



## Food Safety on the Farm: Good Agricultural Practices and Good Handling Practices – Traceback<sup>1</sup>

---

Alexandra Chang, Alina Balaguero, Renée Goodrich-Schneider, and Keith R. Schneider<sup>2</sup>

*As part of the Food Safety on the Farm series, a collection that reviews the generally recognized principles of GAPs as they relate to produce, primarily at the farm level and with particular focus on fresh Florida crops and practices, this publication focuses on GAPs and GHPs relating specifically to traceback. The publications in this series can be found online at the EDIS website at [http://edis.ifas.ufl.edu/topic\\_series\\_food\\_safety\\_on\\_the\\_farm](http://edis.ifas.ufl.edu/topic_series_food_safety_on_the_farm).*

### Introduction

Good agricultural practices (GAPs) and good handling practices (GHPs) encompass the general procedures that growers, packers, and processors of fresh fruits and vegetables should follow to ensure the safety of their product. GAPs usually deal with preharvest practices (i.e., in the field), while GHPs cover postharvest practices, including packing and shipping. This fact sheet covers GAPs and GHPs relating to traceback. Other Florida Cooperative Extension factsheets in this series focus on specific aspects of the GAPs program and how they relate to Florida crops and practices.

Traceback is the ability to track food items, including fresh produce, back to their source (i.e., where they were grown or packed). Traceback cannot prevent foodborne disease but it can serve as a complement of GAPs and GHPs, which are intended to minimize liability and prevent food safety problems such as physical, chemical, or biological contamination. If an outbreak were to occur, traceback would help identify and eliminate the source of microbial hazards (FDA, 1998). The Bioterrorism Act of 2002 (FDA, 2002) and the Florida Tomato Good Agricultural Practices (T-GAPs) Program (FDACS, 2007) specifically require traceback practices as part of their regulatory requirements.

### Overview of the traceback process

When public health officials suspect a foodborne disease outbreak, they begin epidemiological studies to determine common foods consumed during the period of infection for the pathogen. If the studies identify a certain food product and rule out other causes such as cross-contamination or ill workers, officials obtain the following information about the food from the establishment where the product was

- 
1. This document is FSHN10-04, one of a series of the Food Science and Human Nutrition Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date June 2010. Visit the EDIS website at <http://edis.ifas.ufl.edu>.
  2. Alexandra Chang, graduate student; Alina Balaguero, student; R.M. Goodrich-Schneider, associate professor; K.R. Schneider, associate professor; all of the Food Science and Human Nutrition Department; Institute of Food and Agricultural Sciences; University of Florida; Gainesville 32611.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. U.S. Department of Agriculture, Cooperative Extension Service, University of Florida, IFAS, Florida A. & M. University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Millie Ferrer-Chancy, Interim Dean

sold or prepared. This information about the suspect food product includes the following (FDA, 1998):

- Product types
- Packaging
- Labeling
- Lot numbers
- Date the product was purchased or prepared
- Date received
- Date of stock rotation
- Inventory
- Handling and shipping procedures

Officials collect records about suppliers and shipments of the food to the distribution or retail center. Lot numbers or a shipment delivery timeline is used to identify suspect shipments. Analyses are repeated at each level of distribution until the source of the food product is identified (FDA, 1998).

### **Challenges facing the produce industry**

It can be difficult to find the source of an outbreak when shipping records are incomplete. In these cases, investigators require more time and resources to rely on other records and interviews with people whose memories may be imperfect (FDA, 1998).

Fresh produce also has a relatively short shelf life and is often gone by the time an outbreak is reported. Industry practices, such as recycling shipping crates and co-mingling produce during distribution or at retail, make direct identification of a source of a product extremely difficult. Even if a facility or field is identified, the source of contamination may not be present when investigators arrive on scene. This high degree of uncertainty can cause false associations that negatively affect industries that were implicated, but later exonerated (FDA, 1998).

### **Advantages of an effective traceback system**

Effective traceback protocols:

- Identify a specific region, packing facility, or even a field, rather than an entire commodity group as the source of an outbreak, thus lessening the economic burden on industry operators not responsible for the problem.
- Help limit the population at risk in an outbreak through the speed and accuracy of tracing implicated food products.
- Minimize expenditure of valuable public health resources and reduce consumer anxiety.
- Help public health officials determine potential causes of contamination, thus providing information for growers and shippers for minimizing microbial hazards (FDA, 1998).

### **Instituting effective traceback systems**

Larger operations, which tend to have more control over the growing/packing/ distribution chain, will be able to implement traceback systems more easily. However, industry associations, growers, and operators are encouraged to implement traceback systems where feasible (FDA, 1998).

Operators should develop traceback procedures that document the source of a product, and a mechanism for marking product for effective tracking throughout growing, packing, and distribution. Documentation should include (FDA, 1998):

- Date of harvest
- Farm identification
- Who handled the produce from grower to receiver

Growers, packers, and shippers should work cooperatively with their partners in transportation, distribution, and retail to allow produce identification markings to follow the product all the way to the consumer. Bar codes, stamps, stickers, and tags have

been suggested for traceback to the grower/packer level (FDA, 1998).

## References

1. United States Food and Drug Administration (FDA). 1998. Guide to minimize microbial food safety hazards for fresh fruits and vegetables. Washington, DC: U.S. Department of Health and Human Services, Food and Drug Administration, (accessed April 8, 2010). Available from <http://www.fda.gov/downloads/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/ProduceandPlanProducts/UCM169112.pdf>.
2. United States Food and Drug Administration (FDA). 2002. Public Health Security and Bioterrorism Preparedness and Response Act of 2002. Washington, DC, 2002 (accessed April 8, 2010). Available from <http://www.fda.gov/RegulatoryInformation/Legislation/ucm148797.htm>.
3. Florida Department of Agriculture and Consumer Services, Division of Food Safety. Tomato Best Practices Manual. Tallahassee, FL: FDACS, 2007 Nov. (accessed April 8, 2010). Available from <http://www.doacs.state.fl.us/fs/TomatoBestPractices.pdf>.