

Effective Farm-to-Fork Consumer Education at Local Farmers Markets

Molly Albin and Dr. Jennifer Richards

The University of Tennessee, Knoxville
Department of Food Science and Technology

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TOGETHER: A FOOD SAFE AMERICA

Agenda

- Purpose
- Background
- Research Objectives
- Procedure
- Findings of Interest
- Conclusions
- Acknowledgements
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Purpose

- Foodborne illnesses create a loss for families, communities, companies, and the health care system (Jevsnik et al 2008)

Purpose

- Successful education begins with identification (Medeiros et al 2001)
 - The target population
 - The target skill(s)
- Important to educate consumers on behaviors leading to possible foodborne illness in order to make proper assumptions when handling food (Jevsnik et al 2008)

Purpose

- Lack of food safety educational materials targeted at farmers market consumers
 - “Respondents are not aware of their role in the food safety chain or with the importance of maintaining a cold chain” (Jevsnik et al 2008)
 - Need to educate consumers from the “point of purchase to the home” (Jevsnik et al 2008)

Background

- According to the Centers for Disease Control and Prevention in 2013 (CDC 2014)
 - **1:6** Americans get sick due to a foodborne illness
 - **128,000** Americans are hospitalized
 - **3,000** Americans die

Background

- Farmers Markets are one of the oldest means for smaller producers to touch consumers (Kezis et al 1998)
- Popularity is on the rise in recent years
 - **20%** gain in Tennessee from 2013-2014 (Times Free Press 2014)
- Farmers markets run from May-November
 - High risk time for foodborne illness during summer month (USDA 2013)
 - Varying times, locations, products

Research Objectives

- Assess the population of consumers at farmers markets who purchase consumable goods to:
 1. Determine food safety misconceptions among farmers market consumers
 2. Develop an educational pamphlet for the target population in order to reduce the found misconceptions

Procedure

- Development of a survey instrument
 - Literature review of prior research on farmers market population
 - Identified existing instruments
 - Consulted with experts to help identify questions related to goals of the study
 - Included members with the following expertise
 - Consumer Education
 - Fruit and Vegetable Microbiology Food Safety
 - Meat Science
 - Survey Research and Education

Procedure

- Conducted field tests at similar farmers markets ($n=18$)
- Modifications of field instrument
 - Minor verbiage edits
 - Addition of a miles travel question



Instrument Design


- Two part instrument
 - Screener
 - 6 items including
 - Demographic
 - Purchase of a perishable food
 - Frequency of shopping at farmers markets
 - Used to determine if participants were qualified to complete the questionnaire

Instrument Design

- Two part instrument
 - Survey
 - 9 items including
 - Commonly purchased goods
 - Reasons for shopping at farmers markets
 - Knowledge of time and temperature relationship
 - Travel time and distance from the farmers market
 - General dispositions toward food safety

Instrument Design

- Cover letter and consent form

THE UNIVERSITY of TENNESSEE 

Dear Knoxville Market Square Farmers Market customer,

Thank you again for your willingness to participate in my graduate thesis research study by completing this questionnaire. In taking this questionnaire, I ask that you please take your time answering each question as honest as you can.

As you begin this instrument, I ask that you:

- (1) Complete the opening questions. Based off your results, you will be stopped or proceed to the final questions.
- (2) As you complete the questionnaire, if you have any concerns or questions please ask your interviewee.
- (3) Upon completion of the questionnaire, please hand back the iPad to your interviewee.

The data collected will be used to help determine the knowledge and perception of food safety in a farm-to-fork consumer. Your results will be used in the final report on this research project; however, all results and data will be anonymous.

I appreciate you taking the time to participate in my research study.

Sincerely,
Molly Albin, Graduate Research Assistant
The University of Tennessee, Department of Food Science and Technology

**PARTICIPANTS INFORMED CONSENT STATEMENT FOR:
"Food Safety Knowledge and Perception on Farm-to-Fork Eating"**

THE UNIVERSITY OF TENNESSEE,
DEPARTMENT OF FOOD SCIENCE & TECHNOLOGY

A. Introduction You have been invited to voluntarily participate in the field-testing for a graduate thesis research study of consumers for the evaluation of food safety knowledge and perception at Knoxville's Market Square Farmers Market. The purpose of this survey is to assess the knowledge and perception of food safety in farm-to-fork consumers.

B. Information about Participants' Involvement in the Study Your involvement in the study would include participating in a screener survey consisting of six questions prior to participating in a survey consisting of 9 questions. Followed by the ability to have your perishable good's surface temperature tested. This study will take you around 10 minutes to complete.

C. Risk There is minimal risk to you as a participant in this research study.

D. Anonymous Participants will not be asked to put their name on the survey. These surveys will be electronically stored on a secure, password protected server for a period of 2 years then will be destroyed. The surveys will be made available only to the investigator and her graduate committee members at the University of Tennessee. Selected survey comments made may be included in the thesis; however, your name will not be released with these comments.

F. Contact Information If you have questions at any time about the study or the procedures you may contact the investigator, Molly Albin, at the University of Tennessee; 2510 River Drive; Knoxville, TN 37996, or call (865) 974-7107.

G. Participation Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty. If you decide to not have your food's surface temperature tested, it will not affect your participation in this study

CONSENT

I have read the above information. I have received a copy of this form. I agree to participate honestly in this study.



Consent Agreement

- I do agree to the conditions of this research experiment
- I do not agree to the conditions of this research experiment



Instrument Design

- Participants were handed an iPad and stylus to complete the survey instrument

THE UNIVERSITY of TENNESSEE **UT**

How important are the following when considering purchasing perishable good(s) at the Market Square Farmers Market?

	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
To avoid pesticides and other chemicals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eating local to assist our local economy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eating local to assist our local farmers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Atmosphere	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenience to your work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variety of products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good vendor service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product healthfulness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eating local for environmental concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product freshness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenience to your residence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product taste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food safety concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Procedure

- Conducted formal testing at Market Square Farmers Market
 - Downtown Knoxville
 - Wednesday and Saturday market
 - July-October
- Obtained data at 6 markets during the season



Procedure

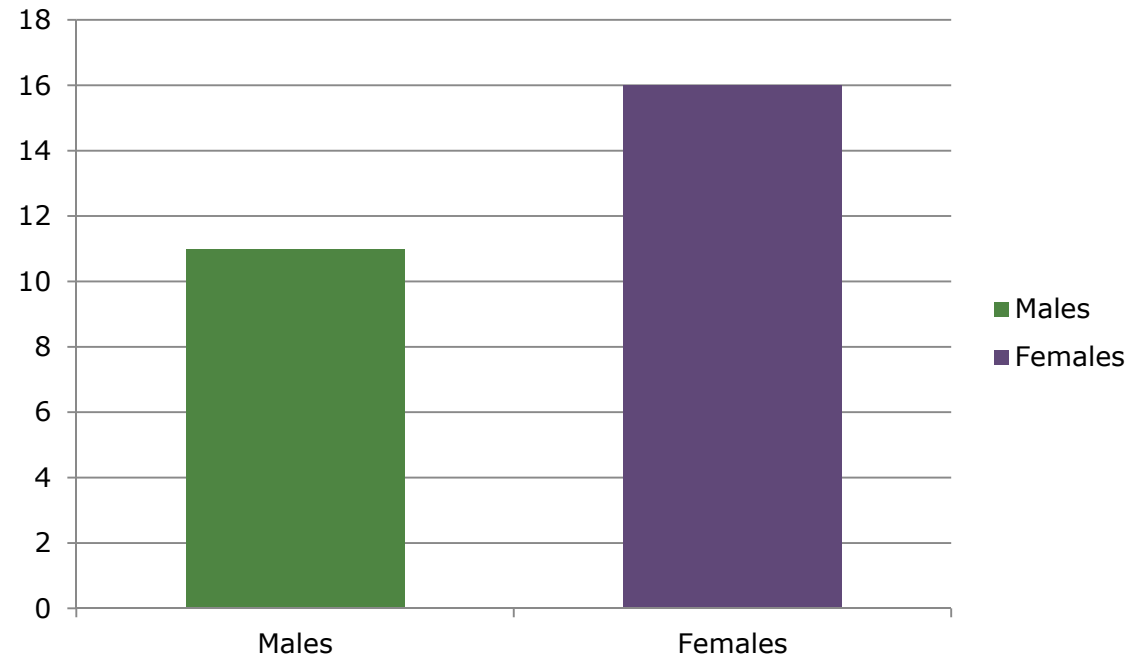
- Incentives were provided for participation
 - UT Food Safety Extension freezer/refrigerator thermometer
 - “Thermy” refrigerator magnet for internal temperatures of cooked meats



Survey Results

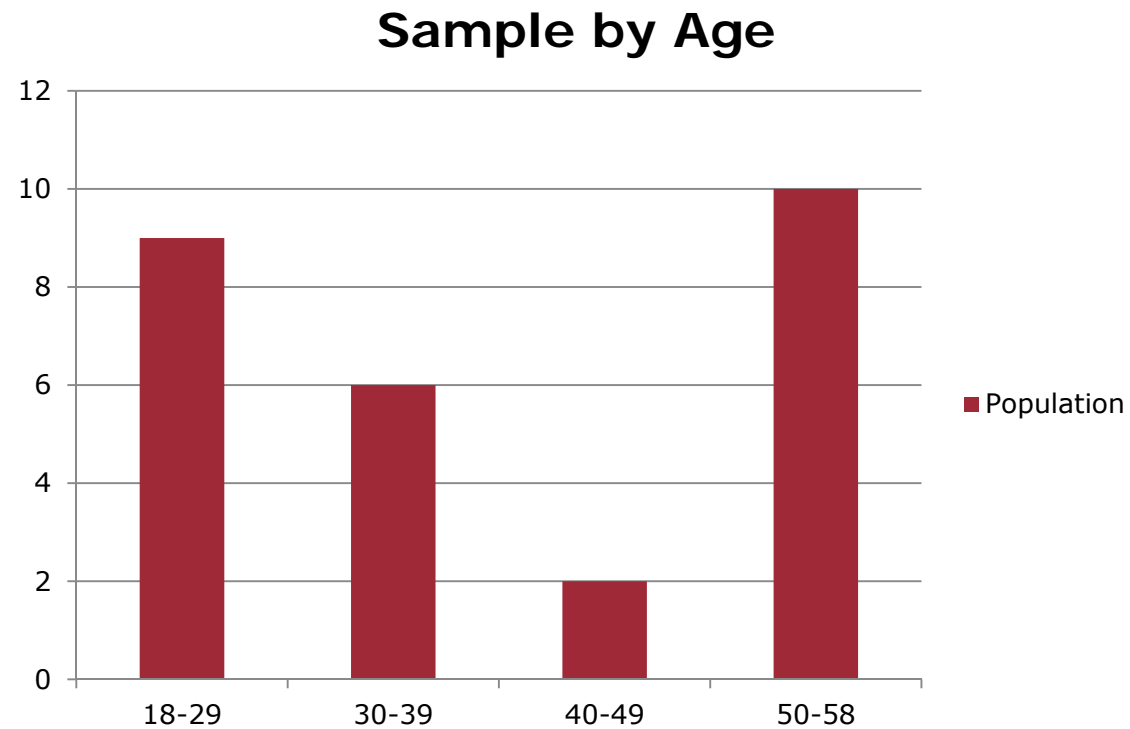
- n=27

Sample by Gender



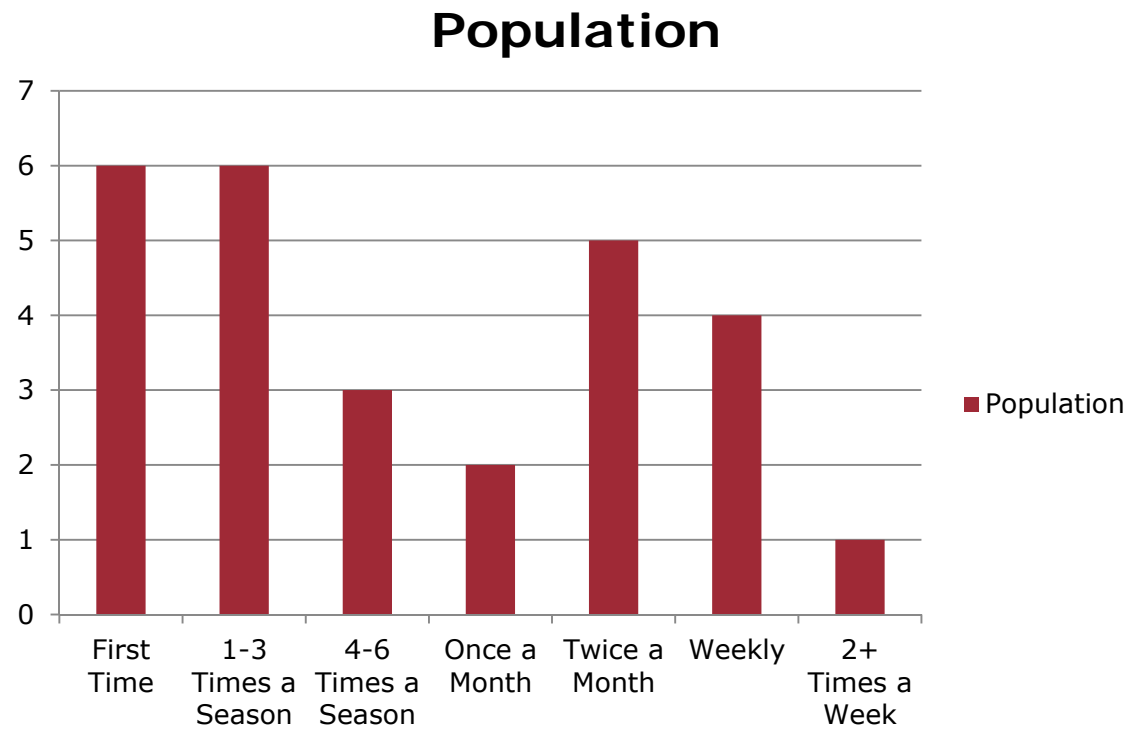
Survey Results

- n=27



Survey Results

- n=27



Findings of Interest

- **89%** believe “It is *important* or *very important* to purchase goods at farmers markets to avoid pesticides and other chemicals”
 - **37%** believe it’s important
 - **52%** believe it’s very important

Slide 23

J4

I think that it might be important for the audience to see how this question was framed. Perhaps include the screen shot of this question prior to this slide. For consistency, you might move the other screen shot of your question (growth rates) to just before that results slide as well.

Jennifer, 11/25/2014

Findings of Interest

- Organic crops are made with *at least* 95% organic materials in order to use the certified organic seal (USDA 2012)



- Natural crops does not mean organic, but rather minimally processed or not fundamentally changes
- All other crops follow strict regulations by the FDA on additives, pesticides, fertilizers, etc.

Findings of Interest

- **89%** stated that perishable foods held between 40-140°F can grow harmful bacteria in less than 2 hours
 - **19%** thought less than 30 minutes
 - **48%** thought 30-60 minutes
 - **22%** thought 1-2 hours

Findings of Interest

- Bacterial growth occurs most rapidly when foods are stored in the *danger zone* or 40-140°F for over 2 hours (FSIS 2011)
 - **85%** intended to make a purchase on their day of interview
 - **11%** “packed a cooler, insulated, bag, ice chest or ice packs when you plan to purchase a perishable food”
 - **89%** thought bacteria grows in under 2 hours

Conclusions

- Important for consumers to understand pesticide and other chemical use
- Relationship between time and temperature
- Plan for perishable purchases accordingly

Food Safety at Farmers Market

Produce at farmers are grown just like the produce at your grocery store

To avoid chemical and pesticides, purchase certified organic goods

Certified organic vendors will display a "USDA Organic" seal on all their products



Perishable goods should need to exceed 2 hours in the danger zone of 40-140°F

Pack a cooler, ice chest, or ice packs to prevent growth of harmful bacteria growth

Food Science 
& Technology

Acknowledgements

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- Market Square Farmers Market
- Cary Springer, Office of Information and Technology at the University of Tennessee

Contact

Molly Albin

molly@tennessee.edu

865-974-7107

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