

Project: Sanitation and Validation of Produce Rinse Water to Enhance Food Safety

Project Leader: Amanda Kinchla

Project Overview

It is estimated that over 437,000 incidences of produce-related foodborne illnesses occur each year in Massachusetts alone. In addition to morbidity and mortality, the estimated cost as a result of the illnesses is \$903 million. Postharvest sanitation, in particular washing/rinsing, is a critical step that has shown to control microbial loads, thereby reducing the risk of contamination from pathogens. While there are several commonly used wash water sanitizers, there remains significant opportunity in identifying and validating best practices for farmers. Over time, sanitizers lose efficacy due to soiled water, chemical dissipation, pH changes, etc. Identifying and validating best practices for water sanitation in postharvest washing is a critical step towards increasing the safety and sales of Massachusetts produce.

Situation & Priorities

This proposal specifically addresses the safety practices of small-scale Massachusetts food producers and processors. A multidisciplinary team with expertise in food safety and local agriculture will evaluate current wash and rinse water sanitization practices of Massachusetts produce farmers. Researchers will collaborate with extension education professionals to create guidelines for best practices and develop effective tools for disseminating information related to rapid-testing methods, eventually resulting in a reduction in instances of produce-related foodborne illness in Massachusetts.

Activity Summary - 2016

- Determine optimal quality controls to monitor the chlorine in rinse water and validate using piloted farm site – post harvest workshop (1)
- Presentation to growers at New England Vegetable & Fruit Conference - Application Research to Address Produce Safety Challenges (1)
- Developed 4 extension videos for promotion of produce safety (4)
- Two of the developed videos are published on Umass Veg Extension Produce Safety website (2)
- Workshop for vegetable growers on rinse water management practices (1)

Total educational contacts

	Adult Contacts
Direct Contacts	1643
Indirect Contacts (Print, Web, etc...)	503

Narrative Summary and Impact

One of my main efforts has been collaborating with small farms in Massachusetts to improve their wash water management practices and their operation's microbial safety. With the new produce rules being drafted through the Food Safety Modernization Act (FSMA), fresh produce will now be regulated. This is of acute concern because based on these rulings; FSMA will now require farms to routinely conduct microbiological tests of their agricultural water. My plan is to identify and validate additional methods that will help to reduce microbial safety risks associated with agricultural water. This will address a significant concern of local farmers and small farms in northeastern states.

Our work over the past year has included integrated research and extension programming with a strong focus on postharvest food safety best management practices. This work has resulted in 7 technical presentations, 4 workshops and 3 accepted publications. In addition, the regional need to address small farm food safety challenges has fostered a stronger working relationship with the neighboring states promoting additional collaborations within the New England region. Specifically, the Kinchla Research group has actively participated in a NEED/NERA meeting program that has resulted in a working group to address postharvest handling issues. Through this collaboration, UMass extension has been able to host workshops with outside partners, submit multiple grants with new partners and address a wider scope of critical issues for our stakeholders.

Students have significantly been involved in a variety of activities within the UMass Food Safety extension programming. The Kinchla group advised 4 undergraduates and 2 Masters research students with a specific focus on food safety. In addition to contributing to the research outputs that have been published, many of the students have been directly involved in the Extension workshops as well.

Collaborating Organizations

- **Massachusetts Department of Agriculture**
- **Red Fire Farm**
- **New England Vegetable Growers Association**
- **New England Fruit and Berry Growers Association**

