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Safety First Producer Specific Focus

An introduction to Good Agricultural Practices
(GAPs) and writing your food safety plan

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Agenda

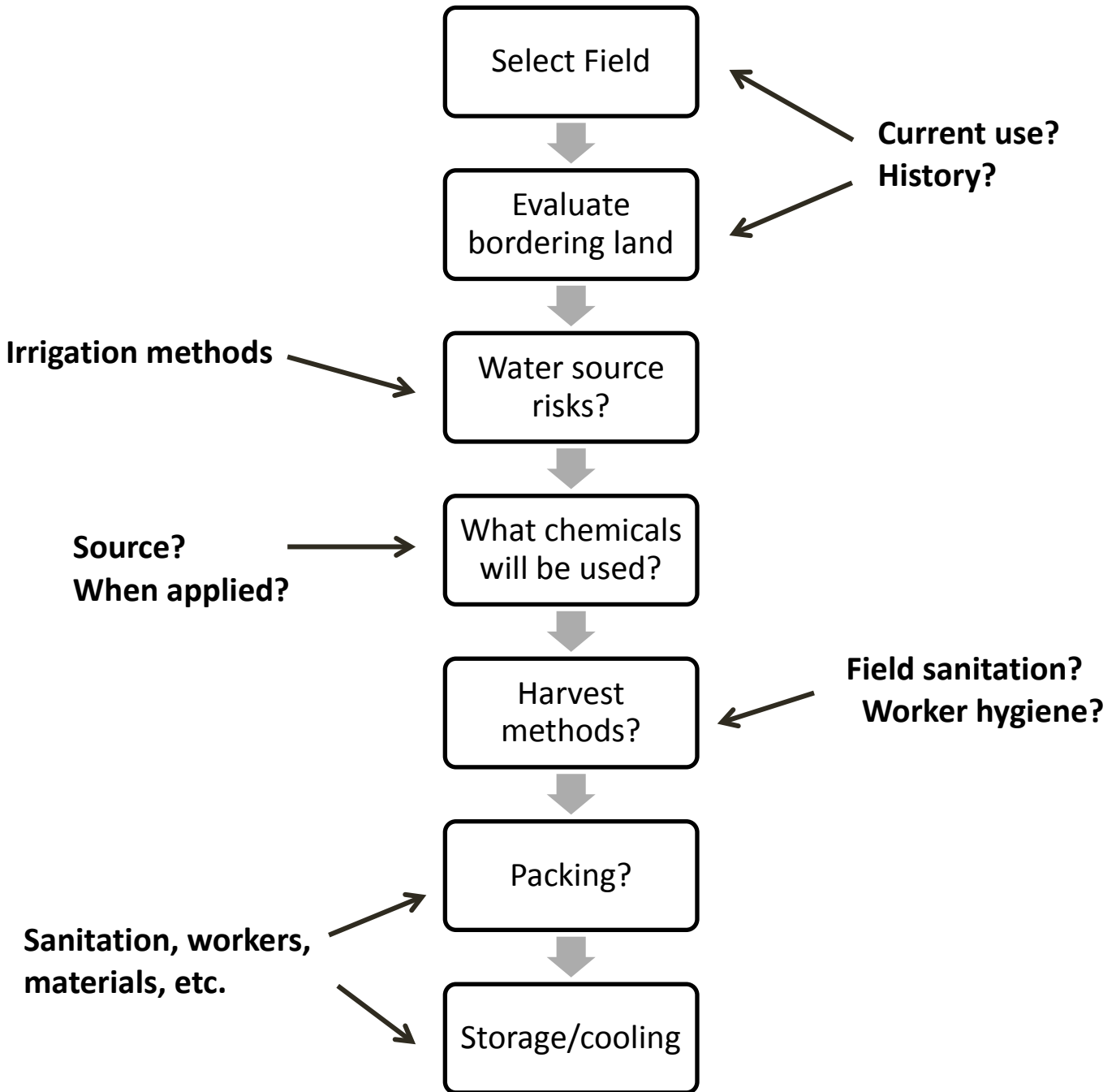
- I. Introduction**
 - Where to start
 - History of Food Safety
- II. Updates on the Food Safety Modernization Act (FSMA) and Produce Safety Regulations**
 - What is FSMA and how will it affect ME?
 - Tester Amendment
 - Produce Safety Alliance
- III. Writing Your Food Safety Plan**
 - Taking Responsibility
 - Conducting Risk Assessments
 - Farm Map Activity
 - Developing an SOP
- IV. Implementing Your Food Safety Plan**
- V. Questions**

Developing a Food Safety Plan

1. Map out your operation
2. Identify your risk
3. Develop management processes (SOPs) for identified risks
4. Develop a record / log sheet

General Considerations for GAPs Risk Assessments

- Water
- Soil amendments (manure, compost, biosolids)
- Worker health and hygiene
- Sanitary facilities
- Field sanitation
- Packing facility sanitation
- Transportation
- Traceback



Example Standard Operating Procedure (SOP)

Example—How to Clean Harvest Tools and Containers

Who: Cleaning Crew, Harvest Crew, Farm Manager, Quality Assurance Supervisor

What: Cleaning of tools used in field harvest

Where: Tool shed sink

When: End of day or production period

Policy: Harvest tools and containers must be cleaned and sanitized after each workday.

- 1.) Wet surfaces with clean water and remove any large debris, soil, or mud. Potable water must be used if the tools and containers will come in direct contact with produce.
 - 2.) Apply detergent
 - 3.) Scrub with provided brushes or clean towels.
 - 4.) Rinse thoroughly with potable water.
 - 5.) Apply sanitizer.
 - 6.) Storage containers and tools in a covered and clean area, away from any sources of contamination (for example, bird droppings or manure pile).
 - 7.) Store all tools labeled for field use in the appropriate location.
 - 8.) Discard any tools or containers that are not in good condition.
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EXAMPLE: Harvest Tool and Container Cleaning Log

Date	What was cleaned?	Cleaned	Disinfected	Comments/Actions taken	Initials
9/10/11	Trowels, greens clippers	X	X	Clippers will need sharpening soon	AP
9/16/11	Green harvest bins	X		All green harvest bins pressure washed; 5 broken bins discarded.	ms

Reviewed by: _____ Date: _____ Notes: _____

Glossary of Terms

A

Aerobic

Able to live, grow or exist only where oxygen is available. This document refers to aerobic bacteria.

Anaerobic

Able to live, grow, or exist in the absence of oxygen. This document refers to anaerobic bacteria.

B

Barriers

Materials that block or are intended to block passage of pathogens or carriers of pathogens. This includes but is not limited to physical barriers such as filter strips, berms, etc.

C

Chlorine

The chemical element Cl. Chlorine compounds are commonly used in disinfectants and sanitizers.

Cleaning

The physical removal of soil and residues from surfaces. For harvest tools this usually involves washing with soap and water and then rinsing with clean water. Large farm equipment such as tractors can be cleaned with a power washer.

Contaminant

Any physical, chemical or biological material introduced from outside that is not intended to be there.

Compost

The product of a specific, managed process in which organic materials are digested aerobically or anaerobically by microorganisms such as bacteria. When properly managed, the aerobic composting process generates high temperatures (130° to 160°F) that kill pathogenic organisms.

CFU (Colony Forming Unit)

A cell or cluster of cells capable of multiplying to form a colony of cells. This is a common term used in expressing the concentration of microorganisms and assumes that each colony originates from an individual cell.

Cross contamination

Contaminating one food item with microbial pathogens from another food item, water or some other source. The most common type of cross contamination occurs when fruits and vegetables that are eaten raw become contaminated with bacteria such as Salmonella or E.coli from animals or manure. Other sources of cross contamination may include other harmful pathogens

transferred to produce surfaces through wash water, packing lines, worker hands, soiled bins, or dirty trucks.

D

Disinfection

Treatment to kill disease-causing microorganisms. Usually the treatment is stronger than that used to sanitize surfaces and is done in situations where water is being treated to make it safe to drink (potable) or to reduce disease causing organisms in wash water.

E

Enteric pathogens

Disease-causing microorganisms that originate in the intestines of humans or animals.

F

Farm worker

Any laborer, paid or unpaid, on the farm producing or handling produce. This includes growers, farm managers, family members, migrant labor, summer help, farm visitors, and packing shed employees.

Fecal coliform bacteria

Microorganisms associated with the intestines of warm-blooded animals. Water tests for this group of bacteria are commonly used to indicate the presence of fecal material and the potential presence of organisms capable of causing disease in humans.

Field packing

A process of packing produce into shipping containers as it is harvested in the field.

Foodborne pathogen

A microorganism (bacteria, virus or parasite) that is transmitted by food and causes people to become sick. Harmful bacteria that have caused foodborne illnesses associated with raw fruits and vegetables include *Bacillus cereus*, *Campylobacter*, toxin-forming species of *Escherichia coli*, such as *E. coli* 0157:H7, and various species of *Salmonella*. A harmful virus that infected workers can spread to raw produce is the Hepatitis A virus. Harmful parasites that can come from intestinal tracts of animals include *Cryptosporidium parvum*, *Cyclospora* and *Giardia lamblia*.

G

Good Agricultural Practices (GAPs)

Any agricultural management practice or operational procedure that reduces microbial risks or prevents contamination of fruits and vegetables on the farm or in the packinghouse.

Good Manufacturing Practices (GMP)

Standards published in the Code of Federal Regulations (Title 21) and used by the Food and Drug Administration to ensure the quality of marketed products and that products are produced under sanitary conditions.

Ground water

Water below the land surface in the saturated zone.

H**HACCP (Hazard Analysis Critical Control Point system)**

A multi-faceted system comprised of a hazard analysis that identifies the dangers that exist in storing, preparing and selling foods and the establishment of critical control points which are steps or procedures where control can be applied and food safety hazards can be prevented, eliminated or reduced to acceptable levels.

Hygiene

Personal cleanliness practices that promote health and reduce the potential for workers to spread foodborne illness.

M**Manure**

Animal fecal material. May contain feces, urine, bedding material and water when spread on cropland.

Manure runoff

Rainwater, leachate, or other liquid containing manure that drains over land and leaves the land surface and enters unintended areas, such as streams or packing sheds.

Manure tea

A liquid made from steeping manure in water. Manure is placed in a bag such as burlap and placed into a container of water where it is allowed to dissolve for a period of time, after which it is sprayed on crop foliage or to the soil.

Microbial

Pertaining to microorganisms.

Microorganisms

Bacteria, molds, viruses and other organisms so small that they can not be seen without the aid of a microscope. Another word for microorganism is microbe. In the case of foods, some microorganisms are beneficial and create desirable food products, while some cause foods to spoil. Some are harmful to humans and can cause sickness and even death.

O**Outbreak**

The occurrence of two or more cases of similar illness resulting from the ingestion of a common food.

P**Packing Shed Facility**

A facility where fruits and vegetables are stored, processed and packed for distribution.

Parasite

An organism that lives on or in and at the expense of living plants or animals. Some diseases of

humans and animals are caused by parasites ordinarily classified as protozoan, helminthic and arthropod species.

Potable water

Refers to water that is safe for humans to drink.

Produce Crop

Fruits and vegetables produced for human consumption and often consumed raw.

R

Recall

A voluntary or mandatory action taken by growers, packers, and other produce distributors to remove potentially contaminated and therefore injurious produce from the marketplace and consumer outlets.

Risk

The likelihood of injury, damage, or loss which takes into account the magnitude of consequences resulting from exposure to a human health hazard.

Run-off

Rainwater, leachate, or other liquid that drains over land and leaves the land surface and enters unintended areas, such as streams or packing sheds.

S

Standard Operating Procedures (SOPs)

All procedures a farm or business conducts daily to prevent direct contamination or adulteration of product(s). SOPs shall describe the activity and how to properly complete the task, as well as specify the frequency with which each procedure is conducted and identify the employee(s) responsible for the implementation and maintenance of the SOP.

Sanitize

The treatment of a surface that has been previously washed and rinsed to reduce or eliminate any remaining illness-causing organisms. Various chemical compounds or sometimes very hot water is used in routine situations to sanitize surfaces. A surface must be cleaned before it can be sanitized because soap and soil inactivate sanitizing solutions.

Surface water

Water sources that are exposed to the environment and located on the surface of land. These sources include lakes, streams, ditches, and ponds. They also include spring fed bodies of water.

T

Traceback

The ability to trace a food product to its origin. In the case of fruits and vegetables, this includes back to the field of origin, and all of the subsequent handling and storage conditions of that product. Traceback is commonly used by health officials to investigate and determine the origin of produce that caused or was associated with foodborne illness outbreaks.

V

Verification of practices

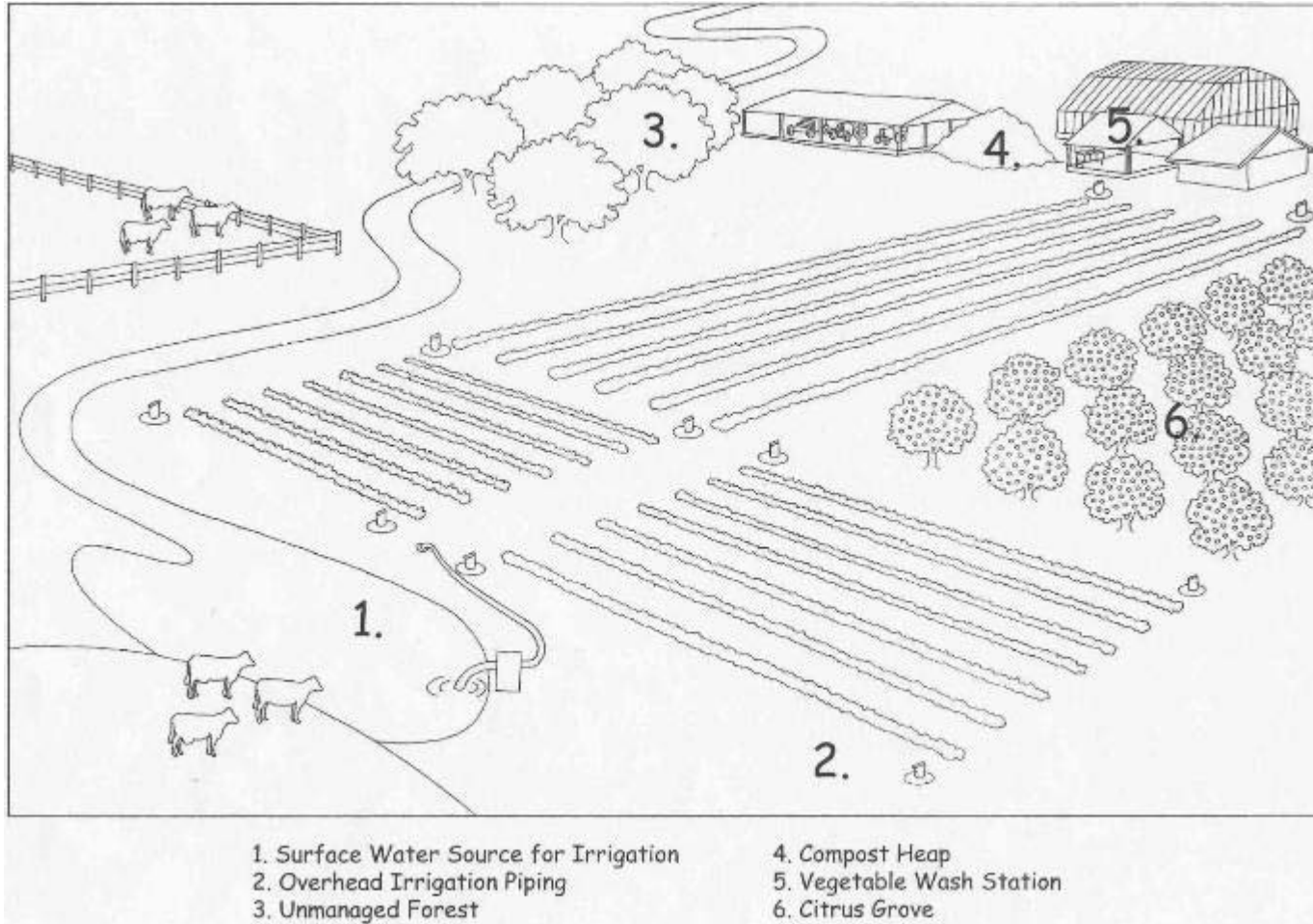
Physically verifying that the planned practices are being effectively implemented. Verification of practices should include documentation of when the practice was completed and verified (date) and who verified the practices (name of individual). These records should be kept on the farm and should be made available to inspectors and third party auditors when requested.

W

Worker

Any laborer, paid or unpaid, on the farm producing or handling produce. This includes growers, farm managers, family members, migrant labor, summer help, farm visitors, and packing shed employees.

Farm Map Risk Assessment Activity



University of Florida IFAS Extension
Brian Lapinski, Amy Simonne and M.E. Swisher

Farm Map Activity

Look over the farm map provided to you. Each area on the farm is labeled with a number. Write down the food safety risks that might be associated with each area on the farm.

1. Surface Water Source for Irrigation
2. Overhead irrigation piping
3. Unmanaged forest
4. Compost Heap
5. Covered washbasin
6. Orchard

Activity #2: Develop a Standard Operating Procedure (SOP)

Title:

Who:

What:

Where:

When:

Policy:

1.)

2.)

3.)

4.)

5.)

Supervisor: _____

Suggested Food Safety Plan Resources

1. National GAPs Program – Cornell University
<http://www.gaps.cornell.edu/index.html>
<http://www.gaps.cornell.edu/farmassessmentws.html> (Link to grower risk assessment)
<http://www.gaps.cornell.edu/rks.html> (Recordkeeping Sheets)
2. Farm Food Safety – How do I write a produce safety plan? – Penn State University Extension
<http://extension.psu.edu/food-safety/farm/how-do-i-write-a-food-safety-plan>
3. Fresh Produce Safety Portal – North Carolina State University
<http://ncsu.edu/enterprises/ncfreshproducesafety/good-agricultural-practices-gaps/audits-plans/food-safety-plans/>
4. Food Safety Plan for You (FSP4U) Template – University of Minnesota
<http://safety.cfans.umn.edu/>
5. Vegetable Crops Online Resource Center – Rutgers University
<http://njveg.rutgers.edu/html/mf-food-safety.html>
6. On Farm Food Safety Project – Familyfarmed.org
<http://onfarmfoodsafety.org>

General GAPs Resources

1. FDA Guidance for Industry: Guide to Minimize Microbial Food Safety Hazards of Fresh-cut Fruits and Vegetables
<http://www.fda.gov/food/guidancecomplianceregulatoryinformation/guidancedocuments/produceandplanproducts/ucm064458.htm>
2. Produce Safety Alliance – FDA, USDA, Cornell University
<http://producesafetyalliance.cornell.edu/psa.html>
3. Colorado State University – Farm to Table Food Safety
<http://farmtotable.colostate.edu/>
4. University of California – Davis
<http://ucanr.org/sites/GAP/>
5. Penn State – On Farm Food Safety
<http://extension.psu.edu/food-safety/farm>

Audit Information

1. USDA Agricultural Marketing Service
<http://www.ams.usda.gov/AMSV1.0/GAPGHPAuditVerificationProgram>
2. United Fresh Produce Association – Harmonized Standards
http://www.unitedfresh.org/newsviews/gap_harmonization

Our Contact Information

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