



FSLC

**FOOD SAFETY LEADERSHIP COUNCIL
ON-FARM PRODUCE STANDARDS**

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE #</u>
Acronyms and Abbreviations.....	1
Definitions.....	2
Management of GAP Practices.....	4
Growing Field.....	4
Worker Health and Hygiene.....	5
Field Sanitation and Facilities	6
Animal Control.....	6
Fertilizer and Pesticide Usage and Control.....	7
♦Fertilizer Use.....	8
♦Pesticide Use.....	9
Irrigation Water.....	10
♦Well Water.....	11
♦Surface Water Resources (Canals, Ditches, Ponds, Reservoirs).....	11
Harvest Practices.....	12
Microbiological Testing Programs.....	14
Product Transport.....	14
Food Defense.....	14
Appendix 1.....	16
Appendix 2.....	17

ACRONYMS AND ABBREVIATIONS

EPA: Environmental Protection Agency

FDA: Food and Drug Administration

FSLC: Food Safety Leadership Council

GAPs: Good Agricultural Practices

GLPs: Good Laboratory Practices

MPN: Most Probable Number

MSDS: Material Safety Data Sheets

PPM: Parts Per Million

SOPs: Standard Operating Procedures

SSOPs: Sanitation Standard Operating Procedures

DEFINITIONS

Accredited Laboratory	That an analytical laboratory is qualified to analyze food or environmental samples because it has met requirements of a recognized accredited laboratory program.
Agrochemicals	Any substance or mixture of substances used for preventing, destroying, repelling, inhibiting, or controlling pests, bacteria, fungi and weeds.
Biosolids	As defined by the EPA, Biosolids are nutrient-rich organic materials resulting from the treatment of domestic sewage in a treatment facility. When treated and processed, these residuals can be recycled and applied as fertilizer to improve and maintain productive soils and stimulate plant growth.
Colony forming units (CFU)	A laboratory measure of microbial concentration, indicating the quantity of viable micro-organisms collected and counted for a given sample.
Concentrated Animal Feeding Operation (CAFO)	CAFOs are agricultural facilities that house and feed a large number of animals in a confined area for 45 days or more during any 12-month period. Federal regulations require CAFOs to carry a permit and to develop nutrient-management plans designed to keep animal waste from contaminating surface water and groundwater. The number and type(s) of animal(s) the operation houses, and the extent, to which waste from the operation could pollute surface water and groundwater, determine whether EPA considers a feeding operation to be a CAFO.
Cross contamination	Direct or indirect transfer of microorganisms to food, food contact surfaces or water.
<i>E. coli</i>	<i>Escherichia coli</i> is a common bacteria that lives in the lower intestine of humans and warm-blooded animals. <i>E. coli</i> is commonly used to indicate fecal contamination or unsanitary conditions. <i>E. coli</i> strains can be pathogenic while others are not and can be from non-fecal sources.
Flooding	An unintentional temporary event caused by an unusual accumulation of surface water that is likely to contain harmful microorganisms of public health significance.
Hazard	A biological, chemical, or physical agent that is reasonably likely to cause illness or injury in the absence of its control.
Hazard Analysis	Hazard analysis is the process of collecting and evaluating information on hazards associated with the product or process under consideration to decide which are significant and must be addressed in a documented plan.
Integrated Pest Management	Integrated Pest Management is a comprehensive approach to pest management that uses information on the life cycles of pests and their interaction with the environment. This information is used to manage pests economically and with the least possible hazard to people and the environment.

Note: *Italicized items considered higher standards than existing industry practices.*



Copyright ©2007 Food Safety Leadership Council
Version 1.0 September 10, 2007

Lettuce and leafy greens	Examples of lettuce/leafy greens include but are not limited to: romaine lettuce, iceberg lettuce, baby leaf lettuce (i.e., immature lettuce or leafy greens), green and red leaf lettuce, butter lettuce, escarole, endive, spring mix, kale, cabbage, chard, arugula and spinach.
Most Probable Number (MPN)	The Most Probable Number (MPN) method is a statistical, multi-step assay used to estimate the number of organisms present in a given sample.
Pathogen	Pathogens are micro-organisms, such as bacteria, viruses and parasites that are capable of causing disease or illness.
Process authority	An agency, group or individual recognized as having expertise and knowledge in a specific field that is engaged in creating standards, providing guidance and consultation.
<i>Salmonella</i>	A genus of rod-shaped, non-spore forming, gram-negative bacteria that are a common cause of food poisoning. <i>Salmonella</i> is commonly found in animal and environmental sources (water/soil).
<i>Shigella</i>	Shigella are gram negative, nonmotile, non-spore forming rod-shaped bacteria. The illness caused by <i>Shigella</i> is shigellosis. Principally a human disease the organism is frequently found in water polluted with human feces.
Traceability	Traceability is the ability to trace and follow the documented information of a food product or raw material through all stages of the food chain from grower through distribution.

Note: *Italicized items considered higher standards than existing industry practices.*



Copyright ©2007 Food Safety Leadership Council
Version 1.0 September 10, 2007

MANAGEMENT OF GAP PRACTICES

1. The FSLC On-Farm Produce Standards were designed to provide minimum food safety standards for fresh produce. It is the responsibility of the grower/harvester/packer to maintain current information and be in compliance with all local, state and federal laws, rules and regulations.
2. The grower, harvester and/or packer shall have a documented Good Agricultural Practices (GAPs) program that adheres to the FSLC standards to ensure all produce is grown and harvested under safe conditions. The grower shall have a person responsible for the supervision of all Food Safety and Quality Assurance Programs.
3. Management shall conduct and document a hazard analysis of the entire operation (to include pre-plant and pre-harvest) to identify all potential hazards and have implemented process controls to eliminate or minimize the hazards identified in the hazard analysis.
4. The supplier conducts and documents monthly self-inspections to monitor GAPs and food safety compliance utilizing multi-disciplinary teams. A person is assigned responsibility for taking corrective action and for signing off upon completion for any noted deficiencies.
5. Signs supporting GAPs (such as hand washing, chemical hazards, no animals, etc.) are posted where applicable. Signs are multi-lingual or in symbol form and shall be posted in all appropriate locations including, but not limited to, break rooms, restrooms and growing fields.
6. An industry recognized third party GAP audit that audits against the FSLC standards must be conducted on a minimal basis of once per growing season. The audit shall cover all growing areas. Appropriate corrective and preventative actions are to be implemented and documented for all deficiencies noted in the GAP audit.
7. The ever-changing state of knowledge regarding food safety will necessitate revising these On-Farm Standards periodically. Scientific research and regulatory guidance will be used as the basis for these reviews of the standards.

GROWING FIELD

1. If the field has been used for purposes other than growing produce management shall, prior to planting, conduct soil analysis to show results are within limits per EPA, state or local regulations for contaminants.
2. If fields are flooded due to natural causes, the product, excluding tree crops and stone fruit, shall not be harvested for human consumption. In addition, there must be documented testing results prior to replanting to ensure soil meets EPA and all regulatory standards.
3. Fields and surrounding areas should be free from miscellaneous trash (food wrappers/containers, etc) and debris (wood, metal, glass, etc) by incorporating a documented monitoring program.

WORKER HEALTH AND HYGIENE

1. Employees are in good health with no obvious signs of open cuts, sores, rash, wounds or communicable disease.
2. The GAP policy should have a documented employee illness policy. An implemented process is in place that monitors the health and hygiene of all employees.
3. Employees thoroughly wash their hands before starting work and after using restrooms, going on breaks, eating, smoking, sneezing or any activity that may contaminate hands.
4. As an additional precaution and to further ensure produce safety, employees are encouraged to wear gloves when harvesting fresh produce. It should be noted that the use of gloves is not a substitute for proper hand washing. Fresh produce that is minimally processed (strawberries, herbs, etc) requires gloves be worn that are appropriate for the intended product commodity. Gloves are properly maintained (clean, intact, impermeable) to prevent product contamination. Gloves should be changed after going on breaks, eating, smoking, sneezing or after an activity that may contaminate hands.
5. Single use gloves are disposed of after use and reusable rubber gloves are washed and sanitized on a regular basis or at any time they become contaminated.
6. Upon hire, all new employees and/or contracted labor shall be trained on company policies regarding personal health and hygiene, hand washing, field sanitation standards, food safety, food security and GAPs.
7. Food safety training (which can include verbal, written and pictorial training sessions) should have signed acknowledgment that the employees understand and will comply at all times and that failure to do so will result in disciplinary actions up to and including termination. Signed documents are maintained on file for review.
8. Training program frequency is upon initial hire, minimum quarterly refresher training thereafter or more frequently if needed to ensure employee compliance.
9. Effectiveness of training is verified through observed practices, quizzes or testing and training is multi-lingual where applicable.
10. Eating, drinking, chewing gum/tobacco, candy and smoking are prohibited in the growing areas. Break areas outside the field shall be clearly designated and maintained.
11. Hair restraints (hairnets, beard nets, caps) are properly worn and used in all growing/harvesting areas.
12. Employee clothing or uniforms shall not contribute to product contamination. Outer garments such as smocks, aprons and gloves are removed prior to breaks or entering the restrooms and when not worn, are stored in a sanitary manner.
13. Employees are prohibited from wearing exposed jewelry or loose objects.
14. Fingernails shall be kept clean and trimmed. False nails and nail polish are not allowed.

Note: Italicized items considered higher standards than existing industry practices.



Copyright ©2007 Food Safety Leadership Council
Version 1.0 September 10, 2007

15. An appropriate written glass policy must be developed and implemented that restricts unnecessary glass objects from entering the field, harvesting and packing areas.
16. The grower has a written and implemented policy regarding personal item storage outside of the growing area.
17. Potable water and single use disposable cups are readily available for employee use. The containers shall be cleaned and sanitized on a regularly set schedule and cups shall be properly disposed of after each use.
18. An adequately stocked first aid kit must be available within ¼ mile of the working field for immediate treatment as required.
19. A written policy must exist requiring all products to be destroyed that come in contact with blood or other bodily fluids.

FIELD SANITATION AND FACILITIES

1. A sufficient number (one per every 20 employees per gender) of stationary or portable toilet facilities must be within ¼ mile of all workers.
2. Portable toilets must move with the harvest crews at all times and monitors are present to ensure toilets are kept clean, supplied and harvesting crew wash their hands after use.
3. Where there are more than five employees separate toilet facilities for each sex are required.
4. Rinse water capture units shall be used and properly maintained to prevent field contamination.
5. Toilets must be maintained in a sanitary condition and in good repair at all times. Toilets must not be serviced in the fields.
6. Toilet catch basins must be sufficiently maintained (free from cracks and leaks) to prevent field contamination.
7. Measures shall be taken to ensure that waste is disposed of in such a manner so that it does not become a health or hygienic hazard.
8. Portable and stationary toilets are sufficiently supplied with all of the following items: toilet paper, hand washing facilities with potable water, liquid antibacterial soap, single use paper towels, a covered trash receptacle, hand wash icons and hand wash signs in appropriate languages.

ANIMAL CONTROL

1. No animals of significant public health concern (domestic and/or wild animals to include: livestock, dogs, horses, pigs, deer, etc) are permitted within the areas of growing, packing and cooling operations.
2. *If animals were to gain access to the growing fields, management must take immediate corrective action to remove the animals and isolate and destroy any product potentially contaminated by the*

Note: *Italicized items considered higher standards than existing industry practices.*



Copyright ©2007 Food Safety Leadership Council
Version 1.0 September 10, 2007

animals. All feces left behind require removal along with the contaminated soil. A "Notice of Unusual Occurrence and Corrective Action" report shall be completed that details the date and time of occurrence, description of incident, corrective action, person notified, person responsible, and the preventive measures implemented to prevent reoccurrence.

3. If evidence of animal activity is present or the hazard analysis identifies animal activity as a hazard then physical barriers or other measures (such as sound cannons) are required to prevent animals from entering the field.
4. A program must be implemented to manage and effectively control the identified hazard. Consider checking with applicable regulatory authorities for wildlife requirements and potential barrier restrictions.
5. *Where animal grazing is adjacent to growing fields a minimum barrier of ¼ mile is required. We will consider increasing or decreasing this requirement based on your documented risk assessment including variables that influence potential for contamination such as: topography of land, water run-off, ground sloped or graded away from growing field, physical barriers (such as fences, ditches, mounds, berms or bare soil buffers).*
6. *Concentrated animal feed lots require at least one mile distance from the end of crop rows. Distance may vary only if the completed risk assessment takes into account variables that influence potential for contamination such as: topography of land, water run-off, ground sloped or graded away from growing field, physical barriers (such as fences, ditches, mounds, berms or bare soil buffers).*
7. Reduce the presence of reptiles, insects, birds, rodents or other potential sources of contamination within a production field through evaluation of adjacent land and elimination of possible vector attractants (rotting fruit, cull piles, etc).

FERTILIZER AND PESTICIDE USAGE AND CONTROL

1. All fertilizers and pesticides are secured under lock and are only accessed by approved employees. Inventory management records of pesticides and fertilizers (including chemical trade names, product type, EPA numbers, quantity, and usage) are maintained. Fertilizer and pesticide usage records are periodically verified against inventory and discrepancies are immediately investigated.
2. Agrochemicals are clearly labeled in the original containers and are only used for their intended purpose.
3. A written Standard Operating Procedure (SOP) must exist to prevent agrochemicals from being used and equipment being cleaned near water sources. Backflow prevention devices must be installed when fertilizers or pesticides are applied by irrigation.
4. There is a documented and implemented preventative maintenance and calibration program for all fertilizer/pesticide equipment.
5. A process shall be developed, implemented and documented that outlines the steps for disposal of all hazardous materials and containers that is in line with the manufacturer's suggested guidelines and meets all regulatory requirements to prevent environmental contamination and risk to people and animals. A reference document (regulatory, MSDS, etc) shall be on file for review that supports the current process.
6. Empty chemical fertilizer and pesticide containers are kept secured until time of disposal.

Note: *Italicized items considered higher standards than existing industry practices.*



Copyright ©2007 Food Safety Leadership Council
Version 1.0 September 10, 2007

FERTILIZER USE

1. Raw or incompletely composted manure, biosolids or leachate (teas) from raw manure must not be used. If manure is used it is composted or aged per the Code of Federal Regulations 40 CFR 503.32.
2. Acceptance Criteria of Composted Soil Amendments:
 - o *Generic E. coli*: <10 MPN/gram
 - o *Salmonella*: Negative
 - o *E. coli* O157:H7: Negative
 - o *Shigella*: Negative
3. A fertilizer management program that addresses all potential hazards from all materials used, both organic and inorganic, must be in place. Field management should possess verification that fertilizers do not pose a potential health hazard, including preventative measures in place which will reduce the risk of contamination.
4. The compost monitoring plan shall outline sample collection procedures to define how a representative compost sample is collected and tested for each lot of compost. The sample tested should be a composite sample of compost collected from randomly selected depths and locations from either side of the windrow or pile. The number of samples taken will depend on the size and configuration of the windrow or pile.
5. Sampling and microbiological testing plans must be validated based on prescribed composting procedures by process authority.
6. *Records of all fertilizer applications shall be current and kept for a minimum period of two years and available for review.*
7. All fertilizer applications are documented with product applied (trade name if applicable), supplier information, plot/field applied, lot number, date applied, rate applied, amount applied, operator, method of application and other pertinent data.
8. Suppliers of chemical fertilizers shall provide an annual letter of guarantee to certify compliance with federal, state and/or local guidelines. The letter shall be maintained on file for review.
9. Suppliers of compost/treated manure shall provide a Certificate of Analysis including test results from an accredited laboratory for each compost lot that documents information on achieving acceptable micro standards. Supplier should maintain records including the source of the compost, compost treatments, ammonia concentrations, etc.
10. Animal manure containing soil amendments may only be applied to production if they:
 - Are composted (i.e. digested aerobically or anaerobically by microbial action, or exposed to documented minimum time/temperature regime) using a validated process and,
 - Are applied >45 days before harvest or longer depending on specific crop
 - Are incorporated into the soil and not simply used as a top dressing.
11. Treated biosolids applied to food crops shall meet all pathogen standards, site restrictions and harvest intervals outlined in the Code of Federal Regulations, title 40 part 503, "Standards for the Use or Disposal of Sewage Sludge." Do not use biosolids as a soil amendment for production of lettuce and leafy greens.

12. Compost/manure shall be stored so that it does not become a potential source of contamination. Treated compost/manure is segregated from untreated compost/manure; compost/manure is covered by a tarp or roof and stored to prevent run-off. Run-off from compost/manure may be controlled through barriers or physical containments such as concrete block, berms, pits or lagoons.
13. Material Safety Data Sheets shall be on file for all chemical fertilizers used. All fertilizers shall meet regulatory guidelines for purity and content to address all potential contamination concerns to crops and soil. A chemical supplier approval program shall be developed to audit chemical suppliers to ensure specific standards are met.
14. If aerial application is used measures are taken to reduce spray drift. Measures shall be developed and implemented to minimize the risk of microbial contamination. The measures shall include steps to reduce and/or eliminate potential of cross contamination from farm tools, equipment and machinery used to both harvest product and to handle untreated compost or raw manure.

PESTICIDE USE

1. A pesticide management program incorporating integrated pest management practices shall be in place that ensures that agricultural pesticides and chemical usage adhere strictly to all local, county, state, and federal regulatory guidelines.
2. The grower shall obtain a recommendation from a licensed Pest Control Advisor (PCA) prior to applying pesticides.
3. Only trained employees under the direct supervision of licensed or certified pest control operators meeting all regulatory requirements for registration or licensing may apply pesticides. Copies of pesticide applicator's certification for appropriate categories are on file.
4. Effective measures shall be in place to ensure products are not exposed to pesticides that are not EPA registered and do not contain pesticide residues exceeding legal tolerances. An accredited third party laboratory shall be used to verify compliance to applicable pesticide residue regulations. A master list of approved Agrochemicals (Official US Document, dated) shall be on file that lists those agrochemicals (pesticides, fungicides, herbicides, etc) that are approved by the United States regulatory agencies and include chemical name, brand name, application amounts, method of application and residual limits for each specific crop grown. This document must be updated every six months and as chemical regulations change.
5. The grower shall document all pesticide applications with supplier information, plot and field applied, product(s) used, dates applied, amount applied, method of application, target pest, applicator and other pertinent data. Records of pesticide applications shall be kept for a minimum period of two years.
6. When pesticides are applied field entry restriction signage must be centrally posted in language(s) understandable to field workers. Employee re-entry into fields shall strictly follow established EPA guidelines as stated on the product's label.
7. There is a documented and implemented process regarding interval restrictions, from the time pesticide is applied to harvest time, which is in accordance with EPA guidelines as stated on the product's label.

IRRIGATION WATER

1. All water sources must be clearly identified and traceable. An SOP shall be developed and implemented that outlines the process of sampling all irrigation water and shall include pictures as necessary. In addition, the sampling plan must include the following elements:
 - Each water source (canal, reservoir, well) shall be tested within 60 days of its first seasonal use.
 - Water samples are to be taken at the closest reasonable point of use.
 - Monthly samples equate to sampling every 30 days.
2. *Any water source not meeting acceptable microbiological water quality as stated in FSLC standards can not be used for irrigation or used to deliver foliar sprays (pesticides and/or fertilizers application).*
3. Water used to control dust on dirt roads within the growing area must meet described water irrigation standards since aerosol contamination of product is a possibility.
4. Management shall review and sign all test results within 48 hours from date of receipt to ensure appropriate corrective measures are taken if water results are out of specification. Corrective actions are to be documented along with follow up test results until acceptable limits are reached.
5. Records for all irrigation water must be on file for a minimum period of two years listing test results, tests performed, sampling protocol, chemical sanitation and, if applicable, corrective actions. Records of all irrigation water testing shall be current and readily available for review.
6. Measures such as fencing, gates and other physical barriers are taken to prevent animal access to water used for irrigation.
7. A risk assessment is conducted to review surrounding land use that may impact water quality. The assessment takes into consideration possible contamination sources such as septic tanks, stored manure/compost, chemical/fertilizer storage and neighboring land use.
8. Where a septic leach field is adjacent to growing fields a barrier of at least 100 feet is required. Distance may vary only if the completed risk assessment takes into account variables that influence potential for contamination such as: topography of land, ground sloped or graded away from growing field, physical barriers, etc).
9. Mechanisms (air gaps, backflow devices) are installed that will prevent back-siphonage into irrigation pipes and water lines.
10. Conduct and document routine inspection and preventative maintenance of equipment used in water quality treatment such as filtration units, chlorine injectors and backflow devices in order to maintain established water quality standards.
11. Whenever possible, attempt to effectively minimize direct contact between irrigation water and the edible portion of the crop.
12. If used, reclaimed sewage water intended for any agricultural use, must achieve defined FSLC acceptable irrigation standards and all regulatory requirements.

13. Water that is used post-harvest on produce or food contact surfaces that come into direct product contact shall be potable water that is monitored at sufficient frequencies to ensure potability.

WELL WATER

1. *Microbiological Standards for well irrigation water are as follows (see Appendix 1):*
 - *Generic E. coli: <1.1 MPN/100 mL is Acceptable*
 - *Generic E. coli: ≥1.1 MPN/100 mL is Unacceptable water quality that requires immediate documented corrective and preventative actions. The water shall not to be used for irrigation.*
2. Microbiological testing of well water used for irrigation shall be at a minimum conducted on a monthly basis and at the onset of crop production.
3. Please refer to Standard Methods for the Examination of Water and Wastewater, 21st Edition, published by the American Public Health Environment Association (APHA), American Water Works Association (AWWA) & Water Environment Federation (WEF), 2005. Analysts, researchers and regulatory officials have relied on this comprehensive reference tool as a trusted source of accurate, proven methodology for analysis of natural water, water supplies and wastewater.
4. Wells that dispense ground water are properly constructed, maintained and secured (locks on wellheads, water storage tanks, etc). Well water sources shall have an enclosed pump head to prevent contamination and animal access.
5. The land surrounding the well is elevated and properly sloped to aid in drainage away from the well. The well casing should extend above ground level by more than 12 inches.
6. Steps are taken to minimize microbial contamination of wells including but not limited to the following: a well preventative maintenance program; documented inspections of wells; filtration; chlorination; etc. Wells should be examined annually or more often as needed by a qualified water quality expert.
7. Corrective action for unacceptable well results:
 - Do not use water source for irrigation or foliar applications.
 - Complete evaluation of well water and its method of distribution and assess potential sources of contamination.
 - Take appropriate documented corrective and preventative actions, including treatment of well.
 - Re-test sample of well water for *Generic E.coli*.

SURFACE WATER SOURCES (CANALS, DITCHES, PONDS, RESERVOIRS)

1. *Standards for irrigation water from surface water sources are as follows and based on establishing a rolling geometric mean (see Appendix 2):*
 - *Generic E. coli: <1.1 MPN/100 mL is Acceptable*
 - *Generic E. coli: ≥1.1 MPN/100 mL but <126 MPN/100 ml and negative for pathogens is Conditional and requires immediate documented corrective and preventative actions.*
 - *Generic E. coli: ≥126 MPN/100 mL or positive for pathogens is Unacceptable water quality that shall not to be used for irrigation.*
2. In order to establish a baseline performance standard and to understand water quality at the onset of crop production all surface water sources used for irrigation shall be tested daily for 5 consecutive days. Each water sample must be taken at least 18 hours after the previous sample.

Water quality is based on a rolling geometric mean of the five (5) most recent water tests. Once the geometric mean is established, each new test result replaces the oldest result to maintain the rolling mean average. If results of untreated surface water source meet acceptable water irrigation standards then test monthly when environmental conditions and management practices are consistently applied (e.g. no floods, heavy rains).

3. Please refer to Standard Methods for the Examination of Water and Wastewater, 21st Edition, published by the American Public Health Association (APHA), American Water Works Association (AWWA) & Water Environment Federation (WEF), 2005. Analysts, researchers, and regulatory officials have relied on this comprehensive reference tool as a trusted source of accurate, proven methodology for analysis of natural water, water supplies and wastewater.
4. Well water pumped into reservoirs is now considered a surface water source.
5. Surface water sources used for irrigation should have effective measures in place to reduce microbial contamination.
6. A regularly conducted and documented program must exist for inspection, treatment and maintenance of open water sources. Surface waters used for irrigation shall be free from weeds, trash and other foreign materials.
7. Testing of water shall be conducted prior to and during irrigation to verify the effectiveness of the treatment and to ensure that acceptable control standards are constantly met.
8. See appendix 2 for required corrective actions when testing results reveal conditional or unacceptable results.

HARVEST PRACTICES

1. A pre-operational inspection program included in the Good Agricultural Practices field program should include but is not limited to:

Production Operations: Assess and document prior to harvest that appropriate food safety programs and management systems have been adhered to. The pre-harvest food safety field inspection shall be implemented and verified by documentation not more than one week prior to harvest. Prior to harvest, each planting block will be assessed for potential contamination risks. Evaluation will include but is not limited to:

- Is there documentation that required crop protection chemical applications pre-harvest intervals have been observed before harvest begins?
- Is there evidence of wildlife or livestock intrusion in the block (e.g. tracks, droppings, etc)?
- Is there evidence of flooding?
- Are potentially contaminating materials (e.g. compost, manure, etc) present in such manner as to pose a likely contamination risk to the field to be harvested?
- Is there any evidence that the irrigation water source and delivery system may potentially be compromised?
- Is there any evidence that field workers have not complied with employee hygiene rules as outlined in the company food safety programs?

Postharvest Operations: There shall be a daily pre-operational inspection program for packing-house operations to monitor and document adherence to Good Agricultural Practices and packinghouse food safety Best Management Practices.

2. To further ensure product quality, shed packed product is transported from the field within an acceptable time range depending on product type, temperature conditions, distance from harvesting areas, etc.
3. All harvested product is able to be traced back to a specific field/lot/greenhouse. Harvested product that is transported to packing/cooling shed is identified with field/lot information and harvest date/crew.
4. Management verifies product traceability through documented semi-annual mock recalls.
5. During storage, harvest containers, tools (knives, scissors, corers, etc) and food contact equipment (tables, food contact surfaces, etc) are made of easily cleanable, non-toxic, non-porous, food grade materials. The supplier maintains letters of guarantee for all food contact products and packaging stating that it is in compliance with federal, state and local regulations.
6. There is a documented daily inspection of harvest containers, tools, machinery and packing materials prior to use to look for evidence of pest activity, cleanliness, good repair, contaminants and foreign materials. Appropriate corrective actions are taken when deficiencies are noted.
7. During storage, harvest containers and packaging materials are stored off the ground, adequately covered and in a manner that will prevent pest access and harborage.
8. When practical, harvested product is adequately covered when transported to packing shed.
9. All reusable harvest containers, tools, equipment and machinery are adequately cleaned and sanitized prior to use.
10. Test kits are used to monitor concentrations of sanitizers applied to food and non-food contact surfaces during cleaning operations. Concentrations are monitored and documented on a regular basis and shall be consistently maintained within acceptable limits. The following minimum information is maintained and disclosed: sanitizer used, concentration observed and target range.
11. Harvest containers and tools are only used for their intended purposes.
12. All lubricants used on harvest equipment and machinery are food grade and stored in a secure and sanitary manner.
13. Hydraulics on harvest machinery is protected with drip catch pans to prevent product contamination. There is no un-protected glass on the harvest equipment.
14. All platforms, walkways and ladders above exposed products or packaging on harvest equipment are equipped with kick plates or are shielded to prevent product contamination.
15. There is a documented preventive maintenance program to keep facilities, harvest equipment and machinery in sanitary and operational condition.
16. There is a Master Sanitation Schedule and written Sanitation Standard Operating Procedures (SSOPs) for the harvesting machinery and equipment. Records indicate that the plan is properly and consistently executed. SSOPs include a list of harvest equipment, cleaning frequency, chemical name, concentrations used and detailed step-by-step instructions for equipment sanitation.

17. *There is a microbiological indicator (adenosine triphosphate, coliforms, etc) monitoring program to verify efficacy of sanitation program for harvesting machinery and equipment. Program identifies monitoring methods, sampling plan, frequency of testing, acceptable limits and corrective actions when limits are exceeded.*
18. Material Safety Data Sheet (MSDS) information shall be readily available for all chemical compounds in the facility with appropriate “approved for use” statement.
19. All exposed product and harvest containers are protected from overhead contamination, condensation, pests and other potential sources of contamination.

MICROBIOLOGICAL TESTING PROGRAMS

1. The grower/harvester performs microbiological testing of high risk products (leafy greens, tomatoes, green onions, herbs, berries, sprouts, etc) to verify the effectiveness of the food safety program and ensure that its products meet its established microbiological specifications. The plan identifies products tested, microbiological methods, sampling plan, frequency of testing, microbiological specifications, lab used and corrective actions when limits are exceeded.
2. An accredited in-house or third party laboratory is used for testing of all product/water/compost/soil. Validity of laboratory results is assured through the use of Good Laboratory Practices (GLPs) including trained laboratory personnel, laboratory participation in a check sample program, documented laboratory Quality Control (QC) procedures and use of approved and recognized methodologies.

PRODUCT TRANSPORT

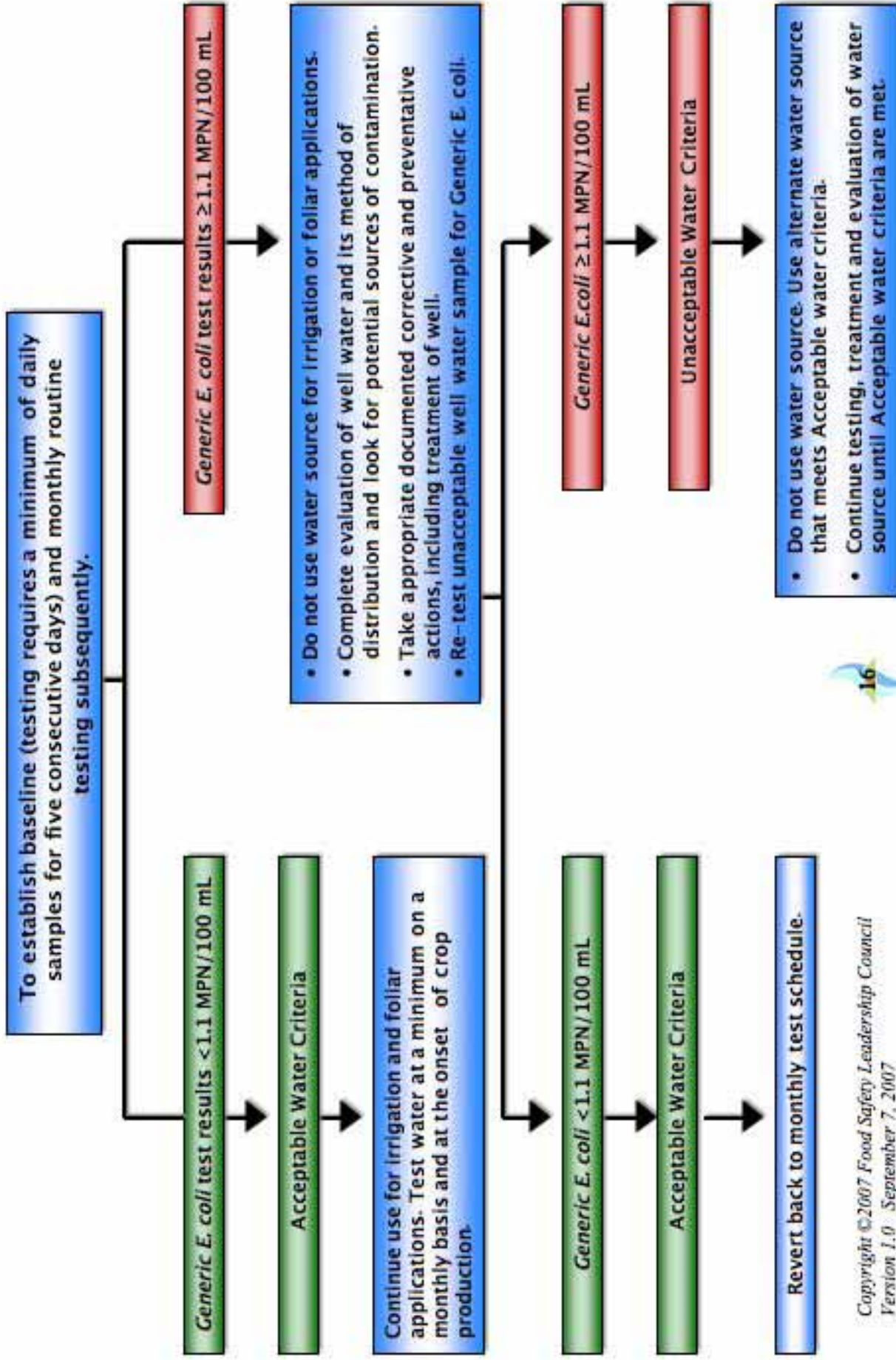
1. Trucks used to transport or back-haul produce have not been previously used to transport materials (e.g. livestock, manure, hazardous materials, chemicals, raw meats) that can contaminate the product. Documentation must be consistently maintained.
2. Trailers are in good repair and are cleaned and inspected prior to loading and records are maintained.
3. There is a detailed documented SSOP for scheduled cleaning of all trailers used to transport produce.
4. Transportation vehicles shall be restricted to transporting fresh produce from the fields to the coolers.
5. Condition of pallets shall be adequate to prevent contamination or damage to packaging and/or products.
6. Outbound trailers are secured with a means to provide tamper evidence (lock or seal).

FOOD DEFENSE

1. A documented food security program is in place and is reviewed on a regular basis.

2. Effective measures are taken to control unauthorized access to facility and/or field. Measures can include cameras, employee identification, fences with locked gates, security guards, area patrol, unauthorized entry signs, etc.
3. Access to all areas is restricted to authorized personnel only. Visitor entrances are clearly posted and visitor access, including off duty employees, is strictly controlled. Visitors, including contractors and regulatory inspectors, are logged in, provided with identification badges and accompanied by appropriate personnel at all times. Visitors should be given a copy of GAPs and/or GMPs to review.
4. There is a screening process (reference check, background check, etc) for all key personnel, new and/or potential employees, including temporary employees, to determine suitability of employment.
5. The grower maintains detailed emergency contact phone numbers for management, law enforcement and regulatory agencies.

Well Water Used for Irrigation and Foliar Applications (Appendix 1)



Surface Water Sources Used for Irrigation and Foliar Applications (Appendix 2)

