Science-Based Basics for Transporting Food Safely

Speakers

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Outline

- Center Overview
- 2015 Simulation of field trip sack lunches
- 2015 Summer Food Service Program
- 2016 Milk temperature simulation
Center for Food Safety in Child Nutrition Programs

Mission
To conduct food safety research that meets the needs of Food and Nutrition Service's nutrition assistance programs using an interdisciplinary team approach and to disseminate results to a variety of targeted audiences.

Vision
The vision of the center is to provide leadership in advancing food safety research and practices within Food & Nutrition Service’s nutrition assistance programs.

Center Leadership Team

Kevin R. Roberts, PhD
Co-Director & Professor

Kevin L. Sauer, PhD, RDN, LD
Co-Director & Professor

Carol Shanklin, PhD, RD
Dean of the Graduate School
Acknowledgements

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Abbreviated Scope of Work

- 2011 Health Inspections
- 2011 Cooling of School Foods – Phase I
- 2012 Food Safety Plan Guidance Document
- 2012 Food Safety Plan Implementation
- 2013 Produce Wash
- 2014 Allergy Management
- 2014 Field Trip Food Safety
- 2015 Cooling of School Foods – Phase II
- 2015 Exploration of Food Safety and Food Waste
- 2015 Summer Food Service Program with ICN
- 2015 Simulation of Field Trip Sack Lunches
- 2016 Employee Behavior Assessment, I & II
- 2016 Milk Temperatures for Alternative Service Styles
- 2020+ Food Defense, Production Systems, Farm to School, and more

Food Safety Partnership
Research Methods

- Identify current food safety practices
- Collect data on how food was handled directly from operators
  - Observations
  - Survey
- Collect temperatures of foods
  - Simulation
  - On-site collection

What we learned from the Sack Lunch and SFSP studies...
Sack Lunches: What we did!

Temperature Curves for Sack Lunches

Cold Holding Recommendations
• Use insulated containers to maintain temperature
• Use ice, ice sheets, or ice packs to help maintain temperature
• If possible, reduce the time from packing for transport to service
Hot Holding Recommendations

- Use hot holding equipment or insulated containers to maintain temperatures
- Use hot packs as needed
- If possible, reduce the time from end of preparation to service

Transportation of Food Recommendations

- Check temperatures of food throughout the transportation process to ensure food is out of the danger zone*
- Maintain equipment in good condition for the best possible temperature control
- Adapt methods to ensure food stays out of the danger zone
- Keep cold foods out of direct sun
- Use frozen food items (Juice) to help maintain temperatures
- If supplementing with non-insulated transportation containers, serve from those first

Packing Milk for Alternative Service
Research Methods
• Identify current service practices for Alternative Breakfast Service
  • Collect data on how milk was handled directly from operators
  • Interview
• Collect temperatures of foods
  • Simulation
    • Room Ambient Temperature [74°F]
    • Elevated Ambient Temperature [89°F]

Milk Study: What we did!

Container:
• Soft Sided Cooler
• Hard Sided Cooler
• Sheet pan
• Milk crate

Cooling Product
• Ice
• Ice Sheet
• No Ice

What we learned from the Milk Study...
Temperature curves for milk

What really worked?

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Ice</th>
<th>Ice Sheet</th>
<th>No Ice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk Crate</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Sheet Pan</td>
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<td></td>
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<tr>
<td>Steam Table Pan</td>
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<td></td>
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<tr>
<td>Soft-sided Cooler</td>
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<tr>
<td>Hard-sided Cooler</td>
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</tbody>
</table>

Does your process maintain the appropriate temperature?

- Select thermometer or data logger based on the method/budget
- Test your transportation procedures
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