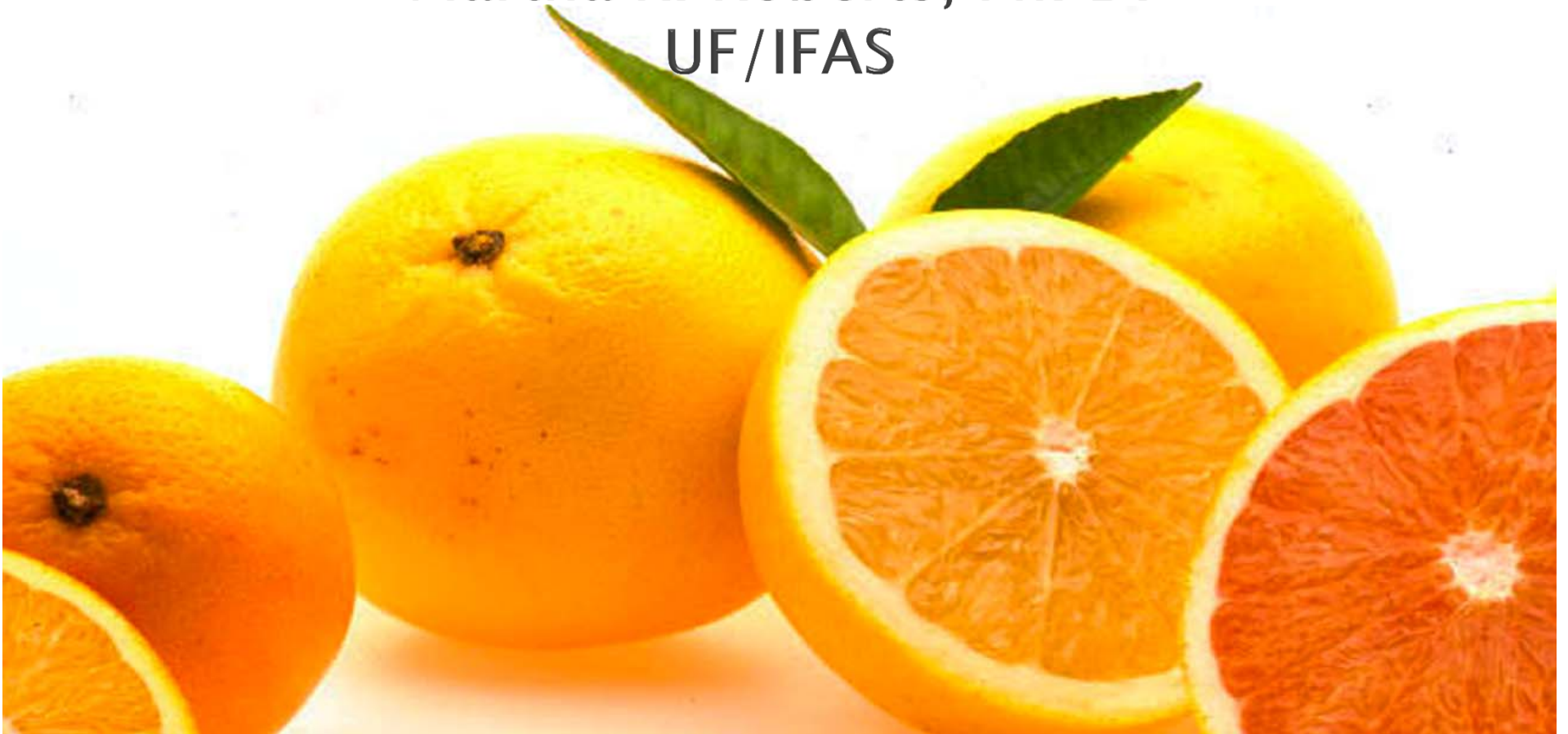


Harmonization of Produce GAPs

Martha R. Roberts, Ph. D.
UF/IFAS



My Hats of Perspective

Industry
Work to craft
workable
GAPs

UF/IFAS
Part time
Academia



Organizations
IFT,
FDA,USDA
partnerships
etc.

State Regulatory Official
35 years

Converging Issues

- ▶ Can't separate food safety from crop pest and disease or production issues
- ▶ All are intertwined
- ▶ Water quality – not just chemical quality anymore but also microbial quality
- ▶ Must have key partners on all crop issues
- ▶ Co Management issues on environment and labor



Today's World Focus is on Food

- ▶ **Food Safety**
- ▶ **Food Availability & Prices**
- ▶ **Food Security**
- ▶ **Food Traceability**



PRINCIPLES FOR FOOD SAFETY

- ▶ Prevention most important followed by Intervention and Response
- ▶ Proactive versus Reactive
 - Control of Destiny

Message/Behavioral changes critical


Credibility and Trust

Uncontrollable Events


Politics / catastrophe / resource crisis

Based in Science / Measurable / Common Sense / Cost efficient

Program of Today


- ▶ Look at the partners / participants
 - ▶ INDUSTRY HISTORICAL PERSPECTIVE
 - ▶ FEDERAL ACTIONS
 - ▶ EFFORTS TO HARMONIZE IMPACTS / BRING TO CONSENSUS
 - ▶ INDUSTRY INITIATIVE
 - ▶ INTERNATIONAL STD SETTING
 - ▶ PANEL TO DISCUSS OPTIONS
- 

GAPs and Harmonization


- ▶ **BOTTOM LINE:** Consensus building and cooperation essential across all sectors
 - ▶ No one needs to meet 10 different programs of requirements
 - ▶ **GOAL: Productive / Profitable / Sustainable / Safe**
 - ▶ **PAST & PRESENT:**
Trials / Tribulation / Pests / Disease / Unknowns
 - ▶ **CONVERGENCE OF ISSUES**
 - ▶ **GLOBALIZATION / INTERNATIONAL**
- 

Industry Initiative

- ▶ The FDA Food Safety Modernization Act (FSMA) amends the FFDCFA to identify standards for produce
 - ▶ safety under Section 419. The FSMA identifies six issues which will be addressed by standards which consider
 - ▶ “hazards that occur naturally, may be unintentionally introduced, or may be intentionally introduced, including
 - ▶ by acts of terrorism.”

 - ▶ The issues are:
 - ▶ 1. soil amendments,
 - ▶ 2. hygiene,
 - ▶ 3. packaging,
 - ▶ 4. temperature controls,
 - ▶ 5. animals in the growing area, and
 - ▶ 6. water.
- 

Harmonization of GAPs

- ▶ Evaluate effectiveness of current metrics
 - ▶ Cost of GAPs compared to reduced risks
 - ▶ Critical need for validation of currently proposed metrics
 - Science Based
 - Easily monitored
 - Economically feasible
 - Regionally based/ geographically specific
 - Seasonality considerations
- 


A Step Away



- ▶ May–June, 2011 European outbreak – Sprouts Sickened 4000, 50 killed, cucumber & produce markets destroyed – Rare E. coli O104: H4
- ▶ 2008 Salmonella saintpaul outbreak – Mexican jalapenos – Tomatoes accused – losses >\$200 million
- ▶ Produce recall every 5.8 day on average 87 recalls in 2011 as if August (Prince, 2011)
- ▶ Most in 2011 – cantaloupe, lettuce, sprouts, fresh-cut apple slices



Balancing Act on GAPs

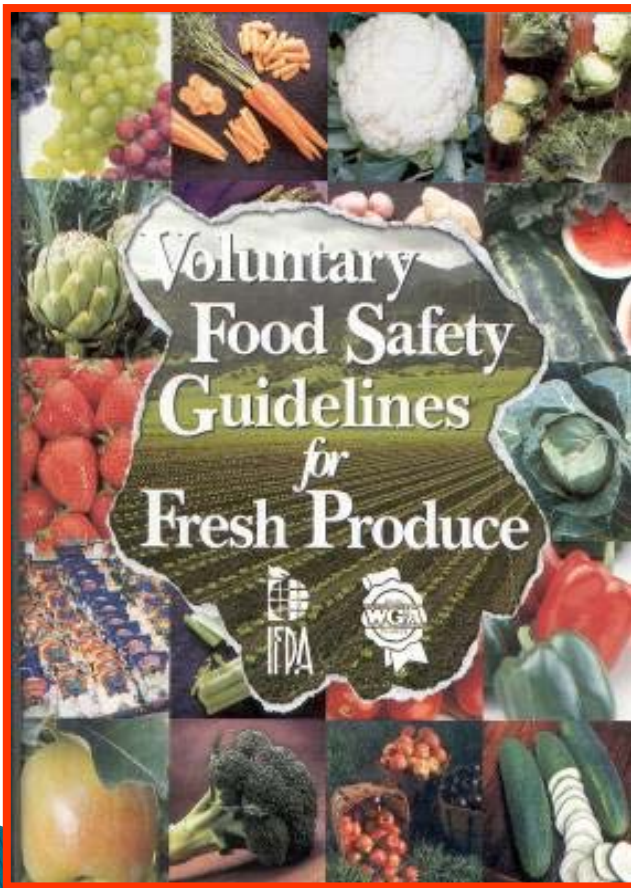
- ▶ Generic/ Umbrella Requirements vs Specific Commodity Requirements
 - ▶ Harmonized vs Unique
 - ▶ Consistent vs Inconsistent
 - ▶ Responsible Initiative vs Reluctance to Act
- 

The Past Led to.....

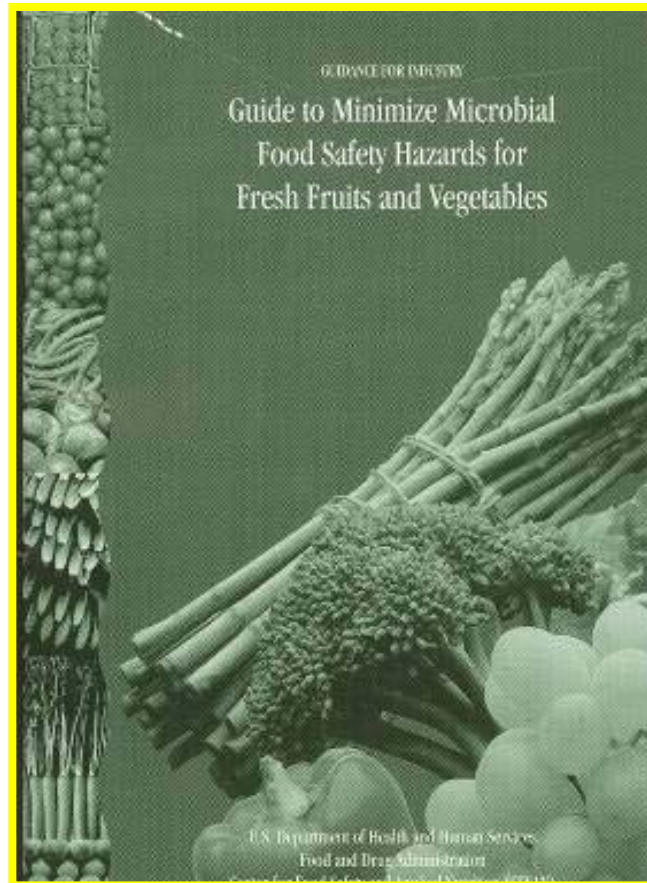
- ▶ Outbreaks of the 90s
- ▶ Concern by regulators led to –
- ▶ **1998 Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables**
 - Water
 - Manure
 - Worker Health & Hygiene & Sanitary Facilities
 - Field Sanitation & Packinghouse Sanitation
 - Traceback
 - Transportation

Good Agricultural Practices For Growing and Packing Fresh Produce

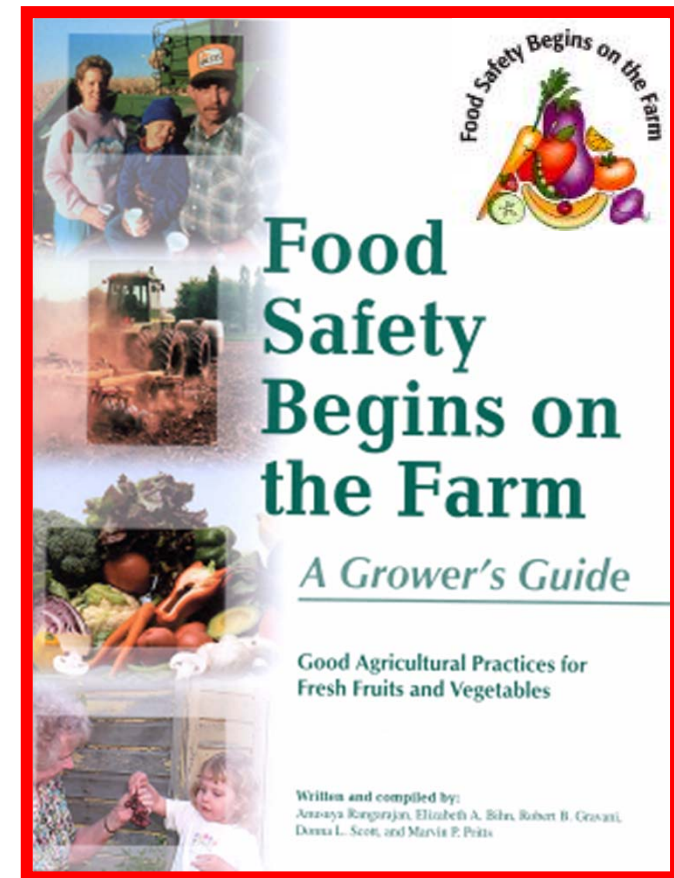
FDA



1996



1998



2000

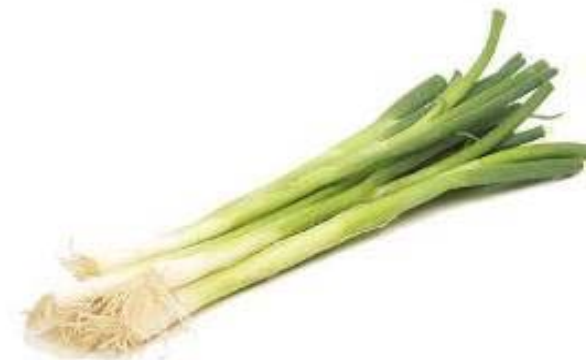
INDUSTRY COMMODITY SPECIFIC GUIDANCE

COOPERATIVELY DEVELOPED MANY PARTIES

- ❖ Melon – Oct '05
- ❖ Lettuce – April '06
- ❖ Tomato – June '06 & 2nd Ed '09
- ❖ Green Onions – Feb '10
- ❖ *And many others*

Commodity Specific
Food Safety Guidelines for
the Melon Supply Chain

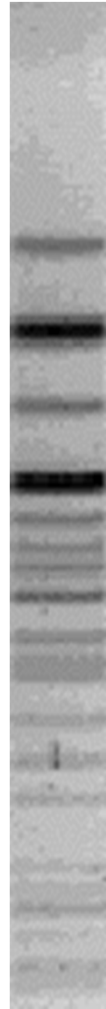
1ST EDITION



Foodborne Illness Statistics

- ▶ Recently revised by CDC
- ▶ 1 out of 6 people in US – 48 million suffer from foodborne illness each year
- ▶ 128,000 hospitalized with approximately 3,000 deaths
- ▶ Mead – 1999 (76 Million/325,000 H/5,000 deaths) 1 in 100 reported
- ▶ 60% of estimated foodborne illnesses due to norovirus
- ▶ 38 of 48 million due to unspecified causes
- ▶ 12% of outbreak assoc illnesses from produce

NOW WE CAN CONNECT THE DOTS MUCH EASIER!



PFGE (Pulse Field Gel Electrophoresis – a technique that fingerprints the genetic material of the bacterial strain and allows health officials to

“CONNECT THE DOTS”

Past Cont'd

- ▶ New guide to industry quickly became de facto regulation as customers demanded proof of compliance
- ▶ Evolution of 3rd party audits
- ▶ Continuing outbreaks
- ▶ 2004 FDA letters to California Leafy Greens industry and to Florida Tomato industry demanding closer adherence to food safety

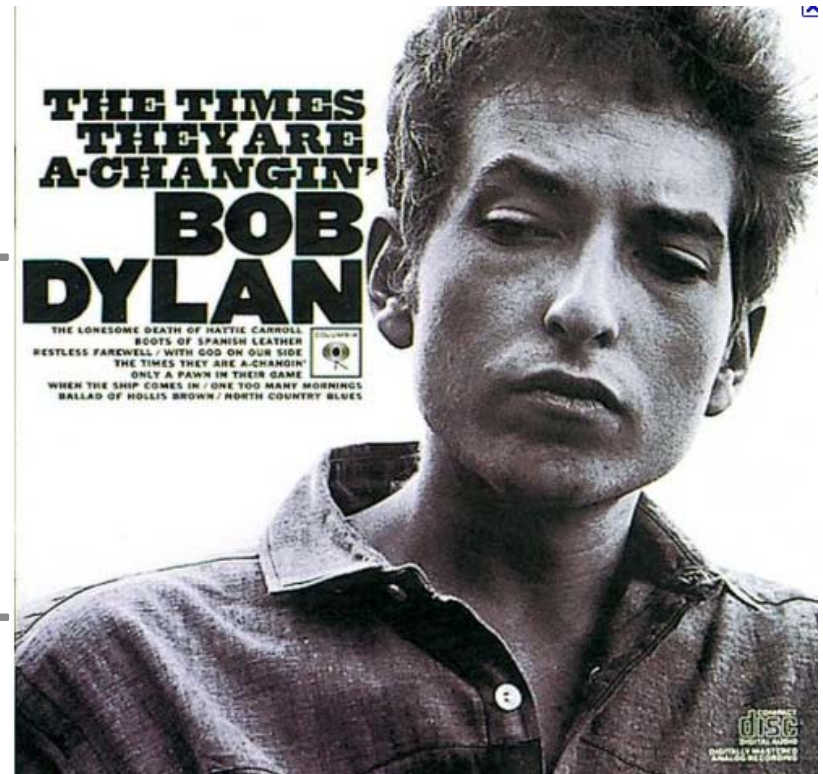
Concurrent Developments

- ▶ Industry
- ▶ State Regulatory Agencies
- ▶ Federal Regulatory Agencies
- ▶ Associations
 - United – 2nd Ed Commodity Specific & Audit Harmonization Efforts
 - AFDO – Model Code for Produce Safety
 - PMA – Establish Center for Produce Safety



The Times They are a changing !

- Changing leaders –
- Changing players –
- Changing trends –
- Changing politics –
- Changing crises!





FDA Food Protection Plan

- Published 2007
- Basic Tenets

PREVENTION

INTERVENTION

RESPONSE

15 federal agencies involved in food safety



Chronology: Tomato Related Events

- 2003-5** Attempts to change Federal Marketing Order through USDA – Quality regulated in CFR, Title 7, Part 966
- 2004-7** Formulated Tomato Good Agricultural Practices (T-GAPs) for growers and greenhouses and Tomato Best Management Practices (T-BMPs) for packinghouses and post-harvest
- 2006-7** Voluntarily adopted by industry
- 2006** North American Trade Work Group developed Commodity Specific Food Safety Guidelines for the Fresh Tomato Supply Chain
- 2006** Agreement with the state regulatory agency to adopt T-GAPs and T-BMPs as formal regulation to allow government surveillance of the industry



Additional Chronology

- 2007** Statute passed by FL Legislature for FDACS authority to establish mandatory government regulation of food safety of tomatoes
- 2007** FDA Hearing on Produce Safety
- 2007** Establishment of Center for Produce Safety at UC Davis funded by Produce Marketing Assoc & Taylor Fds
- 2009** Additional changes to Florida statute to mandate annual education and registration of locations



GOALS of All Produce GAPs

- 1) To enhance safety of produce to the consuming public
 - 2) To prevent or minimize contamination of produce
 - 3) To provide necessary education and training on food safety practices to workers at all levels
 - 4) To meet the objectives of the FDA Produce Safety Action Plan to the degree possible
-
- 1) **AGAIN TO PROVIDE:
Productive/Profitable/Sustainable and Safety**

12 BASIC Principles for Good Ag Practices

12 STEP PLAN

1. Document your practices
2. Write down a food safety plan – designate someone responsible for food safety
3. Monitor conditions of your land – check adjoining land for possible sources of contamination
4. Minimize or prevent any contamination from animals, run-off

12 Key Principles for Good Ag Practices

5. Document water source for irrigation
6. Monitor microbial levels in water – wells & municipal source at least annually
7. Train and educate all workers in good personal hygiene and sanitation practices and enforce compliance
8. Provide required field sanitation facilities including soap, paper towels, proper disposal – ensure handwashing

12 Key Principles for Good Ag Practices

9. Follow fertilizer and pesticide regulations including not diluting any agrichemical with water other than potable water
10. Ensure proper hygiene of harvest crews and proper sanitation and cleanliness of containers and equipment.
11. Keep complete records of all that you do and keep written procedures
12. Have crisis/emergency/recall plans in place

KEY ACTIONS

- ▶ Consensus Building – across all lines in industry, regulatory
- ▶ Audit Harmonization – one company shouldn't have to meet 12 different audits
- ▶ No one has right to their “stamp”
- ▶ Develop Interpretations – opinion should not change from auditor to auditor
- ▶ Gain cooperation and buy-in by everyone in the chain from farm to packer to market
- ▶ Consensus building is slow, tedious, sometimes contentious but rewarding in long run



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Username Password click to obtain password

Washington Public Policy Conference

THE PRODUCE INDUSTRY'S MOST POWERFUL PUBLIC POLICY EVENT
SEPTEMBER 14-16, 2010
[WATCH THE PREVIEW VIDEO](#)

United Fresh *Being United Makes All the Difference*

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And sometimes by doing things a little differently.

1 | 2 | 3 | 4



Produce GAP Harmonization Initiative Technical Working Group



**Produce GAPs
Harmonization Initiative**

Over 100 different people from producers, packers, retail, food service, & others involved in consensus review of existing food safety audits
Monthly meetings around the country
Provide consensus document to Steering Committee in September



United Fresh

PRODUCE ASSOCIATION

Step 2. Select an Audits Benchmarking Matrix

Pre-Farm Gate

Post-Farm Gate

Standard Owners



Site Specific Information for each Audit Body

The screenshot displays the USDA Agricultural Marketing Service website. At the top, there is a banner with the USDA logo and the text 'United States Department of Agriculture Agricultural Marketing Service'. Below the banner is a navigation menu with links: Home, About AMS, Newsroom, Opportunities, Online Forms, Help, and Contact Us. The main content area features a green header for 'Grading, Certification and Verification'. Under this header, the 'Fresh Produce Audit Verification Program' is highlighted. The text describes the program's focus on good agricultural practices and third-party audits. To the left of the main content is a search bar and a 'Browse by Subject' menu. To the right are three boxes: 'I Want To' with a link to 'Address List of Fresh Fruit and Vegetable Inspection Offices', 'Resources' with links to 'USDA Audit Checklist (PDF)', 'USDA Audit Score Sheet (PDF)', and 'USDA Audit Checklist & Score Sheet (Excel)', and 'See Also' with links to 'Mushroom Production Audit Scoresheet (PDF)' and 'Commodity Specific Checklist for Mushroom Production (PDF)'. The bottom of the page has a blue and white geometric design.

USDA United States Department of Agriculture
Agricultural Marketing Service **USDA**
ORGANIC

Home About AMS Newsroom Opportunities Online Forms Help Contact Us

You are here: [Home](#)

Grading, Certification and Verification

Fresh Produce Audit Verification Program

With the increasing focus on good agricultural practices to verify that farms are producing fruits and vegetables in the safest manner possible, third party audits are being utilized by the retail and food service industry to verify their suppliers are in conformance to specific agricultural best practices. Since 1999, the Agricultural Marketing Service has been actively involved with the produce industry offering auditing services throughout the food chain to verify that best practices are being followed.

AMS, in partnership with state departments of agriculture, offers a voluntary, audit based program that verifies adherence to the recommendations made in the Food and Drug Administration's [Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables](#).

The Good Agricultural Practices and Good Handling Practices Audit Verification Program is broken down into three major sections: Good Agricultural Practices which examines farm practices; Good Handling Practices which concentrates on packing facilities, storage facilities and wholesale distribution centers; and Food Defense protocols utilized throughout the food chain. In addition to this program, AMS provides oversight for the Leafy Green Marketing Agreements in effect in California and Arizona, along with the California Tomato Growers Cooperative, each with specific best practices criteria that their members can be audited against.

The USDA AMS Fresh Products Branch in collaboration with the [American Mushroom Institute](#) and [Penn State University](#) has

Search AMS

- Advanced Search
- Search Tips
- Market News Search

Browse by Subject

- Market News
- Commodity Areas
- Grading, Certification and Verification
- Science and Laboratories
- National Organic Program
- Commodity Purchasing
- Agricultural Transportation
- Farmers Markets and Local Food Marketing
- Regulatory Programs
- Research and Promotion Programs
- Marketing Orders
- Grant Programs
- International Marketing

I Want To

- Address List of Fresh Fruit and Vegetable Inspection Offices

Resources

- USDA Audit Checklist (PDF)
- USDA Audit Score Sheet (PDF)
- USDA Audit Checklist & Score Sheet (Excel)

See Also

- Mushroom Production Audit Scoresheet (PDF)
- Commodity Specific Checklist for Mushroom Production (PDF)

Harmonized Audit Categories

- ▶ Compliance Plan
- ▶ Field Production
- ▶ Harvesting
- ▶ Cooling
- ▶ Packinghouse
- ▶ Transportation
- ▶ Produce Storage

***Consistent
Auditor
Interpretation
Critical**

FDA Regulatory Concerns on Major Contamination Sources on the Farm

▶ Four Sources of Particular Concern

- Soil
- Water
- Domestic and Wild Animals
- Farm Workers



Guzewich, FDA

The Gate through which
Federal agencies gain entry to
farms



is

Food 
Safety





Food Supply is Global Requirements are Global

Development of international standards

Global GAPs/ GFSI

Codex Alimentarius revisions

However includes considerations over and above food safety that you have not dealt with before

All should be harmonized to allow for free commerce and capitalism

Semantics Matter/ Science Matters

- ▶ In the past “Show me the money !” Jerry Maguire
- ▶ Now, “Show me the data”
- ▶ Grower organizations demanding science be behind the requirements
- ▶ If you don’t have the data,
- ▶ Get it



IOM, NAS Report

Enhancing Food Safety: The Role of the Food and Drug Administration June 8, 2010

“The FDA should work towards a system where the frequency and intensity of inspection of each facility are based on risk”

Co-Management

- ▶ Adaptive co-management is an emerging approach for governance of social-ecological systems
- ▶ Meshing food safety and environmental considerations as well as labor issues are woven in
- ▶ Protecting food safety and biodiversity
- ▶ Sometimes conflicting/difficult decisions
- ▶ Ensures other agency requirements are met
 - Protection of migratory fowl- example

Future

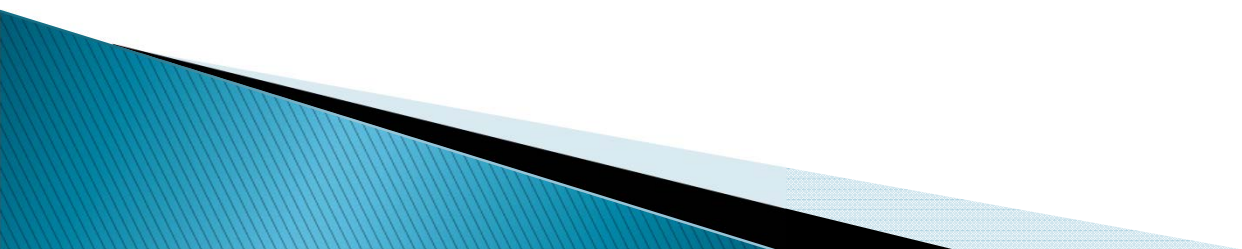
- ▶ Food Safety Modernization Act – at least 12 – 18 new regulations
- ▶ Some may have effect on crop advisor roles
- ▶ Produce Safety Pilot Program required in next year
- ▶ Increased environmental sampling
- ▶ Increased research to hopefully measure risk
- ▶ New regulation on Produce Safety from FDA
- ▶ Positive actions to enhance food safety

Food Safety Modernization Act

- ▶ Most expansive changes since 1938 Act
- ▶ Sweeping new enforcement authorities
- ▶ Focus on prevention
- ▶ Worked on for last 3 years
- ▶ Supported by major produce industries
- ▶ New import requirements
- ▶ Increased inspection
- ▶ Passed, signed yet to be funded

Remaining Issues

- ▶ Contribution of Water and Environmental Contamination
- ▶ We can work through them together by assuring we have accurate data reflecting geographic and seasonal differences and real world scientific data




**FEW REMAINING
CONTROVERSIES**

NEEDED DATA


WATER



WATER

- ▶ Have no real agricultural standards
 - ▶ Rely on federal standards for recreational waters and microbial standards for drinking water in absence
 - ▶ Water in packinghouses should meet stds for drinking water
 - ▶ Know contaminated water can contaminate produce
 - ▶ For more risky categories require dilution of ag chemicals or foliar sprays to meet drinking water standards
 - ▶ Know microbes can grow in spray rigs
- 

Water

- ▶ Salmonella newport found in many spray rigs/irrigation pumps
 - ▶ Can often reduce levels down to acceptable with just sand filters or with 1–3 ppm chlorine
 - ▶ New research reported by CPS shows monovalent iron shavings/scrap metal can reduce cheaply
 - ▶ Continue efforts for research and press for needed data
 - ▶ Don't get upset about the unknown
- 

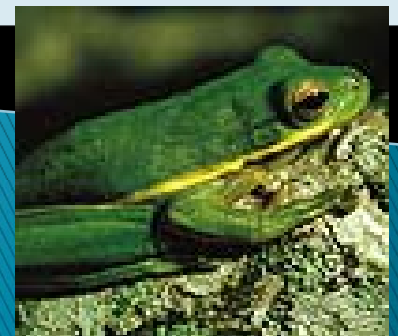


Growers think Salmonella

Every time you see an anole, tree frog or lizard in a packing house or conveyer belt
Salmonella javiana– Salmonella anatum –
reptilian/amphibian sources

74,000 estimated cases Salmonella from
reptiles and amphibians each year

**>90% of reptiles are infected with
Salmonella**



The Times are Changing

Work to have as much influence as possible on the changes affecting the citrus industry

Stay proactive – work for consensus – Get the data needed

Thanks for your cooperation

