Gate to Plate: Empowering Agricultural Educators to Bridge the Meat Industry Workforce Gap

Introduction

The meat industry plays a critical role in global food systems, providing essential protein sources and contributing significantly to national economies (Bardhan, Byrd, & Boyd, 2022, Bureau of Labor Statistics, 2024). However, the sector has faced a growing labor shortage, worsened by the disruptions of the Covid-19 pandemic. The pandemic not only led to temporary shutdowns and bottlenecks in meat processing but also contributed to a significant decrease in workforce participation, with many skilled workers leaving the industry. This prompts the need for long-term solutions to replenish its workforce.

One potential solution lies in educating the next generation of students about career opportunities in meat science. Agricultural educators are well positioned to inspire students and equip them with the knowledge and skills necessary to pursue careers in this field (AAAE, 2023). However, many educators lack the specialized training required to teach meat science comprehensively. This gap in educator preparation led to the development of a targeted professional development experience to provide secondary agricultural educators with hands-on, practical experiences in meat science. By increasing educators' expertise in this area, the program aims to indirectly bolster the meat industry workforce by preparing students to consider careers in meat production, processing, and food safety.

Program Phases

The professional development experience was structured into multiple phases, utilizing Kolb's experiential learning cycle (Kolb, 1984). These phases included program tours, workshops and lectures, practical applications, and collaborative reflections. This program lasted three days and took place during the summer. It was titled Gate to Plate.

On the first day of the program, participants engaged in farm tours, including visits to a University of [STATE] farm and the local stockyards. These tours provided a foundational understanding of cow-calf operations, meat harvesting, and the overall farm-to-table process. These tours offered participants firsthand exposure to cattle operations and the initial stages of meat harvesting. Participants were able to engage with animal agriculture, including raising livestock, transporting animals, and selecting and purchasing animals for consumption. These tours allowed participants to contextualize their theoretical knowledge and gain insights into the challenges and opportunities within the meat industry.

Workshops and lectures were led by experts from the industry, covering harvest practices, meat evaluation, and food safety techniques. Additionally, presentations from the High School BBQ Association and the [STATE] Beef Council provided resources for creatively integrating meat science into agricultural education programs. Educators learned how to leverage extracurricular programs and competitions, such as BBQ clubs and meat judging teams, to spark student interest in meat science. These workshops were dual-purpose in expanding participants' technical knowledge as well as inspiring them to create engaging, practical learning opportunities for their students.

The hands-on component of the program was one of the most impactful for participants. Educators took part in culinary challenges designed to increase the participants' meat handling skills as well as simulate activities they may implement in their own curricula. The "Build-a-Burger" culinary competition encouraged educators to experiment with different cuts of meat

and burger-building techniques, while the "BBQ Rub Ribeye Challenge" introduced participants to the complexity of food rubs and advanced cooking methods. These activities allowed participants to apply the principles they learned about meat quality, grading, and food safety in a hands-on and interactive way.

Throughout the program, participants engaged in reflective sessions to discuss what they had learned and explore ways to integrate these concepts into their teaching. These debriefing sessions were crucial for solidifying participants' understanding of the material and ensuring that they left the program with clear strategies for implementation. Additionally, participants were able to engage in informal interviews with industry professionals to deepen their understanding and practical application of the content. This collaborative approach fostered a supportive learning environment where participants could exchange ideas and develop creative solutions for incorporating meat science into their lesson plans. These reflections were crucial to the experiential learning model of the program.

Results to Date

The professional development increased educators' confidence and ability to teach meat science topics in their classrooms. Educators reported a higher level of preparedness to incorporate hands-on meat processing and safety lessons into their curricula. Moreover, many participants expressed plans to develop curricula based on the experiences they had during the program. While it is too early to assess the impact on student interest in meat science careers, participants will be contacted at a later date to evaluate whether these lessons have influenced students to pursue careers in the meat industry.

Advice for Others

For educators and institutions seeking to develop similar programs, a focus on experiential learning is essential. Engaging educators in practical, hands-on activities not only reinforces learning but also makes the material more accessible and applicable in the classroom. Facilitators should also establish partnerships with local farms and industry experts to offer relevant and enriching experiences.

Costs/Resources

The program was funded through a state education grant, allowing for the coverage of all major expenses, including transportation to program sites, expert speaker fees, and the materials used in workshops and culinary challenges. Much of the program was held in the University of [STATE]'s meat laboratory and campus classrooms, eliminating any costs associated with renting space. The grant also supported the purchase of equipment and food safety tools, ensuring that participants had access to high-quality resources for hands-on learning. Leveraging partnerships with departments within the college of agriculture and meat industry experts helped further reduce costs by providing support in expertise and facilities. Participants only cost was $100, to cover housing in the dorms at the University of [STATE].

References

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