

Food Safety on the Farm: Good Agricultural Practices and Good Handling Practices – Field Sanitation¹

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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 field sanitation. 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.

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 factsheet covers harvest practices associated with sanitation in the field. There are seven other Florida Cooperative Extension factsheets in the 'Food Safety on the Farm' series focus on specific aspects of the GAPs program and how they relate to Florida crops and practices.

Microbial Hazards

Fresh produce can become contaminated with pathogenic microorganisms any time before, during, and after harvest. Sources of microbial hazards in the field can include soil, fertilizers, water, workers, and equipment. Improper

management and cleaning of field equipment and unsanitary harvesting practices are examples of poor field sanitation that can increase the risk of contaminating fresh produce.

How to Control Potential Hazards

In response and recognition of growing food safety issues, the Food Safety Modernization Act was passed by Congress and signed by the President in January 2011. The new law requires companies to implement a food safety program that significantly minimizes potential hazards and risk of foodborne illness. Taking immediate steps to implement field sanitation GAPs will benefit companies and overall produce safety.

Good agricultural practices are critical in ensuring the safety and quality of fresh produce. Title 21 of the Code of Federal Regulations, part 110, section 20 provides GAPs for facilities, equipment and grounds of food plants. Included are requirements for proper storage of equipment and pest control and can be applied towards controlling hazards in produce fields (1). The U.S. Food and Drug Administration identified the following GAPs that should be considered during harvesting and equipment maintenance (2).

General Harvest Considerations

- **Clean and disinfect storage facilities used for harvest containers prior to use.**

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- **Inspect facilities for evidence of pests such as rodents, birds, and insects.**
- **Clean and sanitize reusable containers before using them to transport fresh produce.**
- **Discard containers used to store produce if they are damaged or cannot be thoroughly cleaned.**
- **Take care not to contaminate fresh produce that is washed, cooled, or packaged in the field**—contact with any source of pathogens, such as manure or biosolids, contaminated water, workers with poor hygiene, and unclean containers and boxes can contaminate fresh produce in the washing, cooling, or packaging process.
- **Remove as much dirt and mud as practicable from the produce before it leaves the field**—in times where removing mud in the field is not practical, mud should be removed at the packing facility before sorting, grading, and packing.

Equipment Maintenance

Field equipment such as harvesting machinery, knives, containers, tables, baskets, packaging materials, brushes, buckets, etc. can be a source of pathogens. Regularly cleaning and maintaining equipment can help prevent contamination of fresh produce. The following GAPs should be considered:

- **Use harvesting and packing equipment appropriately and keep them clean**—equipment used to haul garbage or manure should be cleaned and sanitized before coming in contact with or hauling fresh produce.
- **Keep harvest containers clean to prevent cross-contamination of fresh produce**—if containers are used repeatedly during a harvest, they should be cleaned after each load is delivered, prior to each reuse. Containers stored outside should be cleaned before use.
- **Assign responsibility for maintenance to the person in charge of managing equipment**—the person in charge must know what and how equipment is being used, ensure equipment is functioning properly, and make sure equipment is cleaned and sanitized regularly.

References

(1) Code of Federal Regulations. 2010. Current good manufacturing practice in manufacturing, packing, or holding human food: Plant and grounds. Title 21, Part 110.20.

Washington, D.C.: U.S. Food and Drug Administration, Office of the Federal Register.

(2) Food and Drug Administration. 1998. Guide to minimize microbial food safety hazards for fresh fruits and vegetables. Washington, D.C.: U.S. Department of Health and Human Services, FDA. Available at <http://www.fda.gov/downloads/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/ProduceandPlanProducts/UCM169112.pdf>. Accessed Mar 13, 2011.