

USE OF A MEAT SCIENCE COURSE FOR EVALUATION OF CONSUMER KNOWLEDGE AND APPLICATION OF MEAT THERMOMETERS

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I. OBJECTIVES

The objectives of the current study were to equip course participants with knowledge of meat cookery and proper endpoint temperatures in an effort to reduce the incidence of food-borne illnesses. In addition, it was intended that the course participants in this survey would enhance their accuracy, frequency, and comfort level when using a thermometer for cooking meat products.

II. MATERIALS AND METHODS

Undergraduates participating in a meat science course have limited knowledge of meat cookery and food safety. In an effort to enhance the undergraduate consumer education on use of food safety measures during meat cookery, a module on meat cookery and meat thermometers was incorporated into the Muscle Foods course within the Department of Animal Sciences. ANSC 3700 is a 4-credit course taught each spring semester with an annual enrollment of up to 60 participants. Muscle Foods is designed to introduce the theories and principles of meat animal production from conception to consumer. Students participate in 1-h lectures (3/wk) and a 2-h “hands-on” laboratory experience (1/wk) at the Lambert-Powell Meat Laboratory. During the first week of the course, a survey (PRETEST) on the use and application of meat thermometers was provided electronically to each student within the course using Qualtrics online survey software. In a 5-min survey, participants were asked level of intent on purchasing, using, and owning a meat thermometer. In addition, questions were asked about degree of doneness, methods to determine degree of doneness, and frequency of using a thermometer when cooking meat. Demographic questions were asked to aid in identifying previous potential influencers of meat thermometer use. During the course lecture and laboratory meetings, educational material was presented to course participants regarding the use of meat cookery methods and various thermometer models (dial vs. digital). The information on measuring meat and food internal cooking temperature occurred on 8 different occasions throughout the 16-wk course. With the interruption of courses due to coronavirus disease 2019, delivery of content transitioned from face to face to a virtual classroom. To summarize the use and application of a meat thermometer during cooking, a video produced by the North American Meat Institute was provided to course participants. Following the video, course participants completed a 5-min POSTTEST survey, which included the same PRETEST questions.

III. RESULTS

Responses (PRETEST) from course participants indicate that 70% can measure meat cookery using a thermometer. However, participants (67.24%) also deem that cutting into a hamburger is used for determining degree of doneness. Course participants (65.52%) measuring internal temperature of hamburgers use 71.1°C as the safest internal temperature, whereas the use of a thermometer on multiple occasions (3.5%) needs to be addressed.

At the conclusion of the course (POSTTEST), respondents indicated (51.06%) that they were extremely confident in purchasing the correct thermometer. Additionally, at the conclusion of this course, respondents (100%) were more confident in measuring internal meat temperature. Respondents (72.34%) also deemed that 71.1°C was a safer internal temperature for hamburgers.

IV. CONCLUSION

Results suggest that providing training on use and adoption of meat thermometers for cooking is beneficial to undergraduate consumer knowledge of meat cookery. In addition, training on meat cookery and internal meat doneness should possibly occur earlier than a collegiate meat science course.

Keywords: consumer survey, meat cookery