

Gate-To-Plate: Professional Development Exploring the Meat Science Industry

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Introduction

One of the driving forces behind the meat science industry is skilled employees, who produce products for consumer consumption. Due to the needed level of expertise, labor disruptions within the meat-packing sector can greatly hinder the industry as there is a limited pool of acceptable and skilled candidates to replace lost workers (Collins et al., 2025). Only spotlighting the high turnover rate within the industry. One of the key reasons stemming from young employees utilizing this industry as a “temporary job” (MacLachlan, 2000). According to Whitehead and Kim (2022), the COVID-19 pandemic led to a decrease in employees interested in working at meat packaging facilities. To overcome the lack of interest in this agriculturally based sector, secondary agriculture education plays a pivotal role as it can highlight future careers as well as real-world connections. Specifically, focusing on applicable skills for students, which they can utilize as future employees or consumers (The National FFA Association, n.d.). If agriculture educators are expected to inform students about this industry, then there must be professional development (PD) events and resources available for educators to properly support students' interest (Yopp et al., 2020). To meet these needs for professional development, a program was created to highlight the multiple facets of the meat science curriculum and industry.

How It Works

Educators dedicate three full days to improving their knowledge of production animal agriculture and the meat industry. Following the succession of the food animal cycle, participants naturally started at a commercial cow-calf cattle operation ran by the Kentucky Cattlemen’s Association. At the farm, chute-side learning occurred as Beef Quality Assurance (BQA) topics were taught. Educators learned about a wide variety of safety practices from proper working facilities to administering vaccinations. While at the farm, participants explored practical and innovative sustainability practices that were being implemented, such as sand water filtration and large hay feeding systems. This stage of the PD allowed individuals from non-livestock management backgrounds to develop a deeper understanding of the initial start to the beef cycle, while providing more advanced learners with visionary ideas to implement back at their operations. After leaving the farm, participants moved to the stockyards to grasp the selling process and meet with industry specialists. Not only did participants witness a live sale, but they also learned from an education specialist with the Kentucky Cattleman’s Association. Teachers acquired resources, lesson plans, tangible beef posters, and grant ideas they can utilize in their classrooms. A registered dietitian provided lessons, activities, and insight into the nutritional value of beef. Once enhanced comprehension was gained for the production sectors, participants dove into the processing divisions of the beef industry. By partnering with the University of Kentucky and The Ohio State University meat science departments, participants gained hands-on experience breaking down cuts of beef while also learning about grading and cooking methods. Furthermore, the United States Department of Agriculture’s (USDA) involvement throughout the slaughter process was discussed as they set regulations for the nation. Participants were guided through the proper processing operation and discussed important USDA checkpoints. Integrating new cooking methods and knowledge, participants put their skills to the test with a cooking challenge.

The PD concluded with a focus on producer educated decisions, namely breeding and nutrition. Animal science specialists from the University of Kentucky provided applicable activities and examples to help educators deepen their understanding of expected progeny differences (EPDs),

followed with a lecture on rotational grazing practices and feed ration demonstrations. Throughout each stage of the professional development event, teachers left with curriculum and knowledge that could be implemented within the secondary classroom. The Gate-To-Plate event places substantial worth on providing beef focused curriculum and knowledge to secondary agricultural educators, which corresponds with the AAAE values of fostering healthy living through human nutrition and promoting the public's knowledge of AFNR systems (AAAE, 2023).

Results to Date/ Implications

This two-year professional development event has impacted 30 educators and adult learners, which in return has enlightened many secondary agricultural education students and more across the state. Beyond educators, professional chefs, graduate students, beef council interns, and college athletes have participated throughout this event to broaden their knowledge of the beef industry and potential opportunities to pursue. Curriculum relating to the food and animal science pathways were provided for agriculture educators to manipulate in order to fit their programs. Also, tools such as grading cards and meat judging tools were distributed to help provide guidance and practice for future career development event teams (CDE). Beyond accumulating tangible materials to utilize in the classroom, professional connections were established through collaboration and preparation for the professional development event. Besides the collaboration between the University of Kentucky's animal science, meat science, and agricultural education and advocacy program, outside organizations were incorporated in the partnership. The Kentucky Department of Education Office of Career and Technical Education and the Kentucky Beef Council contributed to the success of the event as they provided opportunities and insight for educators.

Future Plans

To provide insight for the host, a pre- and post- satisfaction survey was completed by all participants. Results will be used to advance the content, curriculum, and schedule for future professional development events. Not only will this survey continue to provide constructive feedback for improvements, but it provides an outlet for future research. Prospective research can focus on the overall growth of educators from the beginning to the end of the event, with a focus on their self-efficacy when teaching the content. Additionally, examining the impact that utilizing the curriculum has on students' overall understanding of the beef industry and their outlook on prospective meat industry careers.

Costs/ Resources Needed

The original cost of the professional development event was \$11,949. Participants cost was \$150 which included housing, transportation, meals, and dorm supplies. Additional consumables were covered by the Perkins Career and Technical Education grant which allowed educators to leave with a hard hat, frock, knives, gloves, safety glasses, and a multitude of meat science curriculum from One Less Thing. The funding also covered a grilling, food safety, and nutrition expert, and all the lab consumables needed for the event to be successful. Additionally, the Kentucky Beef Council donated local beef and classroom resources such as "Beef is What's for Dinner" merchandise, full lesson plans, recipe books, and educational posters. The top three culinary challenge winners acquired cooking utensils, lunch boxes, and cast-iron skillets all donated by the Beef Council.

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