Sharpening Your Farmers’ Market Food Safety Knowledge: Visual Tools & Social Media

Shannon Coleman  Judy Harrison  Amy Simonne
Iowa State University  University of Georgia  University of Florida

Marisa Bunning and Elisa Schackelton
Colorado State University
Learning Outcomes

1. Identify common obstacles to safe food handling observed at farmers’ markets’ point of sale

2. Recognize best food handling practices for market vendors of raw agricultural products and ready-to-eat foods

3. Identify benefits of using a variety of educational delivery methods
Over 8,700 farmers’ market in US

3,331 more farmers’ markets than Target and Walmart stores combined

~1,839 Target & ~3,565 Walmart

Numerous Benefits to Farmers’ Markets

• Build stronger community relations
• Improve understanding of food systems and agriculture
• Promote fruit and vegetable consumption
• Encourage physical activity

Households that buy directly from farmers spend more money on fruits and vegetables

Average weekly household spending on fruits and vegetables, dollars

<table>
<thead>
<tr>
<th></th>
<th>Total at all outlet types</th>
<th>At direct-to-consumer outlets</th>
<th>At nondirect food stores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bought fruits and vegetables exclusively at food stores</td>
<td>16.53</td>
<td>12.15</td>
<td>16.53</td>
</tr>
<tr>
<td>Bought some fruits and vegetables at direct-to-consumer outlets</td>
<td>28.36</td>
<td>0.00</td>
<td>16.21</td>
</tr>
</tbody>
</table>

Are Farmers’ Market Safe?

55-74% of producers view their products as safe because

- “they are organic”
- “small operator”
- “they are local foods”

So it’s so much safer and more nutritious than what we can get at the store…

Harrison et al., 2016, Food Protection Trends
Bacterial Presence at the Market

- Microbiological analyses of fresh produce sold at Florida farmer’s market revealed total coliform prevalence
  - **50.8%** (153 of 301) at farmers' market
  - **34%** (34 of 100) supermarket produce

- Total coliform counts
  - Farmers' market
    - Leafy greens – 2.3 log CFU/g
    - Spinach – 2.4 log CFU/g
    - Significantly higher (P<0.05) than supermarket counterparts
  
  - Supermarket counterparts
    - Leafy greens – 1.1 log CFU/g
    - Spinach – 0.07 log CFU/g

- The occurrence of *L. monocytogenes* and higher prevalence of coliform

Roth et al., 2018 (DOI: 10.1016/j.foodcont.2018.05.030)
Food Safety Obstacles at Farmers’ Market

- Lack of handwashing by food stand employees handling
  - Ready-to-eat foods
  - Food at a high risk for foodborne illness
- Lack of handwashing when
  - Handling money
  - Dirty objects
- Farmers’ markets are in uncontrolled environments
  - Impact the safety of the food

Behnke, Seo, & Miller, 2012, Food Protection Trends
What have we seen in the markets?
What have we seen in the markets?
What have we seen in the markets?
What have we seen in the markets?
Mock Market with Good & Bad Practices
Educational Materials – University of Georgia

Free Online Trainings - eXtension website

On the Farm – for farmers on very small farms

At the Market – for managers of farmers markets or farm stands

To register: www.fcs.uga.edu/extension/enroll-produce-courses

Videos

Factsheets

www.fcs.uga.edu/extension/local-food-safety


From Consumers to Chefs

Food Safety Education Matters
Targeted Regulations
Resources with Focus on Local Foods

Shannon M. Coleman, PhD.
Assistant Professor and State Extension Specialist
Dept. of Food Science and Human Nutrition
Iowa State University
Create List for Easier Reading

Jams, Jellies, and fruit Butters

Cottage Foods

**HOME FOOD OPERATION BASICS**
- Home food operations, also known as cottage foods, are regulated by the Food Code and operate largely under the supervision of the local Food Authority.
- The following are not exempt even though the product may be home-cooked: soups, stews, hot cereals, canned, frozen, preserved, or cured, or any other raw vegetable or fruit product.
- Home food operations can prepare and sell baked goods that are considered temperature-sensitive for other TCS foods, such as sandwiches, pastries, and cakes.
- The Food Authority will ensure that all baked goods are stored properly and labeled with a date for consumption.

**LICENSED HOME BAKERY OPERATION BASICS**
- Home bakery operations can create and sell bakery products that are considered temperature-sensitive for other TCS foods, such as pastries, cakes, cookies, and pies.
- The location of the home bakery must be approved by the local Food Authority.
- Home bakery operations must adhere to temperature and time control standards.
- The Food Authority will ensure that all baked goods are stored properly and labeled with a date for consumption.

**Where Produce Can Be Sold**
- Home food operations can sell their products at farmers markets, local food co-ops, or other similar venues.

**Licensing for Home/Farmers Market Distribution**
- Home food operations must obtain a license to sell their products at farmers markets.

**Wholesale Distribution**
- Home food operations can sell products to wholesalers and distributors.

**Gross Sales**
- Gross annual sales limit is set at $10,000. Home food operations must maintain records of sales for auditing by the Food Authority.

**Kitchen Inspection**
- Kitchens must meet the same standards as a food processing kitchen.

**From Consumers to Chefs**

Food Safety Education Matters

cfsec2019.fightbac.org

#foodsafety2019

**REQUIREMENTS**

There are selected fruits that are allowed for the development of jams, jellies, and fruit butters. A list of allowable fruits can be found in the FDA Code of Federal Regulations, specifically 21 CFR Part 119. If you are unsure about an allowable ingredient, contact the Food Authority or your local regulatory authority.

**Soluble Solids of the Final Product**
- Soluble solids determination in a product requires sugar, pectin, and other ingredients to have a concentration that can be dissolved in a liquid. Soluble solids are expressed in percent (%), which indicates the amount of solids that are dissolved in the product.

**Fruit-to-Sugar Ratios**
- Within the limits for each fruit, there are two different groups of allowable fruits and thus two different fruit-to-sugar ratios. One reason is that there are different groups of fruits that require different ratios. The ratio is based on the amount of natural pectin and the amount of sugar required to form a gel.

**Definition of Non-TCS Products and Importance**
- Non-TCS products are those that do not require temperature control and can be stored at room temperature.

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Other than Produce

- Fruit and Vegetable Juice
- **Low Acid or Fermented Foods**
- Eggs
- Seafood
- Dairy
- Poultry
- Red Meat
- Honey and Maple Syrup

Flowchart:

1. Do you produce and sell low acid or fermented foods?
   - **NO**: No regulations, No license required
   - **YES**
     1. How do you market your low acid and fermented foods?
        - Wholesale/indirect markets
          - Required: Food Processing Plant License (DIA3)
        - Direct-to-consumer
          - Required: Food Processing Plant License (DIA3)
Farmers’ Markets: Addressing Challenges with Best Practices using Apps

Marisa Bunning, Ph.D.
Associate Professor & Extension Food Safety Specialist

Elisa Shackelton
Research Associate & Extension Specialist

Department of Food Science & Human Nutrition
Colorado State University
Opportunities to connect with consumers

Preserve Smart Cell Phone Application

- Designed to be used at the market
- Mobile information
- Elevation specific

- Launched in 2018
- 22,248 Pageviews!
- Users from all 50 states
Navigating Landscapes of Farmers’ Markets in your State

• Getting familiar with your local markets
• Knowing who regulates food safety at farmer’s markets
• Understand the cottage food laws and know your risk
• Be on the look for raw milk products
• Locate the research based information from your local Extension Offices?