Impacts of GAPs and post-harvest handling practices certificate training on producers' on-farm food safety behaviors and perceptions of customer assurance

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Impacts of GAPs and post-harvest handling practices certificate training on producers' on-farm food safety behaviors and perceptions of customer assurance

Abstract
Food producers received training in on-farm food safety and proper agricultural practices. The intended result was to alleviate consumer concerns about food safety and assure wholesale buyers of food purity.

Keywords
Value Added Agriculture, Hotel Restaurant and Institution Management, Business management distribution and marketing, Farm to institution

Disciplines
Business Administration, Management, and Operations | Food and Beverage Management | Marketing

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Impact of GAPs and post-harvest handling practices certificate trainings on producers’ on-farm food safety behaviors and perceptions of customers’ assurance

Q Does food safety training for fruit and vegetable growers affect consumer and retail foodservice buyers’ purchasing decisions?

A Findings from the project indicated the growing need for food safety checklists, verification of safety protocols implemented, and third-party audit information. Results also suggest that requirements by wholesale buyers will continue to drive the need for food safety and auditing information in the marketplace. Despite national media attention about fresh produce safety, little concern was displayed among Iowa farmers’ market shoppers.

Background
This project sought to determine whether evidence of producer training in on-farm food safety and good agricultural practices (GAPs) resulted in buyers receiving food safety assurances for their products from local growers. Fruit and vegetable producers were surveyed to determine their concerns about food safety and interest in training to lower their risk and improve market access. A multidisciplinary team of faculty and staff experts in food safety and production from Iowa State University units was formed to address these questions.

The project addressed four objectives:
1. Review fresh produce GAPs/on-farm food safety training and assurance procedures used in other states.
2. Develop and conduct GAPs and Post-harvest Best Practice workshops for farmers who sell directly to consumers and wholesale to retail foodservices, farmers who want to enter these marketing streams, and aspiring fruit and vegetable farmers.
3. Assess whether training results in knowledge, attitude and behavior changes with regards to GAPs/on-farm food safety practices.
4. Identify whether documentation of GAPs/on-farm food safety training results in increased acceptance and sales to consumers and retail foodservices.

Approach and methods
The two-year project had three implementation phases.
- In the first phase, the project team reviewed food safety training and assurance procedures in other states and conducted an environmental scan with buyers in Iowa regarding vendor requirements.
- In the second phase of the project, the team developed and delivered regional Good Agricultural Practices (GAPs) and Food Safety workshops throughout the state for produce farmers.
• In the third phase, the team administered follow-up assessments with workshop participants and interviewed their customers (consumers and buyers from retail foodservices).

**Results and discussion**

Eight workshops were designed and conducted on “On-farm Food Safety Training and GAPs Implementation.” Training sites were Des Moines, Oelwein, Ames, Griswold, Mason City, Sioux City, Iowa City and Bettendorf, and there were 147 participants. They learned about microbial risks with produce, food-safety regulations for fresh fruits and vegetables, GAPs food safety plans and third-party audits, improving post-harvest handling of fresh produce and how to assess their farm for food safety risks.

Farmer participants were surveyed before the training sessions, immediately post-training, and six months after the workshops to assess learning and any changes made or planned in behavior. Findings indicated there were improvements in knowledge, attitudes and reported food safety practices on the farms.

Buyers were surveyed about their attitudes toward buying local foods and their food-safety requirements for farmers to follow. Buyers reported that some type of food safety assurance was provided by producers to retail foodservices. Farmers’ markets were surveyed to assess whether or not farmers who had received training displayed their Certificates of Completion and to interview shoppers about their food safety concerns. None of the participants had posted the Certificate at the point of sale, although some indicated they were using it to provide retail buyers with assurance of their knowledge related to food safety. Despite national media attention about fresh produce safety, little concern was displayed among Iowa farmers’ market shoppers.

Behavioral change does not occur with only one exposure to a concept. Vegetable and fruit farmers need continued education about on-farm food safety issues, regulations and protocols. Food safety protocols can be improved on Iowa produce farms though they are not a large concern for individuals who buy directly from growers. Whole-sale buyers have greater concerns about food safety and in the future it is likely they will require more stringent assurances of a food safety plan and/or third party certification on the farms from which they make purchases.

Curriculum and delivery of on-farm food safety principles and protocols for producers need to be further refined to fit the schedules, learning styles and continuing education needs of Iowa vegetable and fruit farmers.

**Conclusions**

Vegetable and fruit farmers need to continue improving their understanding of farm food safety issues and risks and how to minimize the potential for food safety problems in their businesses. Training sessions, workshops and self-guided learning tools to help growers implement practices to minimize food-safety risk are needed. For example, electronically available curricula and tools, including the On-farm Food Safety Project on-line planning tool, released in 2011, (FamilyFarmed.org) should be evaluated for use and applicability for Iowa growers. In addition, growers need to
improve their post-harvest handling practices, both to maintain produce quality and to reduce food safety risk. Formalized practices are needed in the form of on-farm food safety plans, as markets increasingly are requiring documentation of knowledge and implementation of good agricultural practices. Because it is difficult to attract growers to day-long workshops, shorter sessions and/or multi-segment trainings should be offered.

Food buyers indicated an ongoing and likely increasing need for evidence of growers’ adherence to good agricultural practices. Growers first must understand the principles behind GAPs; it is recommended that workshops about implementation of on-farm food safety practices with certificates of completion continue. Collaboration with regional food system working groups and other partners is encouraged. In addition to checklists or certificates of training currently in use, some buyers already have begun to require third-party certified food safety plans and/or GAPs and GHPs (Good Handling Practices) certification. Iowa needs to implement methods of providing coaching for development of food safety plans, and an auditing system compatible with the USDA GAPs and GHPs program.

ISU faculty and staff should partner with staff from the Iowa Department of Agriculture and Land Stewardship (IDALS), the food safety committee that contributed to the Iowa Food and Farm Plan, and others interested in this topic to discuss the recommendations of that committee and weigh those against the findings of this study. Inclusion of practitioners from multiple disciplines is encouraged.

An ongoing task force or working group in the state should continue collaborating to address the needs of both growers and fresh produce buyers related to production practices and market development, including food safety considerations.

**Impact of results**

Results of this project should be considered in implementation of the Iowa Food and Farm Plan. Information about the methods that farmers prefer to receive training and information about food safety issues, regulations and protocols should be particularly useful. Project experience delivering trainings will help inform development of future training sessions and/or modules of shorter duration. Experience also revealed that more professionals in Iowa need to be educated to deliver food-safety training to farmers. With only few additions to their current knowledge base, ISU Extension and Outreach field specialists in food and nutrition and in horticulture are beginning to deliver training in the state using the prepared programs. There is a need for continuing education for these professionals as well. Formation of multi-disciplinary teams was effective. In this project, two investigators represented the food safety area and two provided expertise in production. Project materials have been used throughout the state and are integrated within other grant work at the national level. Web postings of all project materials have been positively received.

Findings from the project indicated the growing need for food safety checklists, verification of safety protocols implemented, and third-party audit information. Results also suggest that requirements by wholesale buyers will continue to drive the need for food safety and auditing information in the marketplace.
Education and outreach

A website was developed at www.iastatelocalfoods.org. Three ISU Extension and Outreach Publications were updated (available at www.iastatelocalfoods.org):

- PM 2046a Checklist for Retail Purchasing of Local Produce
- PM 1974b On Farm Food Safety: Guide to Food Handling
- PM 1974c On-farm Food Safety: Cleaning and Sanitizing Guide

Several presentations were made about the project: Cornell University (June 2011); North Central Regional Engineering Food Safety and Quality (October 2011); International Consortium of Professional Societies, Romania (July 2012) and Slovenia (October 2011); USDA National Integrated Food Safety Initiative, Ohio State University (October 2011) and New Mexico State University (March 2012).

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This project did not leverage any additional grant funds.

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