



Working Committee 2

Common Issues

Date: 05/14/2012

Revision: Final

Introduction

This working committee was tasked with discussing a broad range of challenges and key aspects related to implementing Good Agricultural Practices and developing produce safety plans for the farm.

Core Curriculum/Hazards & Preventive Controls — Common Issues

- 2.1. Worker Health and Hygiene
 - 2.1.1. Enforcing compliance: Negative versus Positive Reinforcement
- 2.2. Toilet and Hand Washing Facilities
- 2.3. Sanitation and Ground Maintenance
- 2.4. Produce Safety Plan
 - 2.4.1. Development
 - 2.4.2. Implementation
- 2.5. Recordkeeping
 - 2.5.1. Requirements
 - 2.5.2. Practical steps for implementation
- 2.6. Traceability & Recall

Working Committee Chairs

Diane Ducharme

NCSU GAPs Program Coordinator, Extension Associate in Horticulture and Food Safety with the N.C. MarketReady Program at the Plants for Human Health Institute, NCSU

Brian Reeves

Owner, Reeves Farms

Meetings Held

Date	Attendance
May 31, 2011	26
August 2, 2011	20
August 23, 2011	13
September 13, 2011	13
October 4, 2011	16
October 25, 2011	16
November 15, 2011	11
January 3, 2012	16
January 31, 2012	12
March 27, 2012	10

Total Meetings: 10

Total committee members¹: 59

¹ See [Appendix I](#) for full list of members

Data Collection

Information from committee members was collected during ten teleconferences held in the months of June 2011 to March 2012. Each meeting held was approximately one hour long where detailed notes were taken and submitted to the committee for review post-meeting. From the discussion topics covered during the teleconferences, a basic outline was created. This outline was then formatted into an on-line survey (also available in print version for those with limited access to computers) using SurveyMonkey (<http://www.surveymonkey.com/>). From the outline, seven questions related to common issues with GAPs were drafted and reviewed with the committee co-chairs and PSA program director for appropriateness and thoroughness. The survey was designed to prioritize major topic areas for inclusion into the PSA curriculum, based on a limited time frame to conduct trainings with growers. The prioritization survey was used as a tool to guide future discussions and to ensure every committee member was able to participate in the decision-making process. Sixteen committee members completed the survey (28% response rate).

The results of the survey are located in Appendix II.

From the results of the survey, the committee co-chairs and PSA facilitators moved forward to identify priority areas for the committee's discussion and final recommendations to the PSA Executive committee. Topics which were prioritized as lower importance will be kept on file in the committee's original meeting note document.

Additionally, a Google site was created for working committee members to collaborate and collect resources to address the challenges identified within this document. The site will be a valuable resource to the PSA team in the future development of curriculum materials and incorporation of effective training materials and resources from other programs across the country and globe.

Priority Areas

2.1. Worker Health and Hygiene

Worker health and hygiene was ranked as the most critical topic from the survey results. The health and hygiene of farm workers directly impacts the safety of produce since handling can contaminate the fresh fruits and vegetables.

- **Worker Training**

Everyone should be trained to use the facilities properly as well as understand farm expectations for proper hygiene and behavior. During training, the following practices must be taught and reinforced on a regular basis. Training materials should reflect the most current science and be updated to ensure that workers are provided the best practices for health and hygiene.

- Hand Washing & Bathroom Use

- All workers practice proper hand washing; including washing their hands before work, before and after meals, eating, and toilet use.
- Proper hand washing technique includes the following steps:
 1. Wet hands with clean water (warm if available)
 2. Apply soap and work up a lather
 3. Rub hands together for at least 20 seconds
 4. Rinse under clean, running water
 5. Dry hands with a single-use towel
- Toilet paper should be disposed of in the appropriate location.

- Recordkeeping

- Records of training frequency, content, and attendance are kept, regardless of high turnover rates of workers, assuring that all workers have received training at least one time each season.

- Cultural Differences

- Language and illustrations on signs and used during trainings must be appropriate for workers and visitors.
- Understanding the training audience is critical to ensuring the message is translated properly and understood by all trainees.

- **Worker Health**

The areas below should be highlighted as critical components of worker health in the curriculum:

- Workers or visitors who are ill or who have symptoms of nausea, vomiting, or diarrhea can transmit harmful microorganisms to fresh produce and should not enter the production areas or handle produce directly.
- Open or infected wounds, blisters, or bleeding cuts must immediately be reported and addressed so that the produce does not become contaminated.
- Workers who have slight illnesses or cuts that cannot be adequately covered, but are healthy enough to work, should be assigned to tasks which do not require contact with the produce (including containers, harvest equipment, etc.).
- Gloves, bandages, and a first aid kit must be provided.

2.1.1. Compliance of Farm Food Safety Policies

- Owners and management must provide consistent messages to their workers and set appropriate examples to follow.
- If food safety is not a high priority of the farm owners and management, likely it will not be a high priority of the workers.
- Positive reinforcement goes a long way when encouraging workers to comply with your food safety plan.
- When other approaches have failed, firms should consider using punitive actions as a consequence for not following company policies to protect the safety of fresh produce. For example, sending a worker home for the day if they are caught not washing their hands after using the restroom. These actions should be outlined during worker training.

2.2. Toilet and Hand Washing Facilities

The easiest and most efficient way to reduce the transmission of pathogens carried by human fecal material is to prevent the fecal material from entering the field. Providing, servicing, and maintaining proper facilities for workers will reduce the potential for produce to become contaminated by workers in the field.

The following resources must be provided to workers:

- Clean toilet and hand washing facilities
- Potable water, soap, paper towels, and toilet paper
- Access to potable drinking water

Challenges:

Providing clean, well-stocked toilet and hand washing facilities do incur expenses and will take a considerable amount of time and effort to manage. Effective implementation of the areas below will reduce risk for the transmission of human pathogens to fresh produce, as well as provide workers with a comfortable, clean working environment.

- **Location of field toilets and hand washing stations:** As per OSHA requirements (29 CFR Part 1928), facilities must be available to agricultural workers within ¼ mile of the work area or as close as they can be, given the farm landscape. Portable toilets are not located in the produce crop field and are physically isolated from production and handling areas. Location of washing facilities may affect compliance; they should be placed in convenient areas where workers will be more likely to use them (e.g. hand washing stations at packinghouse entrance).
- **Ratio of facilities to number of workers:** The number of toilets must be sufficient to accommodate all workers in a timely fashion. OSHA requires 1 facility per 20 workers.
- **Maintenance & Servicing:** Portable toilets are regularly serviced and cleaned in an area physically isolated from production areas; frequency of maintenance is based on number of workers and frequency of use.
- **Stocking supplies:** Toilet facilities are supplied with an adequate stock of hand washing items including soap, water, paper towels, as well as toilet paper.

- **Collection of grey water:** A system must be in place to collect grey water from hand washing facilities in the field, including a plan for where it will be disposed.
- **Emergency spill response plans:** An emergency containment and treatment plan should be in place and workers should receive information on management of spills during their training. An emergency spill response plan may also be required in order to pass a third party audit for food safety.
- **Documentation:** Recordkeeping helps document and facilitate compliance with your food safety plan.
 - **SOPs** for cleaning and maintenance must be written for all aspects of toilet and hand washing facility management, sanitation, and emergency spill response.
 - **Recordkeeping log sheets** will document the implementation of the written SOPs and enforce proper worker hygiene and habits.

2.3. Sanitation and Ground Maintenance

Much of this section of the original outline has been discussed at length in [WC #6's \(Postharvest\) summary report](#). For the purposes of this committee, a bulleted list of topics which should be included in the curriculum is as follows:

- **Chemicals**
 - Proper storage
 - Labeling
 - Food grade lubricants
 - MSDS
- **Packing/Storage Facilities**
 - Separation of working areas and employee areas (bathroom, eating areas)
 - Packing line sanitation
 - Product flow to minimize cross contamination
 - Pest control programs
 - Proper storage of produce (covered, away from walls)
- **General Grounds**
 - Management of animal attractants (trash, cull piles, brush)
 - Proper storage of containers (covered to avoid contamination)

2.4. Produce Safety Plan

Writing a manageable and effective plan must be emphasized to growers during training. There are many resources that currently exist to assist growers in developing their own plan. From in person trainings to web-based tools, resources for growers are available from Universities, extension services, private third party auditing companies, consulting firms, and industry groups. The curriculum should provide adequate resources, links, and references to aid growers in finding the tools they need to complete their plans (e.g. templates, log sheets, guidance).

2.4.1. Development

- Objectives of a plan
 - Clear objectives should be identified before writing the plan.
 - Is this plan being written to pass a third party audit for food safety?

- What are the goals and food safety culture that the farm hopes to create?
- How to make a plan
 1. Assign a responsible person to manage the plan.
 2. Begin by conducting a risk assessment.
 3. List the risks identified in the assessment and the measures you plan to take to minimize those risks.
 4. Train workers based on the content of your plan and tasks which need to be completed.
 5. Keep the plan up-to-date. Edit recordkeeping, SOPs, or production practices of the farm which may change over time.
 6. Keep the plan in a specific location that is easily accessible for those responsible for maintaining or updating it.
- Content

The content of the food safety plan must have the following characteristics:

 - It is practical to implement; items that cannot or will not be implemented should not be included in the plan.
 - Includes a grower assessment of his/her own facility and production practices.
 - Lists the risks identified in the assessment and the measures you plan to take to minimize those risks.
 - Identifies what, who, and how the plan will be implemented.
 - Provides copies of all documentation and recordkeeping necessary to implement the plan.

2.4.2. Implementation

- Documentation
 - Must be uniform and consistent.
 - Recordkeeping tasks can be delegated to the workers responsible for completing the task. This reduces the burden on one person completing all of the recordkeeping necessary for the plan.
 - Must be convenient for workers to complete.
 - Suggestion: Recordkeeping sheets are kept close to where task is performed, e.g. sheets are laminated and taped to wall in packinghouse.
 - Recordkeeping tools are provided, this may include clear paper covers, tape to post sheets, pencil with a string tied to it, or a binder that is in a fixed location.
- Training
 - Group work and peer education should be encouraged.
 - Management must teach food safety practices by example.
 - Hands on activities should be included in worker training for how to complete tasks in the food safety plan, such as monitoring water pH or how to complete SOPs. This includes proper documentation of SOPs (i.e. how to fill out sheets, where to keep them, who needs to sign off).
 - The person responsible for the plan must be knowledgeable and confident enough to stop production if there is a food safety problem.

- Challenges:
 - Computer literacy
 - Initial fear or intimidation when writing a plan: “Greatest fear is a blank sheet of paper” – Ernest Hemingway
 - Cultural differences, including language and common practices, may need to be addressed in the plan. For example, in the plan, it is noted that signage will be provided in a specific language that is spoken by the workers on the farm.
 - Extension/consultants walk a fine line in assisting growers with their plans; growers must conduct a risk assessment and write the plan themselves. Development of a plan must be interactive with the grower.
 - Knowledge transfer from farm owner (if not the person responsible for plan) to food safety plan manager is often difficult. All management must be on board with the education, development, worker training, and implementation in order for the plan to be successful.
 - Food safety plans can easily overwhelm growers who have not experienced this process in the past. Training and guidance to growers developing plans should be easy to understand. Resources must also be readily available to growers, including supporting documentation (such as log sheets) and education for how to write a plan.

- Corrective Action Plans
 - Establish a corrective action plan for those hazards that are reasonably likely to occur on the farm, before they occur. Include corrective actions for hazards that would be anticipated if a control measure is not fully implemented or fails. For example, having a plan to handle a chemical spill from containing the leak to disposing of contaminated product.
 - In establishing the corrective actions in the corrective action plan, and in responding to unforeseen hazards, a three part sequence should be followed:
 1. Describe the root cause for the failure that requires corrective action;
 2. Identify the corrective action to be taken, including appropriate documentation and disposition of affected product;
 3. Detail how the failure can be prevented in the future.

2.5. Recordkeeping

2.5.1. Requirements

- The number of records will vary by farm, practices, SOPs to be implemented, as well as third party audit requirements, if applicable.
- Recordkeeping may also coincide with NOP, pesticide, labor records, and other certifications.
- Consistency and frequency of recordkeeping must be emphasized during training and enforced through implementation of the plan.
- 3rd party audit matrices may vary; therefore growers must be aware of specific recordkeeping requirements that are necessary to pass the audit.

2.5.2. Practical steps for implementation

- Incorporate recordkeeping into work flow.
 - Provide the necessary tools (e.g. pencils, logs, binders, tape) to fill out records at location of task.
- Recordkeeping must be tailored to the farms' specific production practices, labor abilities, and practicality of keeping it up to date.
- Reduce redundancy in recordkeeping systems by streamlining and consolidating records. (e.g. include organic certification recordkeeping as part of your food safety plan)
- Records must be maintained for easy access and reference, especially in the event of a third-party audit or recall situation.

2.6. Traceability & Recall

- Definition: Being able to trace produce one step forward and one step back. The following points, listed from highest to lowest priority from the survey results, should be emphasized as part of a curriculum module on traceability and recall:
 - Field/lot identification
 - Commodity
 - Day it was harvested
 - When it was sold
 - Who it was sold to
 - Who harvested it

Additionally, understanding the value of traceability and recall as well as market acceptability should be mentioned.

- Cost of Traceability & Recall Programs
Cost and complexity of the programs may vary depending on the farm size, commodities grown, number of workers, or types of markets. A variety of options should be included in training and lower cost options should be made available to small growers to help in implementing an effective system.
- Recall Plan
The following should be included, at minimum, in a recall plan:
 - Names of employees involved
 - Key contact information (phone numbers, addresses)
 - Notification of appropriate parties
 - Procedures for implementing
 - Strategies for handling recalled produce
 - How to verify recall effectiveness
- Mock recall
Mock recalls must be conducted to ensure the recall plan is effective. Curriculum training should provide basic information on how this is completed.
- Challenges to traceability and recall programs:
 - Comfort level with technology (i.e. phone, web, traceability methods)
 - Cultural considerations (i.e. bar codes, electronic traceability devices cannot be

used in Amish cultures)

- Grower fear that traceability for small scale growers will not be obtainable or manageable.
- Increasing grower knowledge of importance for traceback and recall systems may be difficult.
- Grower claim that “they would know if someone got sick from their food”
- Some traceability systems may be cost prohibitive. If this is the case, alternate and more simplified systems should be investigated.
- Many other entities within the food chain may not understand this concept. Retailers as well as consumers should be educated on the principles and reasoning behind effective traceability programs.

Recommendations

1. Sufficient educational resources and tools must be provided to growers to supplement their foundation of GAPs knowledge and to enable them to continue the development of their own farm food safety plans at their own pace.
2. Infrastructure to support grower trainings must be present; the curriculum content cannot stand alone and requires involvement from a reliable body of knowledge throughout the industry (i.e. Extension, educators, industry groups, trainers, consultants).
3. There is value in having small farms write a food safety program, regardless of the need for GAPs certification, to better allow the internalization and individualization needed to reduce microbial risks for each farm.
4. The curriculum must recognize the complexities of individual farm operations and provide dynamic tools that can be customized to fit their particular needs.
5. Farm food safety plans must be considered 'living documents'. The content is dynamic and must be evaluated for efficacy and content annually, or as frequently as practices and conditions change on the farm.
6. The first iteration of produce safety and GAPs training is not necessarily the end; the development of a farm food safety plan must be viewed as a continuation of the process.
7. The Produce Safety Alliance must serve as a repository of information where resources are readily updated and available to growers, trainers, regulatory agents, and educators.
8. Management/Trainers need to provide consistent messages to be able to deliver and set appropriate examples for workers that contain a high-level of commitment, specifically in the most critical area of worker health and hygiene.
9. Simplified, common sense, low cost methods need to be incorporated in the traceability and recall portions of a food safety program.
10. Differences in local and state regulations, as well as GAPs certification auditing schemes, create a fractional response to some of the critical components of produce safety. First and foremost, trainers and educators must emphasize risk reduction for produce safety while highlighting best practices for produce safety which also satisfy the farmers' regulatory and audit requirements.
11. Barriers to adoption of the key GAPs principles and practices need to be considered when assisting small farms in implementing risk reduction practices.

Appendix I: Working Committee Members (59)

1. Aller, Marion ; Assoc. of Food & Drug Officials ; FL Dept. of Agriculture & Consumer Services
2. Becker, Anastasia ; IPM Program Manager ; Missouri Dept. of Agriculture
3. Beckman, Edward ; CEO ; California Tomato Farmers
4. Bihn, Elizabeth ; PSA Program Director ; Cornell University
5. Biltonen, Mike A. ; Consultant ; Red Jacket Orchards
6. Boyce, Angie ; Graduate Student ; Cornell University
7. Brown, Reggie ; Association Manager ; Florida Tomato Exchange
8. Butler, Shawn ; Grower/Sales ; Grimes Produce Company
9. Carlson, Cathy ; Food Safety Program Manager ; Community Alliance with Family Farmers
10. Chege, Peter G. ; Extension Specialist ; University of Illinois Extension
11. Danyluk, Michelle ; Assistant Professor ; University of Florida
12. Ducharme, Diane T. ; Educator ; North Carolina State University
13. Giclas, Hank ; Senior Vice President ; Western Growers
14. Gombas, David ; SVP Food Safety and Technology ; United Fresh Produce Association
15. Hadad, Robert G. ; Regional Vegetable Specialist ; Cornell University
16. Haskins, Cynthia ; Consultant ; Illinois Farm Bureau
17. Herbert, Melissa ; Director of Industry Affairs ; Neogen Corporation
18. Hurst, William C. ; Professor/Extension Specialist ; University of Georgia
19. Johnson, Donna ; DLJ Food Consulting ; Owner
20. Kanitz, William ; ScoringAg.com ; President
21. Kiger, Luana E. ; Special Assistant to STC ; USDA NRCS
22. Killinger, Karen Meggen ; Assistant Professor ; Washington State University
23. Kimes, Ken ; Farmer ; Greensward/New Natives, LLC
24. Kline, Wesley L. ; Agricultural Agent ; Rutgers Cooperative Extension
25. Kovacs, Tricia ; Washington State Dept. of Agriculture ; Education/Outreach Specialist
26. Kotapalli, Mythili ; QA/QC Manager ; Gourmet Kitchens, Inc.
27. Kulhanek, Ashley L. ; Food Safety Education Associate ; The Ohio State University
28. Laborde, Luke F. ; Associate Professor ; Penn State University
29. Langdon, Sue J. ; Extension Director ; North Carolina Sweet Potato Commission
30. Lanini, Sharan ; Raw Product Food Safety Mgr. ; Chiquita Brands International/Fresh Express
31. Mayes, Eve ; Asst. to William Hurst ; University of Georgia
32. Maynard, Liz ; Extension Specialist ; Purdue University
33. McCartney, Michael ; Principal/Consultant ; QLM Consulting
34. McGinnis, Yvonne R. ; CEO ; Remembering Mary, LLC
35. Miller, Bill ; Farm Prod. Grdg. Insp. 3 ; NYS Dept. of Agriculture and Markets—Div. of FSI
36. Nelsen, Joel ; President ; California Citrus Mutual
37. Nickerson, Ginger ; GAPs Outreach Coordinator ; UVM Extension
38. Nolte, Kurt D. ; Extension Agent ; University of Arizona
39. Normandin, Vicki ; Ag Consultant ; Self
40. Phelps, Laura ; President ; American Mushroom Institute
41. Pivarnik, Lori ; Educator ; University of Rhode Island
42. Reeves, Brian N. ; Farmer ; Reeves Farms
43. Roberts, Martha Rhodes ; Special Assistant to Dean for Research ; University of Florida

44. Rubbo, Colby ; Food Safety Manager ; Costa Farms, Inc.
45. Runsten, David ; Policy Director ; Community Alliance with Family Farmers
46. Rushing, Jim ; Training and Program Manager ; University of Maryland
47. Salas Gutierrez, Sonia E. ; Science/Technology Manager ; Western Growers Association
48. Schneider, Keith ; Associate Professor ; University of Florida
49. Scott, Vicki ; Director of Quality ; Amigo Farms
50. Sharp, Adam J. ; Public Policy ; Ohio Farm Bureau Federation
51. Simmons, Chip ; Research Assistant Professor ; North Carolina State University
52. Smith, Michelle A. ; Senior Policy Analyst ; USDA
53. Snellman, Erick ; Policy Analyst ; FDA/CFSAN
54. Stearns, Ken ; Food Safety Director ; D'Arrigo Bros.
55. Sullivan, Bradley W. ; Managing Attorney ; Lombardo & Gilles, LLP
56. Swiger, Joshua ; Attorney ; Weinberg, Wheeler, Hudgings, Gunn & Dial, LLC
57. Wall, Gretchen ; PSA Program Coordinator ; Cornell University
58. Zambrana, Ingrid A. ; National Expert-Foods ; USDA/Office of Regulatory Affairs
59. Zomorodi, Brian ; Sr. VP Science and Technology ; Ready Pac Foods, Inc.

APPENDIX II: Results of Prioritization Survey







