Food Handler Best Practices at the Farmers Market

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HUGE GROWTH IN FARMERS MARKETS!!

VIRGINIA:

2004:
• 88 markets

Present:
• 239 markets
Foodborne illness in the US

- 48 million cases of FBI annually
- 128,000 hospitalizations
- 3,000 deaths
Farmer’s Market Outbreak

• In 2000, *Escherichia coli* O157:H7 linked to produce samples offered at a farmer’s market in Fort Collins, CO
  
  – 14 People were ill and two elementary school-aged children required dialysis
Farmer’s Market Outbreak

• In 2010, *Salmonella* linked to guacamole, salsa and uncooked tamales at a farmer’s market in east-central Iowa
  
  – 44 People sick and five hospitalized
Farmer’s Market Outbreak

• In 2011, *Escherichia coli* O157:H7 linked to strawberries sold at multiple farm stands and farmer’s markets in Oregon
  – 12 Females and four males became ill
  – 4 hospitalized
  – 2 suffered kidney failure
  – Linked back to deer on the farm
Farmers Market Outbreak

• In 2017, *Salmonella* Thompson outbreak linked to shelled peas at Farmers Markets in Wisconsin

  – 11 cases confirmed
  – 3 counties
  – Likely linked to one vendor selling at several markets
How can we prevent foodborne illness and outbreaks?

- Understand how contamination can occur
- Know the risks
- Know what you can do to control them
- Educate any workers/helpers at your booth
- Reduce your risk!!
Top Five Factors Responsible For Foodborne Illness Outbreaks

1. **Poor Employee Health and Hygiene**
2. **Dirty and/or Contaminated Utensils and Equipment**
3. **Improper Hot/Cold Holding Temperatures of Potentially Hazardous Food**
4. **Improper Cooking Temperatures of Food**
5. Foods from unsafe sources
WAYS TO FOSTER GOOD HEALTH AND HYGIENE:
IDEAL: Restroom facilities:

• Market should provide adequate restroom facilities that:
  – Are **not** used for storage of food, equipment, or supplies
  – Are clean
  – Are separated from other areas
  – Provide toilet paper
  – Have hand washing facilities in close proximity to restroom
IDEAL: Hand washing facilities:

• These should include:
  – Clean water
  – Paper towels
  – Soap
  – Trash can
Creating a hand washing station:

– Hands-free (PVC pipes)
– Six-component method
  • 5 gal cooler with free-flow spigot (clean & sanitary)
    – Constant flow
    – Two-handed washing
  • Soap
  • Clean water
  • Paper towels
  • Catch basin for wastewater
  • Trash receptacle
EXAMPLE OF HAND WASH STATION

HAND SOAP → PAPER TOWELS

WARM WATER → PROVIDE VALVE THAT STAYS ON WHEN OPENED

50 GALLONS

Warm water is preferred for sampling & required for temporary restaurants. 5 gals. is a restaurant requirement.
Encourage following correct hand washing:

1. Wet hands
2. Soap (20 seconds)
3. Scrub backs of hands, wrists, between fingers, under fingernails.
4. Rinse
5. Towel dry
6. Turn off taps with towel
Use Signage:

**The Proper Way to Wash Your Hands**

1. Wet hands.
2. Use soap.
3. Wash hands while counting to 20.
4. Rinse completely.
5. Dry hands with paper towel.
6. Use paper towel to turn off faucet.
7. Put paper towel in trash.

Virginia Cooperative Extension
When should you wash hands?

- Before starting work
- After any absence from booth (example: breaks)
- After restroom use
- After smoking, eating, or drinking
- After sneezing or blowing the nose
- After touching face
- After coughing
- After coughing
- After touching an open sore, boil, or cut
- After handling money or soiled items
- After handling fresh produce
- After taking out the trash
- After any activity that may have caused contamination
Minimize bare-hand contact:

- Gloves
- Tongs
- Spoons
- Hand papers

- Not a substitute for hand washing
  - Helpful for avoiding bare-hand contact with food
- Gloves are capable of spreading germs
- Must be used for single task & discarded
- Make sure you bring enough to the market
Don’t sell at the market if sick:

- Persons experiencing vomiting, nausea, diarrhea or jaundice – kept away from food & food contact surfaces for at least 24 hrs

- Persons with sore throat or fever excluded from working with food
Treat open wounds properly:

• Do not handle food if you have a sore that contains pus or that is infected.

• Cover affected area with a bandage, a finger cot, and then a single-use glove.
WAYS TO **CLEAN** AND/OR PREVENT **CONTAMINATION** OF UTENSILS AND EQUIPMENT:
Clean **AND** sanitize?

- Cleaning removes dirt (soap and water)
- Sanitizing reduces microorganisms to safe levels.
Be prepared with an effective sanitizer:

**Good inexpensive sanitizer:**
1 tablespoon of regular chlorine bleach per gallon of water

1) Spray bottles (made fresh daily)
2) Soak – sanitize utensils after washing (1 min)
3) Applied to surfaces of paper towels or clean cloths to wipe
Equipment & utensil washing at market:

If you serve samples, you have to have a way to wash, rinse & sanitize your utensils.
Prevent CROSS CONTAMINATION:

- Exclude animals
- Regularly clean/sanitize display/food contact surfaces
- Cover or package food
- Separate raw (high-risk) foods from ready to eat foods (low-risk)
Cutting boards & other utensils

- Sanitize all food-contact surface
- If using a cutting board, place on a sanitized surface
- Can be a reservoir for contamination
- Do not use
  - Same cutting board for raw foods & ready-to-eat foods
  - Always clean & sanitize in between use with different types of food
Storage of food at the market:

- Only use food-grade containers that are easy to clean/sanitize
  - Plastic/metal
  - Do not use garbage bags are not food-grade
    - Treated with mold-inhibiting compounds
  - Do not reuse grocery bags
    - May have contamination by food previously stored
Storage of food at the market:

- Keep food items/containers off of the ground
- Do not use Baskets, cardboard / wood boxes
Best Practices for offering samples at the market:

• Provide in single serving sizes
• Package at home before coming to market
• Use temperature control
• Keep covered
• Provide utensils
Bad sample set ups:
HOW TO PROPERLY MAINTAIN TEMPERATURES OF HOT/COLD POTENTIALLY HAZARDOUS FOODS AT THE MARKET
Special foods to consider: TCS foods

• **Require time/temperature control for safety**
  – Raw or heat-treated meats
  – Raw shell eggs
  – Heated vegetables
  – Cut produce (*melons, leafy greens, tomatoes*, seed sprouts)
  – A food that contains any of the above
  – Garlic in oil mixtures (unacidified)
  – Custard and cream filled pies, cheese cakes
TEMPERATURE control:

- Greatest factor that contributes to foodborne illness
- Keep hot foods hot (above 135°F)
- Keep cold foods cold (below 41°F)
- Discard after 2-hours in temp. danger zone!
- Use an accurate thermometer!!
  - The inspector will have one!
How can I adequately keep my foods cold at the Market?

- Coolers with adequate ice
- Display on ice
- Refrigeration (if power)

41°F or LOWER
Keeping food cold with ice

- Made from potable water
- Cold packs
  - More economical
  - Food will not become wet or soft
  - Must have adequate amount of cold packs!
- Ice used for keeping food cold should not be served for human consumption
Cooking foods to the proper temperature for safety
If you are cooking food at the market

Use a calibrated food thermometer and cook to correct temp.

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Minimum Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poultry including ground chicken and turkey</td>
<td>165°F</td>
</tr>
<tr>
<td>Stuffing, stuffed foods, and casseroles</td>
<td>165°F</td>
</tr>
<tr>
<td>Ground meats and eggs</td>
<td>160°F</td>
</tr>
<tr>
<td>Pork, beef, veal and lamb</td>
<td>145°F (3 min)</td>
</tr>
<tr>
<td>fish</td>
<td>145°F</td>
</tr>
</tbody>
</table>
Preventing foods from unsafe sources from being sold at the market
What foods would be considered being from unsafe sources:

• Depends on state/federal regulations
  – Raw milk
  – Low acid canned foods

• Ensuring that the foods that are being sold at the market are from safe sources
  – I.e. Produce or processed in a safe manner.
VCE Resources:

• Extension agents – deliver food safety trainings for vendors
  – Enhancing the Safety of Locally Grown Produce
  – Others

• Fact sheets for vendors
  – On farm food safety – Enhancing the safety of Locally Grown Produce
  – Processor – Enhancing the safety of Locally Prepared Foods
Currently Available

- Jams & Jellies
- Refrigerated/Frozen Meals
- Samples
- Labelling
- Fermented Vegetables
- Refrigerated Dips, Spreads, Dressings and Salads
- Maple Syrup
- Dehydrated foods
- Acidified foods
- Meats
- Dairy (coming soon!)
- Honey
- Baked goods (coming soon!)
- Pet food
- Eggs (coming soon!)
What do I need to know to provide SAMPLES at the farmers market?

Why should I provide samples at the farmers market?
Offering samples at the farmers market allows customers to sample your food before purchasing. This is a great way to promote your business. Even though samples are given away and not sold, vendors should follow safe practices when preparing and offering these food items.

Where should I prepare my samples?
There are two ways to prepare samples:

1. Prepare and package samples in your home kitchen and transport them to the market.
2. Prepare samples while at the market.
Regardless of how you choose to prepare your samples, safe food handling and preparation practices, and regulations associated with your business should be followed. This document will provide best practices for sample preparation.

What are some guidelines to follow for preparing and serving samples at the farmers market?
Apply the same food safety practices for preparing your samples as you do when making your product.

1. Follow good personal hygiene:
   - Pull your hair back, wear a cap, visor or hairnet.
   - Wash hands frequently with soap and water. (The use of hand sanitizers does not replace good hand washing.) Be sure to wash hands after doing other tasks, like smoking, eating, drinking, handling money etc.
   - Wear food-safe gloves during food handling and preparation to prevent contamination.

2. Clean and sanitize surfaces and utensils to prevent cross-contamination:
   - A good sanitizer to use that is easy to transport is from the market is a mild bleach solution (1 tsp regular strength unscented household bleach per gallon of water) in a spray bottle.
   - Keep samples that require refrigeration in a cooler on ice.
   - Use a calibrated thermometer to confirm that samples are kept cold at a temperature below 41°F (5°C).

3. Hold hot samples at hot holding temperatures:
   - Use a calibrated thermometer to confirm that samples are kept above 135°F (57°C).

4. Limit exposure of your samples to outside temperatures to four hours or less if they require temperature control:
   - After four hours, discard any unwrapped samples.
   - If outside temperatures are greater than 90°F (32.2°C), then samples should not be left without temperature control for more than 1 hour.

5. Protect your samples from the environment, people, and pests:
   - Serve samples with:
     - Toothpicks (see fig. 1).
     - Single-use disposable utensils (e.g., small spoons or forks; see fig. 2).
     - Single-use paper.
     - Single-use cups with lids (see fig. 3).
   - Keep samples covered with a dome or plastic covering; see fig. 4.

6. Protect your samples from the environment, people, and pests:
   - Serve samples with:
     - Toothpicks (see fig. 1).
     - Single-use disposable utensils (e.g., small spoons or forks; see fig. 2).
     - Single-use paper.
     - Single-use cups with lids (see fig. 3).
   - Keep samples covered with a dome or plastic covering; see fig. 4.

Figure 1. Samples served using single-use cups and toothpicks. (Photo courtesy of Tim Woods, University of Kentucky)

Figure 2. Samples served using single-use cups and single-use spoons. (Photo courtesy of Tim Woods, University of Kentucky)

Figure 3. Samples served using closed single-use cups. (Photo courtesy of Tim Woods, University of Kentucky)

Figure 4. Samples covered and protected with a dome or plastic covering. (Photo courtesy of Renee Boyer, Virginia Tech.)

ENHANCING THE SAFETY OF LOCALLY PREPARED FOODS

7. Protect customers with allergies:
   - If your sample contains one of the eight major allergens (milk, eggs, crustacean shellfish, fish, tree nuts, wheat, peanuts, soybeans), display a sign or label to inform customers.

8. Cover samples and store them at least 6 inches off the ground.

Figure 4. Samples covered and protected with a dome or plastic covering. (Photo courtesy of Renee Boyer, Virginia Tech.)

What specific practices should I follow if I am preparing and packaging my samples in my home kitchen?
Preparing samples from your home kitchen allows you to better control food safety hazards. You can prepare your samples in packaged single servings to avoid any contamination during transport and at the market. (e.g., use 2-ounce [60 mL] cups with lids; see figs. 1-3). If samples require refrigeration, be sure to transport them in a cooler with ice.

What specific practices should I follow if I am preparing samples at the market?

Even if you are preparing your samples at the market, it is best to divide your samples into single-serving portions for patrons. This minimizes cross-contamination because the customer selects one sample and avoids touching others.

You must follow the same practices at your market booth as you do in your home kitchen during food preparation. To do this, you may want to incorporate an on-site handwashing station (see fig. 5) at your market booth, and an on-site warewashing station. A warewashing setup includes three basins: one for washing, one for rinsing, and one for sanitizing (see fig. 6). Some markets require the three items.

Reference
What do I need to know to sell REFRIGERATED DIPS, SPREADS, DRESSINGS, and SALADS at the farmers market?

What are refrigerated dips, spreads, dressings, and salads? Many prepared foods such as dips, spreads, dressings, and salads are popular items to sell at a farmers market. Most of these items require refrigeration to ensure safety. These foods contain a lot of moisture and do not have enough acidity to control microbial growth. They require time and temperature control to ensure their safety, and they are often referred to as ‘TCS’ or potentially hazardous foods. Some examples include:

- Hummus
- Refrigerated salsa
- Pasta (see fig. 1)
- Mayonnaise-based salads (e.g., potato salad; see fig. 2)
- Guacamole (see fig. 3)
- Salad dressings.

Figure 2. Refrigerated potato salad. (Photo: “Potato Salad Food Safety Healthy Dinner” by karyn.to, licensed under CC0 1.0) (Photo courtesy of Pisabay, Creative Commons License.)

Figure 3. Preparation of guacamole. (Photo courtesy of Susan Chen, Virginia Tech)

What is kombucha?
Kombucha is a beverage made from brewed tea and sugar that is fermented using a symbiotic culture of bacteria and yeast (generally abbreviated as SCOBY). Kombucha is slightly sweet and acidic often containing residual carbon dioxide. Some kombuchas also have fruit juice or other flavors added. Kombucha is generally made using the following steps (adapted from Nummer, 2013):

**Table 1. General steps to produce kombucha**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Boil water</td>
</tr>
<tr>
<td>2</td>
<td>Add tea and steep for 10 minutes</td>
</tr>
<tr>
<td>3</td>
<td>Remove tea leaves and cool</td>
</tr>
<tr>
<td>4</td>
<td>Add 10% inoculum (SCOBY)</td>
</tr>
<tr>
<td>5</td>
<td>Ferment at room temperature for 7 – 10 days</td>
</tr>
<tr>
<td>6</td>
<td>Refrigerate covered</td>
</tr>
<tr>
<td>7</td>
<td>Filter or remove culture mass</td>
</tr>
</tbody>
</table>

Why produce kombucha?
It is a beverage consumed in many countries and is quickly becoming a popular beverage in the United States because it has perceived health benefits.

What is the fermentation process and why is it important?
Kombucha is produced using a two-step fermentation process. In the first step, the yeast in the SCOBY ferments the added sugar and forms alcohol and carbon dioxide. In the second step, the bacteria in the SCOBY ferments the alcohol to produce vinegar (acetic acid). Production practices and fermentation conditions will influence the percent of alcohol and vinegar in the final product. For this reason, alcohol production must be monitored closely. Food and beverage products that contain greater than 0.5% alcohol may be subject to Alcohol Beverage Control Authority (ABC) and/ or Alcohol and Tobacco Tax and Trade Bureau (TTB) regulation and taxation. Additionally, if fermentation continues for too long, excess vinegar may be produced making the product too acidic for frequent consumption.

Why does kombucha continue to ferment after the SCOBY is removed?
Your kombucha will continue to ferment after the SCOBY is removed because tiny fragments of the SCOBY will remain in the beverage. If you do not pasteurize (heat treat) your product, the remaining yeast and bacteria will continue the fermentation process until there is no sugar left to ferment. This could lead to a beverage that is high in alcohol or dangerously acidic. Additional ingredients like juice or other flavorings could also contain sugar and allow for further fermentation, producing even more alcohol or vinegar.

How do I know if TTB Regulation is required for my product?
Kombucha producers must be aware that fermentation continues unless deliberately stopped. Therefore, the kombucha beverage could have less than 0.5% alcohol by volume when it is bottled, but the fermentation may continue after bottling. As a result the beverage could exceed the 0.5% alcohol by volume requirement and fail TTB regulations.
Questions?

Farmers Market
OPEN TODAY