Developing an Engaging Produce Safety Add-On Training for Soilless Growing Operations

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Problem Statement / Issue Definition:

The overarching goal of this project is to develop specialized curriculum and an outreach program that will prepare small and midsized hydroponic and aquaponic growers to meet food safety standards.

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Approach / Methods:

1. Conduct a team capacity-building to educate educators and develop a comprehensive needs assessment survey.

2. Develop food safety curricula for hydroponic and aquaponic growers.

3. Conduct Train-the-Trainer workshops for educators and deliver Grower Training for hydroponic and aquaponic growers.

4. Develop an evaluation tool to assess knowledge gain and program impact.

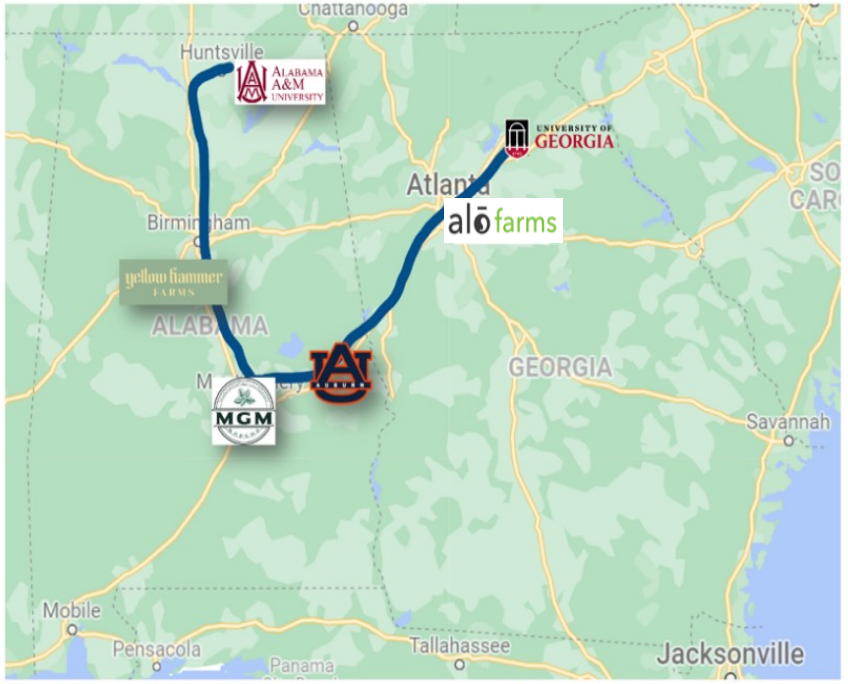

Figure 2. Roadmap for capacity building on-site tours with students, agents, and project PD and Co-PDs.

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Results / Outcomes:

Team Capacity Building Tours

4 visits: - Graduate Students and Extension Agents

- 1 vertical farm warehouse
- 2 vertical farm containers
- 1 greenhouse

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Results / Outcomes:

Needs Assessment Survey

- 71 comprehensive questions
- Questions regarding food safety knowledge, operation type, water management, cleaning and sanitation practices, workers health, training, etc.
- Nationally distributed (56 respondents)

Produce Safety for Indoor Agriculture

Alabama Extension • Alabama A&M University • University of Georgia

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Dear Indoor Produce Grower,

Please share the following survey with indoor produce growers across your network!

The produce safety teams from Auburn University, Alabama A&M University, and the University of Georgia would like to invite you to participate in this survey to collect information about knowledge gaps in food safety practices among indoor produce growers.

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Results / Outcomes:

Curriculum and educational materials

- Create Curriculum Grower Materials (4-hr specialized training)
- Develop educational materials (factsheets, extension publications, educational videos)
- Develop facilitator materials – include on the Farm Innovation Project

Figure 3. Glo-Germ UV light hands-on activity.

FARMING

extension

Produce Safety for Greenhouse Vegetable Production

► Foodborne illnesses affect nearly 48 million people on a yearly basis. Food safety is a primary concern not only for consumers but for growers as well.

Lettuce and other leafy greens are notorious for foodborne illness outbreaks since there are few methods for eliminating pathogens from raw produce prior to consumption.

By far, the most common type of produce grown in greenhouses and other controlled environment facilities in the United States is leafy greens. Cucumbers, tomatoes, peppers, and strawberries are other popular greenhouse crops, and like leafy greens, are primarily consumed raw. Because there are few methods to remove pathogens from raw produce, or a kill-step, pathogens present from seed to spoon have the potential to cause illness. Preventing pathogen contamination is essential to providing safe-to-eat produce to consumers.

In January 2016, the Food and Drug Administration released the final rule on Produce Safety, part of the Food Safety Modernization Act (FSMA), first signed into law in 2011. The Produce Safety Rule (PSR) is a mandatory federal standard to ensure that produce is free from human pathogens. The PSR outlines procedures and practices that facilitate the production of safe produce, addressing food safety risks in several different areas from producer to consumer. Coverage under the PSR depends on the commodity, not production type. For more information about what is considered covered produce, visit: https://ncfreshproducesafety.ces.ncsu.edu/defining-farm-and-covered-produce/. Additionally, exemptions from the PSR may be granted based on the size of the operation. To determine whether your produce falls under the PSR, the Food and Drug Administration has developed a decision tree: https://www.fda.gov/media/94332/download.

Separate from the federally mandated PSR, Good Agricultural Practices (GAP) Certification is a third-party audit program for growers, which is aligned with the FDA PSR. While GAP certification ensures that growers are following the PSR, it does not replace the inspection conducted by the FDA for FSMA compliance. Additionally, the FSMA-PSR outlines the minimum requirements for compliance, whereas GAP certification has further requirements beyond those outlined in the PSR. While stricter, GAP certification can open additional market options for growers. To learn more GAP certification, go to https://instituteforfoodsafety.cornell.edu/resources/nys-grown-certified/good-agricultural-practices-gaps/.

Potential Points of Contamination

Contamination can be introduced to produce from several different sources at any point in the production timeline. Thus, it is important to be aware of potential contamination sources at your facility so growers can take preventive measures to minimize the risks.

ANR-2951

FOOD SAFETY RESOURCE CLEARINGHOUSE

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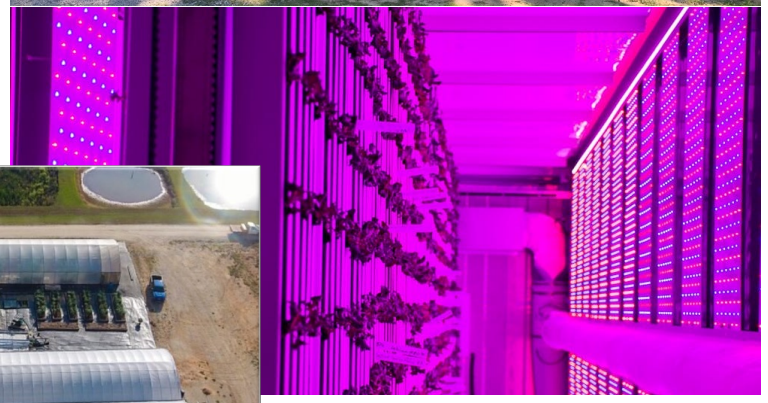
Results / Outcomes:

Training and Program Evaluation

- Conduct TTT with students and educators
- Deliver growers training outreach events (virtual, in-person, and hybrid)
- Evaluation tool to assess knowledge gain and program impact

Aquaponic Research Center



2 vertical farm containers