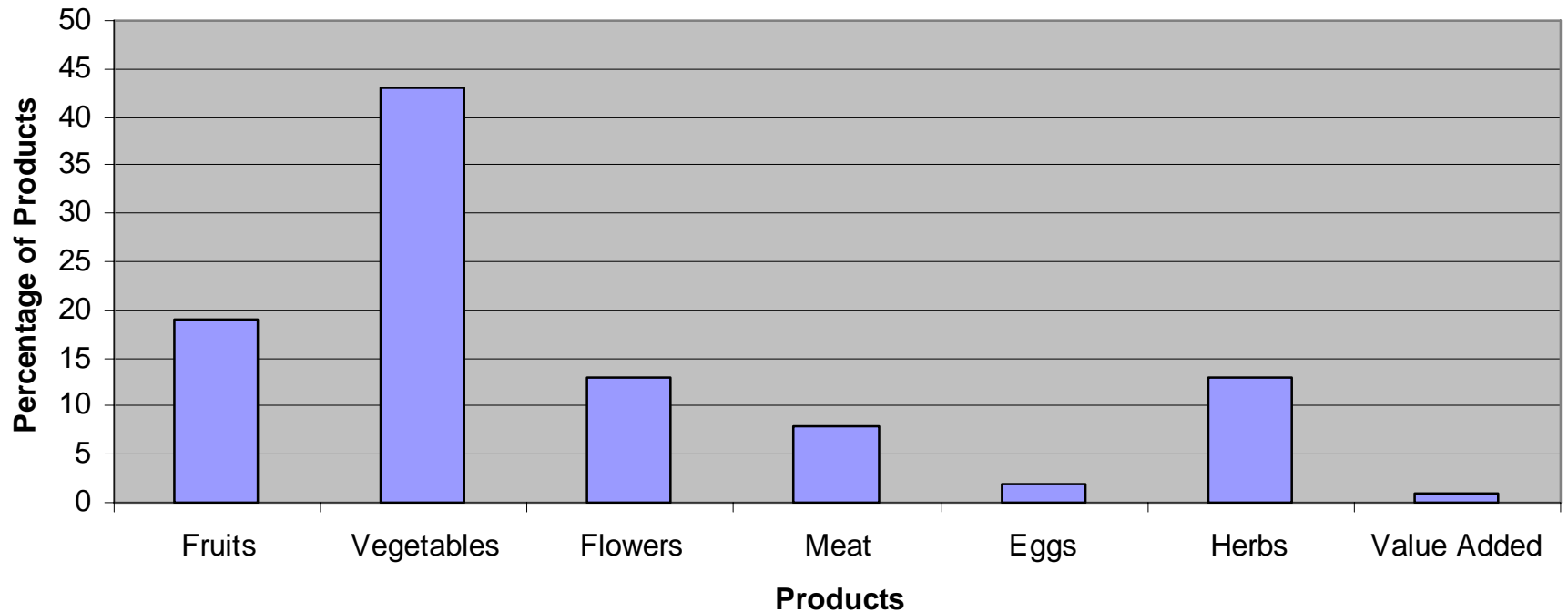
- 74 farmers' markets in operation (2005)\*
- 13 State Farmers' Markets
- Florida
  - More than 25 million units of fresh fruits and vegetables are sold annually
  - More than \$225 million in revenue

[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

# Major Products Sold at Farmers' Markets in Florida

Products Produced by Farmers (Percentage)

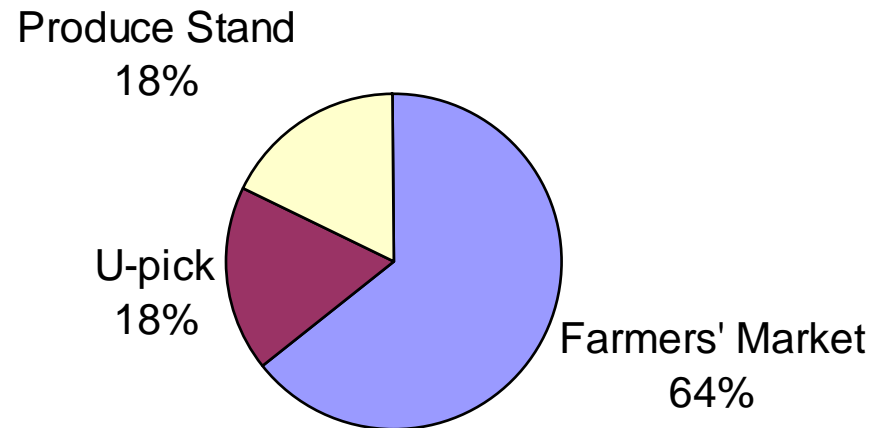


Simonne et al., 2006, Food Protection Trends 26(6):386-392

FSQP 2007

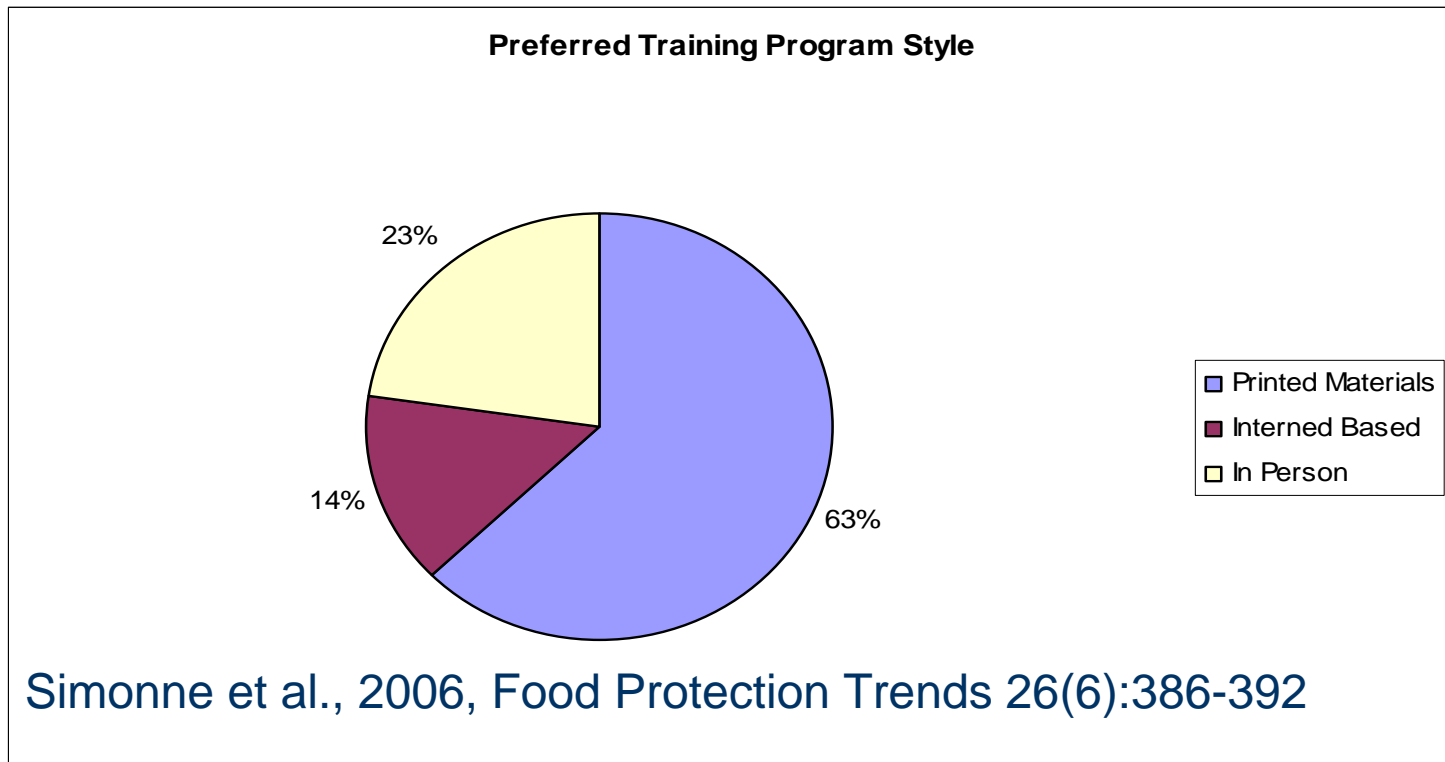
# Major Outlets of Produce

## Percentage of Markets that Farmers Sell Products Through



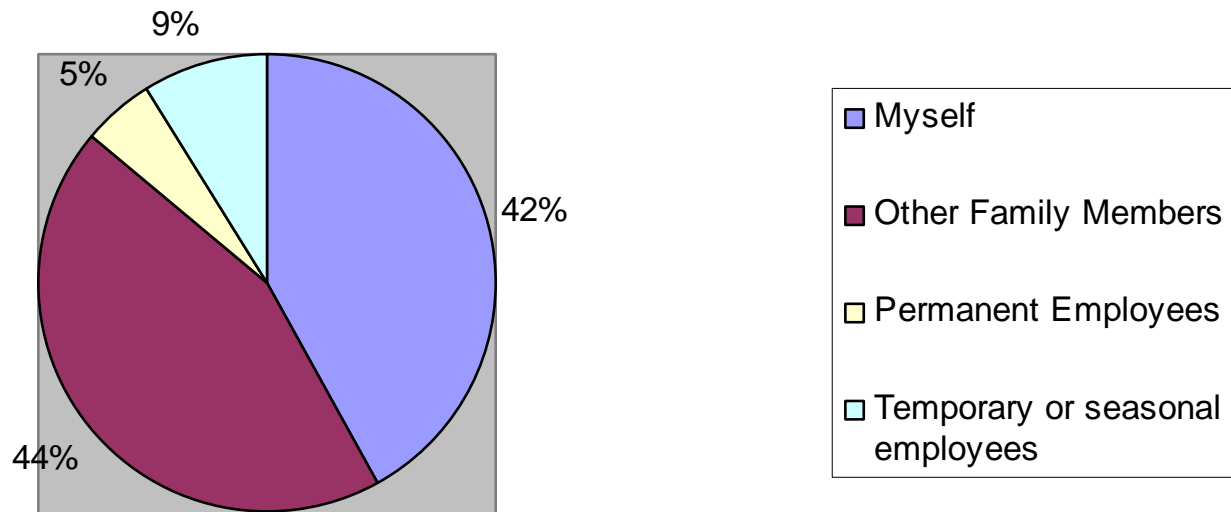
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# Preferred Training Style



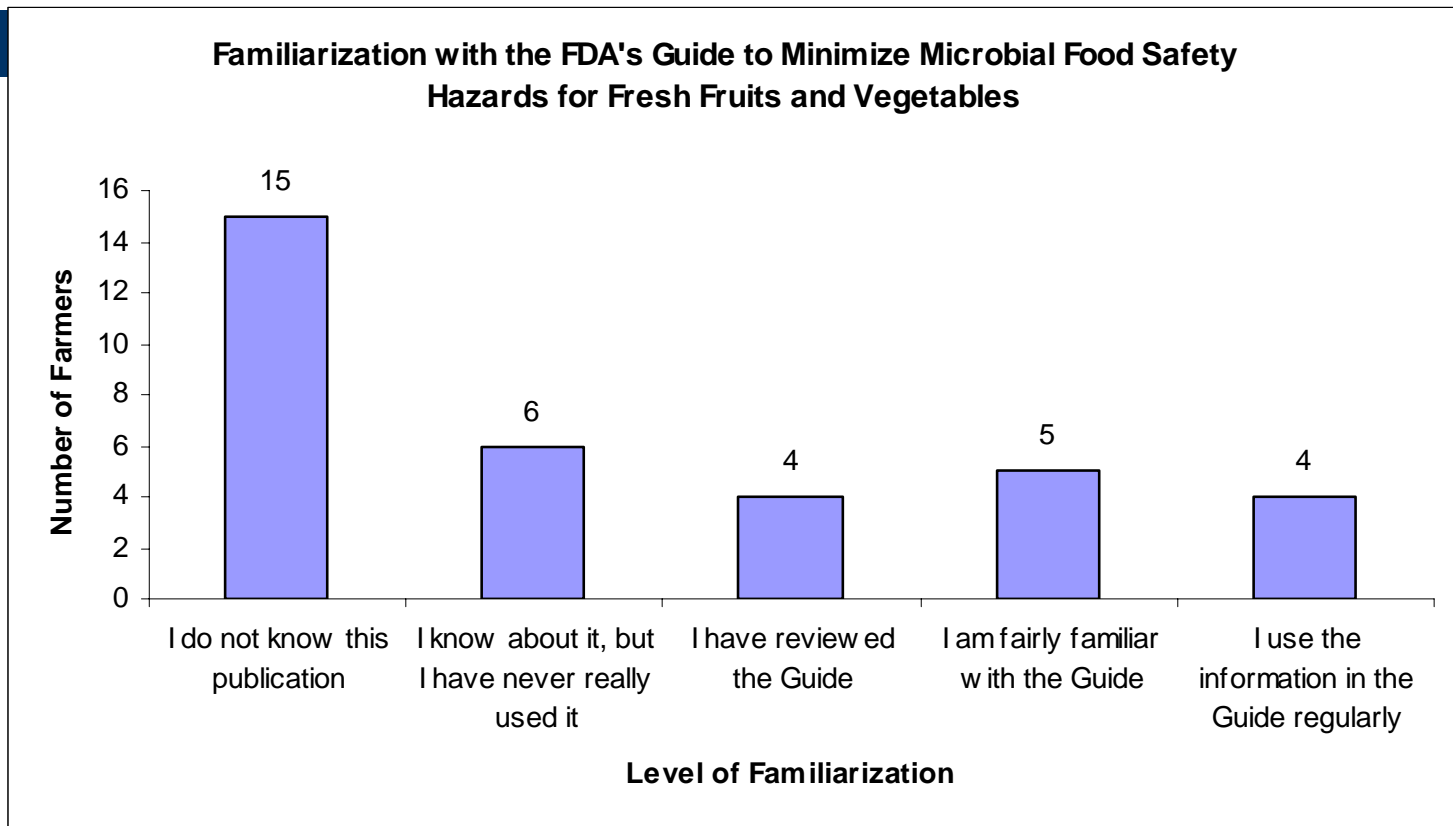
# Who works in your farm?

Principal Farm Workers



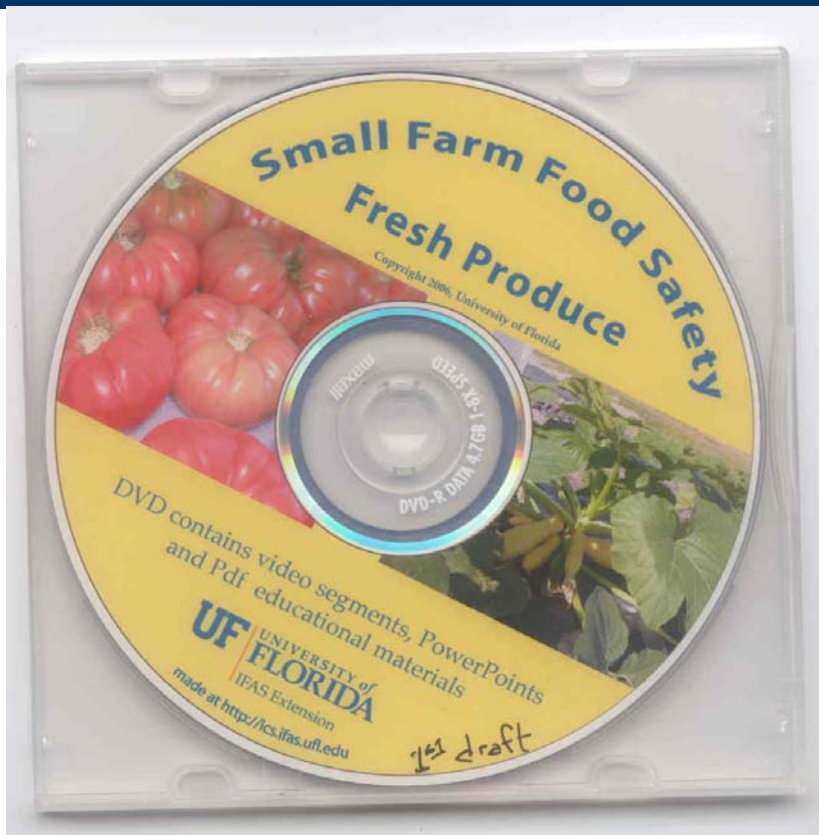
Simonne et al., 2006, Food Protection Trends 26(6):386-392

# Familiarity with the FDA's GAPs



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

# 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

# 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.

# Your future needs:

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