

## 2018 Reciprocal Meat Conference – Education and Extension Tools

## Meat and Muscle Biology™



## Assessing Consumer Food Safety Knowledge and Practice at Temporary Events

M. Yavelak<sup>1\*</sup>, J. B. Luchansky<sup>2</sup>, A. C. Porto-Fett<sup>2</sup>, J. J. Hochstein<sup>3</sup>, J. A. Campbell<sup>4</sup>, D. J. Hanson<sup>1</sup>, C. Warren<sup>5</sup>, A. Schollenberger<sup>6</sup>, and B. J. Chapman<sup>7</sup>

<sup>1</sup>Food, Bioprocessing, and Nutrition Sciences, North Carolina State University, Raleigh, NC, 27695, USA;

<sup>2</sup>United States Department of Agriculture–Agricultural Research Service, Wyndmoor, PA, 19038, USA;

<sup>3</sup>University of Nebraska–Lincoln, Lincoln, NE, 68588, USA; <sup>4</sup>Animal Science, Pennsylvania State University,

State College, PA, 16801, USA; <sup>5</sup>Souderton Area High School, Souderton, PA, 18964, USA; <sup>6</sup>PennState 4-H, State

College, PA, 16801, USA; <sup>7</sup>Agricultural and Human Sciences, North Carolina State University, Raleigh, NC, 27695, USA

\*Corresponding author. Email: mkyavela@ncsu.edu (M. Yavelak)

**Keywords:** food safety, intervention, knowledge, temporary event

Meat and Muscle Biology 2(2):166–167

doi:10.221751/rmc2018.145

## Objectives

Meat and poultry products are implicated as the likely source in 29% of reported foodborne illnesses and 22% of foodborne illness-linked deaths. A subset of meat-related foodborne illnesses occur at temporary events (TEs) such as sporting events or large social gatherings. This is likely due to their lack of food safety infrastructure, trained food preparers, and conventional food preparation facilities. Previous studies suggest that most food preparers at pre-game tailgate events (66%) do not use thermometers when cooking. The literature has limited data that evaluates attitudes and behaviors of people who attend these types of events. The purpose of this study was to determine if an in-person, hands-on food safety intervention is an effective approach in changing sustained self-reported behaviors of consumers.

## Materials and Methods

Trained instructors provided information on handwashing, cleaning and sanitizing, thermometer use, and indicating meat doneness to customers ( $n = 107$ ) of the Penn State University Meat Lab. Instructors used a semi-structured script and group-based learning to deliver consistent information while leaving room for more personalized dialogue and questions. Four educational stations were utilized to conduct hands-on demonstrations and empower participants while they applied newly acquired skills. Self-reported food safety behavior data was collected prior to providing food safety information and 1 and 4 mo following the intervention.

## Results

50.8% of participants reported thermometer use when cooking meat prior to being presented with information for home thermometer use ( $n = 107$ ). Of the participants that responded after 1 mo ( $n = 41$ ), 77.4% reported using temperature to determine doneness for meat preparation. A paired  $t$  test on thermometer use frequency revealed a significant increase ( $p < 0.05$ ) in frequency pre and 1 mo post intervention ( $n = 41$ ), and no significant change ( $p > 0.05$ ) between 1 and 4 mo post intervention ( $n = 32$ ).

Retention of knowledge was measured on a 1 (not knowledgeable) to 5 (very knowledgeable) Likert scale. A paired  $t$  test of participants from the pre and 1 mo post assessment showed knowledge significantly increased ( $p < 0.05$ ) for lessons addressing cross-contamination, cleaning and sanitizing, and handwashing ( $n = 41$ ). A similar test showed sustained knowledge ( $p > 0.05$ ) between 1 and 4 mo for cross contamination and cleaning and sanitizing ( $n = 32$ ).

After 1 mo, 92.7% of participants reported changing food safety behaviors as a result of the intervention ( $n = 41$ ). Improvements were reported in the following areas: cleaning and sanitizing (39.5% of participants), using a food thermometer (36.8%), handwashing (13.2%), cooking to the proper temperature (13.2%), preventing cross contamination (10.5%), other (10.5%), and unspecified (2.6%) ( $n = 41$ ).

## Conclusion

Results from this training indicate that hands-on stations centered around TE-specific risk factors can significantly increase knowledge and self-reported safe practices of TE participants and sustain them through

4 mo. As many food preparers at TEs have not received professional food safety training, education and skill-building that leads to proper food safety behaviors is crucial in reducing the amount of improper food safety behaviors at TEs. The practicality and effectiveness of this intervention makes it an ideal option for educating future TE-specific audiences.