



***Good Agricultural Practices***  
***“GAP”***

***and***

***Standard Operating Procedures***  
***“SOP”***

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*GAP151203*



## **OUR FOOD SAFETY COMMITMENT**

The goal of the Boggiatto Produce Food Safety Program is to institute a proactive food safety system for its growing, harvesting and cooling operations whereby any potential product hazard is anticipated and controlled from product growing through distribution. Food safety and quality control are the responsibility of all employees at Boggiatto Produce and affiliated service and product providers. Management has provided the tools and established guidelines for producing safe, wholesome, quality produce. All employees are accountable for consistently maintaining these standards.

The Food Safety Program has been established with the help of our company officers. Although the burden of food safety and quality control is in the hands of management and supervisors, all employees serve as inspectors when product moves through their area. Boggiatto Produce employees are authorized to hold or reject product found to be out of compliance, subject to the evaluation and final approval of authorized management.

Boggiatto Produce incorporates Good Agricultural Practices (GAP), Good Harvesting Practices (GHP), and Good Manufacturing Practices (GMP) as a system. This concept is based on teamwork, continuous operation improvement, and three-way communication between management, sales and production employees. Systems improvement teams have been organized to address issues of finished product checks, working conditions, waste control, equipment maintenance, operation efficiency, safety in facilities, sanitation, employee personal hygiene, etc., and encourages all employees to utilize their talents in helping to maintain and/or improve product quality. The management at Boggiatto Produce believes these measures will insure that the finished product meets the highest standard of quality for the customer's end use.

Food safety is not a static program, but dynamic in nature. Every employee "tailgate" meeting involves food safety and every management action insures not only that food safety fits comfortably into the overall objective of Boggiatto Produce, but that it is also understood and easily executed by each and every employee and contractor serving Boggiatto Produce.

All of our programs will adhere to the best science available with regard to food safety and any emerging program including, but not limited to, the California Leafy Green Products Handler Marketing Agreement. All documents will be held at Boggiatto Produce's office or, if not possible, documents are allowed to be held at each grower's office.

**GOOD AGRICULTURAL PRACTICES  
“GAP”**

(Pre-Harvest)

**BOGGIATTO PRODUCE INC.**  
**FIELD OPERATIONS FLOW CHART**  
**(Pre-Harvest)**

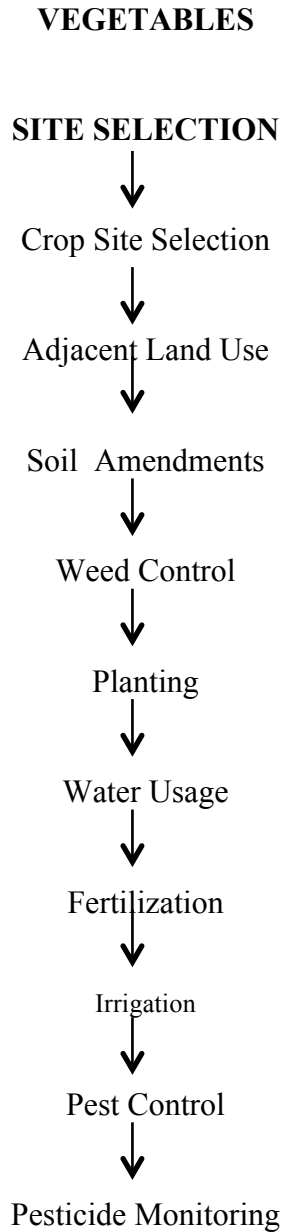
SOP 2.01

SOP 2.01, 2.02, 2.03, 2.04,  
2.05

SOP 3.01, 3.02

SOP 4.01, 4.02

SOP 5.01, 5.02



**STANDARD OPERATION PROCEDURES FOR FIELD  
OPERATIONS  
“SOP”**

(Pre-Harvest)

## SOP 1.01

### ADMINISTRATION Creating a Standard Operating Procedure

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 7

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 06/10/2008

**Purpose:**

To provide general guidelines to insure consistency in the design and development of Standard Operating Procedures (SOP).

- a) Select the category (e.g., Site Selection, Adjacent Land Use, Water Usage, etc.) in which the SOP will be created.
- b) Utilizing the format outlined in SOP 01.02 “SOP Format,” create the initial draft of the SOP; do not assign an SOP number.
- c) Submit this draft to **Food Safety Coordinator** for initial review and comment.
- d) Consolidate and incorporate all comments. Provide reasoning for the non-inclusion or revision of any comment.
- e) Request an SOP number from **Food Safety Coordinator**.
- f) Submit second draft for review and comment.
- g) Incorporate final comments and submit to **Company President** for approval signatures.
- h) Issue approved SOP to all affected departments.

**SOP 1.02**

**ADMINISTRATION  
SOP Format**

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 7

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 06/10/2008

**Purpose:**

To insure consistency in the layout and appearance of all SOP.

The following format shall be utilized for all Standard Operating Procedures. No deviations or revisions to this format shall be made without approval using SOP 1.03 "Revision of an SOP."

**SOP XX-XX**

**(SOP CATEGORY)  
SOP Title**

**First approval by:** \_\_\_\_\_ **Revision No.:** \_\_\_\_\_

**Second approval by:** \_\_\_\_\_ **Effective Date:** \_\_\_\_\_

**Purpose:**

A description of the purpose or issue that this SOP will address, it should be directly related to the SOP title.

**Concern**

Describe the specific concern to be addressed by this SOP (this will not normally apply to administrative SOP).

**Contaminants Introduction:**

Based upon the specific issues and concerns, list all of the ways that the subject contaminates could be introduced. For example;

- a. Land previously used as a municipal waste site.
- b. Land previously used for disposal of bio-solids, incinerator waste, etc.

**Preventative or corrective measures:**

List all measures required to prevent growing of produce on contaminated ground. For example;

- a. Avoid purchase or lease of ground previously used for questionable practices.



## SOP 1.03

### ADMINISTRATION Revision of an SOP

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 7

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 06/10/2008

**Purpose:**

To provide a formalized revision process for Sanitation Standard Operating Procedures (SOP).

Initiation of the revision process. Growers are encouraged to comment on the content of the SOP. The SOP is considered a “living” document. The document will evolve over time to address changing consumer concern. In addition it is assumed that the document’s appropriateness and pertinence will be improved as the grower suggestions are incorporated.

1. Growers can submit their suggestions for altering the SOP.
2. Adopted suggestions will be incorporated into the SOP and/or Food Safety Policy under the following format:
  - a. Legibly and in **RED** ink, mark up the SOP to be revised with the required changes.
  - b. Submit the revision draft to **Food Safety Coordinator** for initial review and comment.
  - c. Consolidate and incorporate all comments. Provide reasoning for the non-inclusion or revision of any comment.
  - d. Submit the second revision draft for review and comment.
  - e. Incorporate final comments and submit to **Company President** for approval signatures.
  - f. Issue approved SOP to all affected departments.

## SOP 2.01

### SITE SELECTION

#### Considerations Made Prior to Lease or Purchase of Farm Ground

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 8

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/30/2010

**Purpose:**

To insure that land is suitable for the intended use when purchasing or leasing new ground with the intent of growing produce intended for human consumption.

**Concern**

Crop contamination resulting from growing in soils microbiologically or chemically tainted<sup>1</sup>.

**Contaminants Introduction:**

At this time, any possible concern that can be considered as contaminants introduction were not specified

**Preventative or corrective measures:**

- a. Ideally, land should be purchased or leased that has previously been successfully utilized for growing produce for human consumption without incident.
- b. Avoid purchase or lease of ground previously used for questionable practices, also verify the land history as stated on the latest LGMA GAP metrics.
- c. For land that was previously used for animal husbandry practices, it is recommended that there be a time lapse of at least one year prior to growing produce for human consumption.
- d. For land without a history of growing produce for human consumption, a title search should be conducted.
- e. Emphasis should be placed on identifying past owners or tenants that may have disposed of chemicals or biological wastes.
- f. If a title search is not available, interviews of local residents, governmental officials or real state agents are advised.
- g. If past owners or tenants are suspected of disposing questionable materials, an environmental specialist should be consulted.
- h. If past owners or tenants are suspected of using the ground for the disposal of questionable materials, soil analyses for suspected contaminants should be conducted.

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<sup>1</sup> Laws regarding previously contaminated ground are covered under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) commonly referred to as "Superfund."

## SOP 3.01

### ADJACENT LAND USE Animal Husbandry and Environment

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 8

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/30/2010

#### **Purpose:**

To insure that contamination concerns are addressed when adjacent grounds or nearby farms are used for animal husbandry or rendering (e.g. grazing, housing, feeding, slaughtering, etc.).

#### **Concern**

Microbial contamination resulting from fecal matter, sick or dead animals (e.g. *E. coli* O157-H7 in cattle or dairy cows, salmonella in fowl, etc.)

#### **Contaminants Introduction:**

- a. Ground sloping toward the crop contaminated by runoff resulting from rains.
- b. Dust drift by wind movement.
- c. Soil-to-produce contamination.
- d. Animals of significant risk encroachment.
- e. Domestic animals encroachment.
- f. Encroachment by urban development.

#### **Preventative or corrective measures:**

Survey land adjacent to the ranch for animal husbandry and document findings.

- a. Trenching or other land preparation to divert rain induced runoff of animal waste.
- b. Dust control systems (i.e. wet roads on adjacent land).
- c. Remove soil leaves or do not harvest soiled heads when excessive soil or mud builds up on produce.
- d. Evaluate domestic animal, livestock and wildlife activity proximate to produce.
- e. Conduct pre-season, pre-harvest and harvest assessments as periodic assessments.
- f. Do not harvest areas of field where unusually heavy activity of animals of significant risk is apparent.
- g. Consider the use of noisemakers or other practices to reduce animals of significant risk encroachment.
- h. Verify that there are enough of a buffer between high-risk areas (rivers, open range lands, urban centers, etc) and the edge of production lots (as indicated on the LGMA GAP Metrics Ref. #3).

#### **References:**

1. Integrated Animal Waste Management. Chapter 2, pp. 13-22. November 1996 by Council for Agricultural Science and Technology.
2. Manure Storage developed by the Engineering Practices subcommittee of the ASAE Agricultural Sanitation and Waste Management Committee. Revised October 1991.
3. Commodity specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens. Verify the most recent version available at [www.caleafygreens.ca.gov/members/resources](http://www.caleafygreens.ca.gov/members/resources) .

## SOP 3.02

### ADJACENT LAND USE Stored Organic Fertilizers (Manure Raw or Composted)

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 7

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 06/10/2008

**Purpose:**

To address the use of adjacent grounds or nearby farms for composting or storage of animal waste.

**Concern**

Microbial contamination (e.g. Escherichia coli O157-H7 in cattle or dairy cows, salmonella in fowl, hog cholera from swine waste, etc.) in crops in adjacent fields or irrigation waters (surface or wells).

**Contaminants Introduction:**

Movement of animal waste by wind, water runoff or animal tracking.

**Preventative or corrective measures:**

*Survey adjacent grounds for animal waste storage or composting operations.*

- a. Cover animal manure with plastic tarps.
- b. Store animal manure away from crops.
- c. Create ditches where necessary to divert runoff.

**References:**

1. Integrated Animal Waste Management. pp. 23-33, 36. November 1996 by Council for Agricultural Science and Technology.

## SOP 4.01

### SOIL AMENDMENTS

#### Selection and Application of Animal Waste Based Soil Amendments

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 9

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/29/2011

#### **Purpose:**

To insure the choice of material used for maintaining soil organic matter levels, resultant soil aggregation, soil nutrient levels, plant vigor, yield and related properties addresses potential contamination concerns.

#### **Concern**

Crop contamination resulting from human pathogens.

#### **Contaminants Introduction:**

Improper use of composted manure. The use of untreated manure incompletely composted or non-thermally treated animal manure or bio-solids is prohibited due to the high-risk level associated with potential introduction of plant or human pathogens.

#### **Composting Process Validation:**

##### Enclosed or within-vessel composting:

Active compost must maintain a minimum of 131 degrees Fahrenheit for 3 days, with a curing/aging period of at least 45 days before application to fields.

##### Windrow composting:

Active compost must maintain aerobic conditions for a minimum of 131 degrees for 15 days, with a minimum of five turnings followed by a curing/aging period of at least 45 days before application to fields.

##### Aerated static pile composting:

Active compost must be covered with at least 12 inches of insulating materials and maintained a minimum of 131 degrees for 3 days, with a curing/aging period of at least 45 days before application to fields.

#### **Target Organism:**

- Fecal coliforms.
- Salmonella spp.
- *E coli* O157:H7.

#### **Acceptance Criteria:**

- Fecal coliforms: <1000 MPN/gram
- Salmonella spp: Negative or <DL (<1/30gr)
- *E coli* O157:H7: Negative or <DL (<1/30gr)

#### **Recommended Test Method:**

- Fecal coliforms: 9 tube MPN
- Salmonella spp: US EPA Method 1682
- *E coli* O157:H7: Any laboratory validated method for compost sampling
- Other US EPA, FDA or AOAC-accredited methods may be used as appropriate.

**Sampling plan:**

- 12-point sampling plan composite sample (divide each lot/pile into a 3x4 grid and extract 12 equi-volume samples.).
- Sample may be taken by the supplier if trained by the testing laboratory
- Laboratory must be certified for microbial testing by an appropriate process authority.

**Testing Frequency:**

- Each lot before application to production field. A lot is defined as a unit of production equal to or less than 5,000 cubic yards.

**Application Interval:**

- Must be applied >45 days before harvest.

**Documentation:**

- All test results and/or certificates of analysis shall be conducted and available for verification from the grower (responsible party) for a period of two years.

**Rationale:**

- The microbial metrics and validated processes for compost are based on allowable levels from California State Regulations (CCR title 14 – Chapter 3.1 – Article 5 2007), with the addition of testing for *E coli* O157:H7 as microbe of particular concern. The 45 day application interval was deemed appropriate due to the specified multiple hurdle risk reduction approach outlined. Raw manure must be composted with an approved process and pass testing requirements before an application.

**Preventative or corrective measures:**

- a. A letter of assurance from the supplier must be obtained before any product application.
- b. The use of untreated manure, incompletely composted, non-thermally treated animal manure or bio-solids is prohibited due to the high-risk level associated with containing plant or human pathogens.
- c. All composted manure applications must be identified by supplier identification (e.g. lot/pile number).
- d. A file is to be maintained of source material (i.e. % of animal/vegetable) of the composted material.
- e. A periodic review of composted manure supplier's records is to be performed.
- f. Composted manure suppliers must be in compliance with approved composting practices.
- g. For composted manure, follow GAP guidelines such as maximizing time between application and harvest.
- h. Application of composted manure is made prior to planting (or during the dormant period for perennials).

In the state of California Sections 40502, 43020, and 43021 of the Public Resource Code Sections address minimum composting procedures. The guidelines call for the compost to be maintained at 131°F - 149°F for a minimum of three days and turned no fewer than five times. The microbiological testing results should yield *E. coli* levels of less than 1,000 MPN/gram and Salmonella levels of less than three MPN /4 grams of compost.

## SOP 4.02

### SOIL AMENDMENTS

**Soil amendments containing animal manure that has been physically heat treated or processed by other equivalent methods**

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 8

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/29/2011

#### **Purpose:**

To insure the choice of material used for maintaining soil organic matter levels, resultant soil aggregation, soil nutrient levels, plant vigor, yield and related properties addresses potential contamination concerns.

#### **Concern**

Crop contamination resulting from human pathogens.

#### **Contaminants Introduction:**

Improper use of composted manure.

#### **Physical Heat Process Validation:**

- The physical heat treatment processes applied to the soil amendment containing animal manure shall be done via a validated procedure to assure that the process is capable of reducing pathogens of human health significance to acceptable levels.

#### **Target Organism:**

- Fecal coliforms.
- Salmonella spp.
- *E coli* O157:H7.

#### **Acceptance Criteria:**

- Fecal coliforms: Negative or <DL per gram
- Salmonella spp: Negative or <DL (<1/30gr)
- *E coli* O157:H7: Negative or <DL (<1/30gr)

#### **Recommended Test Method:**

- Fecal coliforms: 9-tube MPN
- Salmonella spp: US EPA Method 1682
- *E coli* O157:H7: Any laboratory validated method for testing soil amendments.
- Other US EPA, FDA or AOAC-accredited methods may be used as appropriate.

#### **Sampling plan:**

- 12 point sampling plan composite sample (divide each lot/pile into a 3x4 grid and extract 12 equivolume samples.).
- Sample must be taken by the supplier if trained by the testing laboratory.
- Laboratory must be certified for microbial testing by annual review of laboratory protocols based on GLP's by recognized NGO.

#### **Testing Frequency:**

- Each lot before application to production field. A lot is defined as a unit of production equal to or less than 5,000 cubic yards.

**Application Interval:**

- If the physical heat treatment process used to inactivate human pathogens of significant public health concern that may be found in animal manure containing soil amendments, is validated and meets the microbial acceptance criteria outlined below, then no time interval is needed between application and harvest.
- If the physical heat treatment used to inactivate human pathogens of significant public health concern that may be found in animal manure containing soil amendments is not validated but will likely significantly reduce microbial populations of human pathogens (minimum temperature: 300 degrees Fahrenheit (150 degrees Celsius) for 60 min resulting in a moisture content <30 % dry weight) and meets that microbial acceptance criteria outlined above, then a 45 day interval between application and harvest is required.

**Documentation:**

- All test results and/or Certificates of analysis shall be conducted and available for verification from the grower (responsible party) for a period of two years. The suppliers operation should be validated by a process authority and a record maintained by the grower for a period of two years.

**Rationale:**

The microbial metrics and validated processes for compost are based on allowable levels from California State Regulations (CCR title 14 – Chapter 3.1 – Article 5 2007), with the addition of testing for *E coli* O157:H7 as microbe of particular concern. A more stringent level of fecal coliform was also included to address the much more controlled nature of soil amendments produced in this manner. The above suggested application interval was deemed appropriate due to the specified multiple hurdle risk reduction approach outlined. Raw manure must be composted with an approved process and pass testing requirements before an application.



## SOP 4.03

### SOIL AMENDMENTS Use of Chemical Fertilizers for Crop Nutrients

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 7

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 06/10/2008

**Purpose:**

Choice of material used for maintaining crop vitality, vigor and productivity.

**Concern**

Crop contamination resulting from chemical contamination.

**Contaminants Introduction:**

- a. Presence of radioactive isotopes and/or heavy metals in chemicals applied.
- b. Unregistered products being applied.

**Preventative or corrective measures:**

- a. A letter of assurance from the supplier stating that the material is manure free must be obtained before any product application.
- b. All chemical fertilizers should meet state\* guidelines regulating purity and content.
- c. A review of the manufacturer's or distributor's Material Safety Data Sheets (MSDS) must be made.
- d. Plot and field records should identify all chemical fertilizer applications by supplier identification (e.g. lot number, etc.)
- e. Farming operations should develop a protocol for developing an approved supplier list.
- f. Application of chemical fertilizers should be limited to material sourced from approved suppliers.
- g. Any test results and/or documentation shall be available for verification from the grower or the responsible party for a period of two years.

\* EPA registration number has to be issued for each and all the chemicals used in the field, thus providing that the manufacturer is in compliance with local, state and federal regulations.

## SOP 4.04

### SOIL AMENDMENTS

#### Application Procedure for Fertilizers and Organic Soil Amendments

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 7

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 06/10/2008

**Purpose:**

To insure that after selection of appropriate organic and/or chemical fertilizer application, procedures are compliant with good agricultural practices.

**Concern:**

Direct exposure of the edible portion of the produce with composted manure or mineral fertilizers.

**Contaminants Introduction:**

- a. Use of untreated manure.
- c. Composted manure applications made during the growing season.
- d. Chemical fertilizers applied prior to harvest and/or in a manner that allows direct contact with the crop, leaving residue.
- e. Not following proper mixing procedures when applying chemical fertilizers.

**Preventative or corrective measures:**

- a. A letter of assurance from the supplier must be obtained before any product application.
- b. The use of untreated manure, incompletely composted, non-thermally treated animal manure, bio-solids or any non-synthetic crop treatment is prohibited due to the high-risk level associated with containing plant or human pathogens.
- c. Composted manure applications should follow GAP guidelines such as maximizing time between application and harvest, and planning crop rotations.
- d. All composted manure applications must be soil incorporated immediately to facilitate rapid decomposition into soil organic matter (i.e. fulvic acid, humic acid, humin, etc.) and breakdown.
- e. Application and dispersal mechanisms should provide relatively even applications.
- f. Chemical fertilizers applied during the season may be applied through the drip irrigation system, if available. If overhead method is used, the chemical fertilizer must be applied in a manner so that all residue is thoroughly washed from the produce before harvest.
- g. Mixing procedures must be followed as per label recommendation following any local, state or federal guideline available.

## SOP 4.05

### SOIL AMENDMENTS Farming Equipment

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 9

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 12/03/2015

**Purpose:**

To insure that cross contamination from farming equipment is prevented or minimized.

**Concern:**

Cross contamination of fields due to improper driving and handling of farming equipment (Tractors, spray applicators, etc.)

**Contaminants Introduction:**

- a. Introduction of contaminants (physical, chemical or microbiological) on fields due to improper handling of farming equipment.

**Preventative or corrective measures:**

- a. Farming equipment must be maintained in proper working conditions.
- b. Avoid crossing from a compost-applied field to a ready-to-harvest field.
- c. Avoid crossing flooded areas or areas where standing water from unknown source are deposited.
- d. If farming equipment has water tanks installed, they must be maintained in a clean and tidy condition. Water tanks must be clean and flushed prior to using for agricultural purposes and whenever deemed necessary.
- e. In the event of cross contamination, the equipment must be cleaned and sanitized prior to returning to any field and sanitation records must be kept on the NUOCA log (Notice of Unusual Occurrence and Corrective Action). Refer to SOP# 8.05 on the GHP manual for proper cleaning procedures.

## SOP 5.01

### WATER USAGE Microbiological Contamination of Water Pre-harvest Foliar and Non-Foliar Applications

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 8

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/29/2011

#### **Purpose:**

To insure that any water source (municipal, well, reclaimed water, reservoir and canal) used for irrigation, frost protection, as a carrier for pesticides and fertilizers, etc. is of adequate quality for its intended use, and steps are taken to minimize the risk of microbial contamination.

#### **Concern**

Water can be a vector for microbes including human pathogens (e.g. *E. coli*, cholera, salmonella, etc.).

#### **Contaminants Introduction:**

Though the level of the water's contamination is assumed to be important, the level of risk that tainted waters pose in production agriculture is poorly understood. Ideally, pre-harvest water should not contain generic *E. coli*, but low levels do not necessarily indicate that the water is unsafe. Investigation and/or remedial action should be taken when test results are higher than normal, or indicate an upward trend. Investigation and remedial action shall be taken when acceptance criteria are exceeded.

#### **Target Organism:**

Generic *E. coli*.

#### **Test Method:**

15-tube MPN (FDA BAM) or other US EPA, AOAC or other method accredited for quantitative monitoring of water for generic *E. coli*. Presence/absence testing with a similar limit of detection may be used as well.

#### **Acceptance Criteria:**

##### **Foliar Applications:**

≤126 MPN (or CFU)/100 ml (rolling geometric mean n=5) and ≤235 MPN/100 ml for any given sample.

##### **Non-Foliar Applications:**

≤126 MPN (or CFU)/100 ml (rolling geometric mean n=5) and ≤576 MPN/100 ml for any given sample.

#### **Sampling Frequency:**

One sample per water source shall be collected and tested prior to use if more than 60 days since last test of the water source. Additional samples shall be collected no less than 18 hours apart and at least monthly (as defined on the most recent LGMA GAP metrics) during use from points within the distribution system. For wells and municipal water sources, if generic *E. coli* levels are within the acceptance criteria for five consecutive samples, the sampling frequency may be decreased to once every six months unless there is a significant source or distribution change. Only one sample per month per distribution system is required. If there are multiple potential point-of-use sampling points in a distribution system, then samples shall be taken from different point-of-use locations each subsequent month (randomize or rotate sample locations).

### **Remedial Actions:**

If the rolling geometric mean (n=5) or any one sample exceeds the acceptance criteria, then the water shall not be used whereby edible portions of the crop are contacted by water until remedial actions have been completed and generic *E. coli* levels are within acceptance criteria:

- Conduct a sanitary survey of water source and distribution system to determine if a contamination source is evident and can be eliminated. Eliminate identified source(s).
- For wells, perform a sanitary survey and/or treat as described in appendix A Sanitary survey of the LGMA GAP metrics.
- Retest the water at the same sampling point after conducting the sanitary survey and/or taking remedial actions to determine if it meets the outlined microbial acceptance criteria for this use. A more aggressive sampling program (sampling once per week instead of once per month) should be instituted at the sampling point that was out of compliance if an explanation for the excessive levels is not readily apparent. This type of sampling program should also be instituted if an upward trend is noted in normal sampling results.

For example, if one irrigation water sample has a count >235 MPN/100 ml, stop irrigation with that system, examine the distribution line and water source as described in Appendix A Sanitary Survey of the LGMA GAP Metrics, and retest from the same point of use. In addition, continue testing daily for 5 days at other sprinkler heads (or points of use), and do not use the irrigation system until the rolling geometric mean of these 5 samples is  $\leq 126$  MPN/100 ml. If any of the 5 samples is >235 MPN/100 ml (>576 MPN/100 ml for non-foliar applications), repeat the sanitary survey and/or remedial action and do not use the water system until the source of contamination is corrected.

### **Crop Testing:**

If water testing indicates that a crop has been directly contacted by water exceeding acceptance criteria, product shall be sampled and tested for *E. coli* O157:H7 and *Salmonella* as described in Appendix C of the LGMA GAP Metrics, prior to harvest. If crop testing indicates the presence of either pathogen, the crop shall not be harvested for human consumption.

### **Records:**

All test results and remedial actions shall be documented and available for verification from the grower or other responsible party for a period of two years.

## SOP 5.02

### WATER USAGE Microbiological Contamination of Water Post-harvest Direct Product Contact or Food Contact Surface

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 9

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/29/2011

#### **Purpose:**

To insure that any water source (city/potable water must be used only for this purpose) is of adequate quality for its intended use, and steps are taken to minimize the risk of microbial contamination.

#### **Concern**

Water can be a vector for microbes including human pathogens (e.g. *E. coli*, cholera, salmonella, etc.).

#### **Contaminants Introduction:**

Though the level of the water's contamination is assumed to be important, the level of risk that tainted waters pose in production agriculture is poorly understood. Water that directly contacts edible portions of harvested crop, or is used on food contact surfaces, such as equipment or utensils, shall meet the Maximum Contaminant Level Goal (MCLG) for *E. coli* as specified by US EPA or contain approved disinfectant at sufficient concentration to prevent cross contamination. Microbial or physical/chemical testing shall be performed, as appropriate to the specific operation, to demonstrate that acceptance criteria have been met.

#### **Target Organism and Test method:**

As described for foliar/non-foliar applications.

#### **Sampling Frequency:**

One sample per water source shall be collected and tested prior to use if more than 60 days since last test of the water source. Additional samples shall be collected at intervals of no less than 18 hours and at least monthly (as defined on the most recent LGMA GAP metrics) during use. For wells and municipal water sources, if generic *E. coli* levels are within the acceptance criteria for five consecutive samples, the sampling frequency may be decreased to once every six months unless there is a significant source or distribution change.

#### **Acceptance Criteria:**

**Single pass use:** Water must have non-detectable levels of *E. coli* or breakpoint disinfectant present at point of entry.

**Multi pass use:** US EPA MCLG for microbial quality (<2.2 MPN/100 ml). Free chlorine  $\geq 1$   $\leq 200$  ppm at point of use, or ORP  $\geq 650$   $\leq 950$  mV and pH between 6.5-7.5.

#### **Physical/Chemical Testing Target Variable:**

Water disinfectant (e.g. chlorine or other disinfectant compound).

#### **Testing Procedure:**

- Chemical reaction based colorimetric test, or
- Ion specific probe, or
- ORP, or
- Other as recommended by disinfectant supplier.

**Testing Frequency:**

Routine monitoring of the system since records show there is a very low degree of variation. Test shall be performed every time the harvest machine tank is refilled and/or after any work break.

**Remedial Actions:**

If any given sample exceeds the acceptance criteria, then the water shall not be used for this purpose unless appropriate disinfectants have been added or until remedial actions have been completed and generic *E. coli* levels are within acceptance criteria:

- Conduct a sanitary survey of water source and distribution system to determine if a contamination source is evident and can be eliminated. Eliminate identified contamination source(s).
- Retest the water at the same sampling point after conducting the sanitary survey and/or taking remedial actions to determine if it meets the outlined microbial acceptance criteria for this use.

For example, if a water sample for water used to clean food contact surfaces has detectable *E. coli*, stop using that water system, examine the distribution line and source inlet as described in Appendix A Sanitary Survey of the LGMA GAP Metrics and retest from the same point of use. Continue testing daily for 5 days at the point closest to use, and do not use the water system until consistently deliver water that is safe, sanitary water and of appropriate microbial quality for the intended use. If any of the five sample taken during the intensive sampling period after corrective actions have been taken have detectable *E. coli*, repeat remedial actions and do not use that system until the source of contamination can be corrected.

**Records:**

All test results and remedial actions shall be documented and available for verification for a period of two years.

## SOP 5.03

### WATER USAGE Water sampling

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 8

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/29/2011

**Purpose:**

To assure that water samplers are always taken following good sampling practices thus reducing the incidence of water contamination and/or false positive results introduced by the sampler.

**Concern:**

Obtaining false positive or unreal counts on microbial test results.

**Contaminants Introduction:**

Sampler not following good sampling practices or procedures which might lead to sample contamination.

**Preventative or corrective measures:**

Sampling procedure:

1. All samples must be taken by samplers trained in good sampling practices.
2. Water samples must be taken at the closest point of use as possible or reasonable.
3. Wear disposable gloves while taking the water sample and use a new pair of gloves each time a water sample is going to be taken.
4. Handle the sample container in a manner to prevent cross contamination with your own hands (do not touch the container opening at any time, open the container only when ready to take the sample, etc.).
5. Fill the container up to the fill line and close.
6. Place the container inside a cooler with blue ice to maintain cool temperature until the sample is tested.
7. The use of an approved laboratory (State Certified) is required.
8. Samples need to be tested within 24 hrs after collection to make the water test valid.



## SOP 5.04

### WATER USAGE Chemical Contamination of Water

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 7

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 06/10/2008

#### **Purpose:**

To insure that water used for irrigation, frost protection, as a carrier for pesticides and fertilizers, etc. is of adequate quality for its intended use, and steps are taken to minimize the risk of microbial contamination.

#### **Concern**

Water can be a carrier for chemicals including pesticides, fertilizers, etc.

#### **Contaminants Introduction:**

- a. Back flow from fertigation systems.
- b. Contaminated or not properly cleaned spray tanks/applicators tanks.

#### **Preventative or corrective measures:**

The possible causes of water contamination can be numerous. Addressing a specific cause will at times require creativity and flexibility. The following suggestions are offered as possible mitigation measures, knowing that in most cases our growers will be the best source for providing specific solutions (please keep in mind that the following corrective measures must be proven effective and provide an ongoing prevention).

For a well tainted by a chemical where the cause of contamination results from a single isolated atypical or non-repetitive event (i.e. back siphoned pesticide application applied through an irrigation system) pumping the well dry repetitively and testing for residual chemical is advised\*. The use of filtration (i.e. activated carbon) system that is designed to remove the chemical would provide added insurance. The use of chemigation, when using canals as the source of irrigation water, has to consider all mitigation and preventative measures also must be done as prescribed by local, state and federal laws, regulations and guidelines to avoid district canals contamination (mixtures must be made as far from the district canals as possible, etc.).

When using well water, fertigation systems must utilize check valves or other means to prevent back flow (i.e. Venturi systems). Position the check valves to prevent well contamination from agricultural chemicals introduced through the fertigation system. Check valves should be tested periodically to assure they are in working order. The addition, mixing and disposal of all agricultural chemicals must be done as prescribed by local, state and federal laws, regulations and guidelines. Care should be taken to avoid well contamination by any agricultural chemical (i.e. agricultural chemical additions, mixing, flushing spray tanks, cleaning equipment, etc.).

When using canal water, all measures available to prevent district canal contamination must be taken (. The addition, mixing and disposal of all agricultural chemicals must be done as prescribed by local, state and federal laws, regulations and guidelines. Care should be taken to avoid canal contamination by any agricultural chemical (i.e. agricultural chemical additions, mixing, flushing spray tanks, cleaning equipment, etc.).

A water sample should be taken and analyzed from all wells/canals suspected of being contaminated. Waters that may pose a risk of contaminating crops should not be used until the effectiveness of the mitigation measures have been verified through analyses.

\* Growers are encouraged to obtain the assistance of an environmental engineer or equivalent professional for specific advice.

## SOP 6.01

### PEST CONTROL MEASURES AND THE USE OF AGRICULTURAL CHEMICALS Pesticide Usage

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 9

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 12/03/2015

#### **Purpose:**

Boggiatto Produce encourages and promotes the use of integrated pest control procedures. Where crop protection requires the use of agricultural chemicals Boggiatto Produce Inc. requires strict adherence to all local, state and federal laws and regulations.

#### **Concern**

Crop exposure to illegal pesticide residues. Crops containing pesticides that exceed legal tolerances.

#### **Contaminants Introduction:**

There are three main causes for the presence of non-registered pesticides or unlawful levels of approved pesticides:

- a. Drift from adjacent fields.
- b. Contamination from improperly cleaned tanks.
- c. Application of non-registered product.

#### **Preventative or corrective measures:**

Implement effective program to insure products are not exposed to illegal pesticides and do not contain pesticide residues which exceed legal tolerances. This would include:

- a. Make sure that all applications are done when gusty winds are not present.
- b. All the equipment used during a chemical application must be tripled rinsed and rinse water shall be sprayed back on the fields.
- c. Adoption of integrated pest management programs and evaluation of alternative crop management practices in relation to pesticide usage.
- d. Only employees under the supervision of licensed or certified pest control operators meeting local regulatory requirements for registration, certification or licensing may apply pesticides.
- e. If farming equipment has water tanks installed, they must be maintained in a clean and tidy condition. Water tanks must be clean and flushed prior to using for agricultural purposes and whenever deemed necessary.

## SOP 6.02

### PEST CONTROL MEASURES AND THE USE OF AGRICULTURAL CHEMICALS Farming Equipment

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 8

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 12/03/2015

**Purpose:**

To insure that cross contamination from farming equipment is prevented or minimized.

**Concern:**

Cross contamination of fields due to improper driving and handling of farming equipment (Tractors, spray applicators, etc.)

**Contaminants Introduction:**

- a. Introduction of contaminants (physical, chemical or microbiological) on fields due to improper handling of farming equipment.

**Preventative or corrective measures:**

- a. Farming equipment must be maintained in proper working conditions.
- b. Avoid crossing from a compost applied field to a ready-to-harvest field.
- c. Avoid crossing flooded areas or areas where standing water from unknown source are deposited.
- d. If farming equipment has water tanks installed, they must be maintained in a clean and tidy condition. Water tanks must be clean and flushed prior to using for agricultural purposes and whenever deemed necessary.
- e. In the event of cross contamination, the equipment must be cleaned and sanitized prior to returning to any field and sanitation records must be kept on the NUOCA log (Notice of Unusual Occurrence and Corrective Action). Refer to SOP# 8.05 on the GHP manual for proper cleaning procedures.

## SOP 6.03

### PEST CONTROL MEASURES AND THE USE OF AGRICULTURAL CHEMICALS Chemical Storage Containers

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 7

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 06/10/2008

**Purpose:**

To insure that cross contamination from chemical containers holding fertilizers, pesticides, or any fluids is prevented or minimized.

**Concern:**

Contamination of fields or surrounding areas due to improper storage of containers, improper labeling of containers and/or faulty containers.

**Contaminants Introduction:**

- a. Introduction of contaminants due to improper storage of containers.
- b. Introduction of contaminants due to improper labeling of containers.
- c. Introduction of contaminants due to faulty or leaking containers.
- d. Contaminants introduction by hoses left unattended on the ground when not in use.

**Preventative or corrective measures:**

- a. All chemical containers shall be stored in an appropriate location with all lids and/or valves secured and closed when not in use.
- b. All chemical containers shall be labeled with the name of the contents.
- c. All chemical containers shall be repaired or replaced if leaking.
- d. All hoses must be kept in a tidy fashion and away from the ground when not in use (hose nozzle should not be left on the ground).

## SOP 7.01

### PESTICIDE MONITORING Pesticide Residue Sampling/Testing Protocol

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 7

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 06/10/2008

#### **Purpose:**

Random sampling for pesticide residue analysis on produce will be conducted prior to harvesting the crop. To verify the adherence to all local, state and federal laws and regulations.

#### **Concern**

The presence of unregistered chemicals and/or over tolerance of registered chemicals in the produce.

#### **Sampling Procedures:**

- a. All samples must be taken by trained personnel on Good Sampling Procedures to avoid cross contamination issues and false positive results.
- b. Random samples of produce will be taken and analyzed for pesticide residues prior to harvesting.
- c. Representative samples (pre-harvest) of product should be taken and submitted to a certified laboratory for pesticide residue analysis.
- d. Product should not be harvested until informed by laboratory that product is within U.S. legal pesticide tolerances

#### **Frequency:**

- a. As needed basis (concern of possible high levels or a need to meet out of country regulations)
- b. Customer request

#### **Preventative or corrective measures:**

If an over tolerance problem is found the following actions should be taken:

- a. The laboratory should re-test the sample to confirm their original results using sub-samples held by the laboratory.
- b. Another sample should be taken and submitted for pesticide residue analysis. Multiple samples may be taken from defined sectors of the field to indicate if a drift problem exists.

If an unregistered/illegal chemical problem is found the following actions should be taken:

- a. The laboratory should re-test the sample to confirm their original results using sub-samples held by the laboratory.
- b. If the presence of unregistered/illegal product residues is confirmed, the crop shall not be harvested until a negative sample can be shown.

**7.02**  
**MICROBIOLOGICAL MONITORING**  
**Produce Microbiological Sampling/Testing Protocol**

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 9

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/29/2011

**Purpose:**

Random sampling for pathogens on produce will be conducted prior to harvesting the crop when concern of possible contamination or the need to meet out of country regulations. To verify the adherence to all local, state and federal laws and regulations.

**Concern**

The presence of human pathogens on produce due to unexpected adjacent land use.

**Sampling Procedures:**

- a. All samples must be taken by trained personnel on Good Sampling Procedures to avoid cross contamination issues and the presence of false positive results.
- b. Random samples of produce will be taken and analyzed for human pathogens *E. coli* O157:H7 and *Salmonella* spp prior to harvesting.
- c. Representative samples (pre-harvest) of product should be taken and submitted to a certified laboratory for pesticide residue analysis.
- d. A composite sample of edible lettuce or leafy green leaves from plants still in the ground will be collected. This sample will be comprised of 9 samplings of at least 100 grams each and then made into a composite sample of at least 900 grams. This 900 gram composite sample will be taken 10 days or less before harvest, and shall be tested for *E. coli* O157:H7 and *Salmonella*. The block will be sampled using a "Z" pattern, which is typically used for pesticide residue analysis.
- e. Product should not be harvested until informed by laboratory that product is within tolerances

**Frequency:**

- a. As needed basis (concern of possible high levels or a need to meet out of country regulations)
- b. Per customer request

**Acceptance Criteria:**

- a. No confirmed positives for *E. coli* O157:H7 or *Salmonella* spp.

**Preventative or corrective measures:**

If an over tolerance problem is found **NO** test result will be submitted to any customer and the following corrective actions should be taken:

- c. The laboratory should re-test the sample to confirm their original results using sub-samples held by the laboratory.
- d. Another sample should be taken from the field of concern and submitted for human pathogen analysis. Multiple samples may be taken from defined sectors of the field to indicate if a drift problem exists due to unexpected adjacent land activity.

If the presence of human pathogens is confirmed, the crop shall not be harvested within a 10 ft radius from the sampling points. The rest of the field can be harvested by following special attention to the Good Harvesting Practices and only if subsequent samples come up negative.

## SOP 8.06

### WORKER PRACTICE/FIELD SANITATION Sanitary Facilities

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 10

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/29/2011

**Purpose:**

To insure all sanitary facilities are maintained in accordance with laws and regulations regarding worker practices, to address correct worker hygiene practices and reduce the potential for food contamination by an employee, either by his/her actions, hygiene, health, or habits.

**Concern:**

All persons working in direct contact with food, food-contact surfaces, and food-packaging materials must follow proper food-handling techniques and food protection principles. Failure to follow these principles may lead to contamination of food resulting in adulterated product and/or food borne illnesses.

**Contaminants Introduction:**

- a. Presence of unsuited toilet or hand washing facilities.
- b. Placement of toilet facilities in areas where they might cause contamination of the field.
- c. Lack of sanitary supplies.
- d. The use of leaking toilet facilities.
- e. Use of unclean toilet or hand washing facilities.
- f. The use of improper signage.

**Preventative or corrective measures:**

All reasonable measures should be taken to assure the following:

1. Consult your state regulations to determine the appropriate number of toilet facilities necessary.
2. Each toilet facility unit must be designed to lock from the inside.
3. Each toilet facility unit must have toilet paper in a proper holder.
4. Each toilet facility unit must be kept in sanitary condition and must be cleaned as required.
5. Each toilet facility unit is required to have a current cleaning checklist indicating the date the facility was serviced and supplies refilled.
6. Toilet facilities must be stationed no more than ¼ mile or within five minutes walking distance from employees in a location where minimal cross contamination may occur. Appropriately stocked toilet facilities must be within a 2mile radius for irrigators and ranch employees that have motor vehicles. Workers shall always have the opportunity to use the facilities when needed.
7. The hand washing facility must be kept outside the toilets and must have sufficient water of potable quality available for use. The water supply shall be labeled “*This Water for Hand Washing Purposes Only*” and “*Employees Must Wash Hands After Using Toilets*” in a language understood by all workers.
8. The hand-washing facility must have unscented soap in a proper dispenser.
9. The hand-washing facility must be supplied with single use disposable towels in a proper holder.
10. The hand-washing facility must have a receptacle capable of keeping the trash contained.
11. When the toilet facilities are serviced by septic trucks near the field, all steps shall be taken to prevent crop contamination in the event of leakage or a spill.

12. In the event of a major spill, all reasonable measures must be taken to eliminate or reduce the impact on the field and on produce (clean the area where the spill occurred, do not harvest any product that came in contact with the spill, leave buffer zones depending on particular situation, etc.)

**References:**

\* Occupational Safety and Health Act 29 CFR 1928.110, subpart I, subpart J.  
Code of Federal Regulations (CFR), 21 Part 110.5 Current Good Manufacturing Practice



## SOP 8.08

### WORKER PRACTICE Employee Drinking Water

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 8

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/29/2011

**Purpose:**

To prevent employees from getting sick because of the drinking water provided out in the field.

**Concern:**

Chemical or microbiological contamination of drinking water that can injure or cause illness to field employees.

**Contaminants introduction:**

- a. Using non-potable water.
- b. Using dirty drinking water containers
- c. Getting water from an unknown source.

**Preventative or corrective measures:**

- a. Potable water must be available to all employees during working hours in accordance with local, state, or federal regulation.
- b. Drinking water containers must be cleaned on a regular basis and anytime they are considered to be tainted or contaminated.
- c. Potable water must be supplied only from approved sources.

## SOP 8.09

### WORKER PRACTICE/FIELD SANITATION Farming Equipment Storage

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 9

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 12/03/2015

**Purpose:**

To insure all farming equipment is stored in the safest and most secured area possible.

**Concern:**

Unauthorized personnel tampering with farming equipment.

**Contaminants Introduction:**

- a. Introduction of any physical, chemical or microbiological contaminants in spray tanks or other farming equipment.

**Preventative or corrective measures:**

- a. Farming equipment must be stored in designated areas by the grower or supervisors.
- b. If tampering is discovered during the daily harvest assessment, foremen have to inform the Food Safety Coordinator and do not harvest until an appropriate assessments has been performed and the incident have been corrected and cleared by key personnel.
- c. All remedial actions performed shall be documented on the daily harvest assessment and records must be kept for a minimum of two years.
- d. Farming equipment storage and/or staging areas must be maintained in a clean and tidy fashion. Record on a NUOCA Log if cleaning of the area must be done prior to storing the equipment.

## SOP 8.15

### WORKER PRACTICE Animal Intrusion Risk Classification

First approval by: JOSE LUIS GARCIA-CAÑEDO

Revision No.: 2

Second approval by: JEFF HITCHCOCK

Effective Date: 02/01/2013

#### **Purpose:**

To define the level of animal intrusion in a field to determine corrective actions needed.

#### **Risk level**

##### **LOW**

1. Any animal tracks or evidence of rodents that did or did not enter the field. Entry can be checked and cleared of any possible issues resulting in some product loss if necessary.
2. Excluding wild pigs, animal tracks leading into a field that has not been planted or its at immature plant stage. Immature means that the area around the tracks can be easily reviewed and verified as lacking any fecal deposits.
3. Single or small flocks of birds are present, but do not produce visual damage.
4. Corrective actions are not required to be documented or recorded.

##### **MEDIUM**

1. There is visual evidence of crop contamination or destruction by animals that is easily identifiable. The visual evidence is not limited to the occasional plant and will need concentrated care to determine the extent of the damage during harvest.
2. Bird activity resulting in continuous damage to the crop will require active concentration by the harvest crew to identify the contaminated product.
3. Any animal intrusion resulting in fecal contamination.
4. Corrective action(s) taken must be documented

##### **High**

1. The damage or intrusion is so extensive that an appropriate buffer zone cannot be established by the Food Safety Coordinator or food safety personnel.
2. A high risk field must be abandoned when the determination is made by the Food Safety Coordinator or food safety personnel.
3. A medium risk classification can be elevated to high risk classification as the field is harvested.
4. Once defined as a high risk, no efforts or mitigating factors may be taken to lower the classification to medium risk.
5. Detailed records classifying a field as high risk must be kept for two years.

## SOP 9.01

### SUPPLIER APPROVAL & MONITORING

#### Supplier Approval and decertification

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 1

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 03/14/2012

**Purpose:**

Assure that all of our products and service suppliers are following proper food safety programs of their own.

**Concern:**

Suppliers of products (i.e. out side produce fields purchases, packaging, chemicals, etc.) and/or services (i.e. janitorial supplies, pest control services, etc.) that may have impact on our food safety systems. Impacts can be introduced through physical, chemical or microbiological contaminants due to suppliers' lack of compliance with Good Manufacturing Practices and we need to be assured that they are Food Safety oriented and in compliance with local, state, and/or federal regulations.

**Approval procedure**

Supplier approval is based on risk assessment. The application and relevance of the requirements for each supplier will vary between products and services supplied. Suppliers will be asked for the following documentation:

1. Letter of Guarantee. This stipulates minimum requirements (signed).
2. Contract.
3. Copy of third party audit (if applicable)
4. Evidence of HACCP plan verification (if applicable)

**Preventative or corrective measures:**

Suppliers must submit the required documentation at the beginning of each season. Failure by a supplier to provide required documentation will trigger a search for a new supplier for the product or service in question.

## SOP 9.02

### **CORRECTIVE ACTION PLAN** **Corrective action plan record keeping and** **prevention of re-occurrences**

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 2

**Second approval by:** JEFF HITCHCOCK

**Effective Date:** 02/01/2014

#### **Purpose:**

To assure that in the event of a deviation from procedures or a deficiency found during an inspection, a corrective action has been implemented and recorded in order to prevent the incident from reoccurring.

#### **Concern:**

Verification that a corrective action has been implemented in the event of deviations or deficiencies found during inspection.

#### **Record keeping**

1. Any issue(s) found during inspections shall be addressed as soon as the situation allows. All actions taken to correct, minimize and prevent the incident from reoccurring must be recorded using the Notice of Unusual Occurrences and Corrective Action log from this manual.
2. Records of all corrective actions taken must be kept in Boggiatto Produce Inc. office or in the grower office depending on the situation for a minimum of two years.

#### **Preventative or corrective measures:**

All past corrective and preventative actions will be used in future food safety trainings.

## SOP 10.01

### Food Defense

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 1

**Second approval by:** MICHAEL BOGGIATTO

**Effective Date:** 01/07/2015

#### **Purpose:**

Boggiatto Produce Inc. has a basic food defense program in place that covers various security measures with an aim of preventing and deterring deliberate tampering with food items produced on site.

This SOP provides an overview of the company food defense program. The term food defense is also known as food security or bio-security.

#### **Concern:**

Physical security (growing operations, storage areas, equipment yards and associated offices), incoming material security, employee security, visitor/contractor security, and data security

#### **Procedure(s):**

### **1.0 Physical Security Overview (Growing Areas, Equipment Yards, Outside Storage, Storage Rooms, Maintenance Facilities & Offices).**

#### 1.1 Growing areas:-

1.1.1 Areas are located on maps, each area having a specific block code for easy identification.

1.1.4 Packaging materials, sanitizers and other materials can be left overnight in the growing areas only in designated areas as established by the growers or field supervisors.

1.1.5 Equipment (e.g. tractors, harvesting rigs, utensils and tables), can be left overnight in the growing areas only in designated areas as established by the growers or field supervisors.

#### 1.2 Spruce Farms LLC. equipment yard and packaging materials storage areas:-

1.2.1 The yard is surrounded by a security fence on at least 6 feet high.

1.2.3 Packaging material storage area is located 9 feet away from the fence line in order to avoid any tampering through the fence.

1.2.4 All outside stored packaging in the yard is fully shrouded and stored in a manner to protect from deliberate overhead contamination.

#### 1.3 Farm buildings, e.g. storage rooms (packaging, harvesting materials, chemicals, fertilizers) maintenance buildings and offices:-

1.3.1 All building doors, goods and windows are fitted with locks.

1.3.2 Buildings are secure at night and whenever not in use.

1.3.3 Sensitive areas (e.g. chemical storage area) are also kept locked at all times.

### **2.0 Incoming Material Security**

2.1 All incoming materials (seeds, transplants, rootstocks, packaging, chemicals, fertilizers etc.) should arrive from approved suppliers and have a PO number.

2.2 Incoming QA checks for security issues, looking for any signs of tampering (e.g. opened containers, shrink wrap issues, any tell-tale powder deposits, any issues with the truck locks/seals) and

any anomalies with the documentation.

2.3 Stock /inventory records are maintained.

2.3.1 For long-term storage packaging, there are physical inventory checks on a monthly basis. These inventories can be reconciled (e.g. inventory check versus incoming receipts versus usage records) when there is an issue.

### **3.0 Employee Security**

3.1 Employee training.

3.3.1 Employees are trained regarding site security in their orientation training and also as part of the ongoing training program (at least annually). The training includes:-

- Growing area, farm yard, storage and office physical security policies
- Car parking rules
- Sensitive areas in the operation (e.g. chemical storage)
- Incoming materials issues
- Visitor and subcontractor security policy
- Empowerment to report any suspicious issues and activities

3.3.2 The training records are maintained on file. Training records contain:-

- The title of the training
- A short description of the training and referral to the source materials used
- Who gave the training
- Who attended
- Date and time
- Where relevant, certificates or other forms of individual records are also stored in individual personnel files.

3.2 The Food Safety Coordinator is requested to stay current of food defense developments within the industry, to attend external training as needed.

### **4.0 Visitor/Contractor Security**

4.1 All visitors/contractors have to report to the harvest crew foremen initially and sign in the visitors log book.

4.1.1 The visitors/contractors log records the information:-

- Date
- Visitor/contractor name
- Visitor/contractor company
- Purpose of their visit
- Who they are visiting
- Visitor signature
- Time in
- Time out

4.2 When visitors/contractors are signing in the log book there is a short listing of the following rules for them to read through:-

4.2.1 Food safety rules, especially:-

- Following all GAP food hygiene rules as required by signs and the visitor/contractors host
- Hand washing rules
- Wearing appropriate garments
- Eating, drinking and smoking on site (growing areas, yards and storage areas)

- Handling food and touching food contact surfaces is prohibited unless permitted by the visitor host.
- 4.2.2 Food defense rules, especially:-
- Visitors/contractors are required to be accompanied by a member of staff at all times when touring the production and storage areas
  - No personal bags, cameras or other materials are allowed into the operational areas (growing areas, storage areas, etc.) without management permission
- 4.2.3 Personnel safety rules, especially:
- Visitors/contractors are required to be accompanied by a member of staff at all times when touring the production and storage areas
  - Attention moving vehicle hazards
  - Attention to hazardous production equipment
  - Attention to hazardous chemicals
  - Attention to slippery conditions in wet production and storage areas
  - Attention to high level storage
- 4.3 The visitors/contractors when signing the logbook are stating that they agree to follow by these rules stated above in 4.3.
- 4.4 Visitors/contractors are not allowed to be in the production and storage areas by themselves, unless specific management permission is granted.
- 4.5 Visitors and contractors are not allowed to take any samples or equipment away without written authorization.
- 4.6 Visitors and contractors are not allowed to take photographs without written permission of their host (and also permission to take a glass lens camera into the production (growing areas) and storage areas).

## **5.0 Data Security**

- 5.1 All computer data is password protected. Passwords are rotated regularly.
- 5.2 All paper documents are stored in locked offices and/or locked filing cabinets when not in use.

## **6.0 Recording Security Issues**

- 6.1 Any security issues are recorded using unusual occurrences form.

## **7.0 Management Review**

- 7.1 In view of the serious nature of food defense issues and the fact that they should be a rare occurrence, any food defense issues are reviewed at the next convened food safety committee meeting in order to ensure that the corrective and preventive actions were adequate.



**SOP 10.2**  
**GENERAL HOUSEKEEPING.**  
**Growing Field Sanitation Program/Policies**

**First approval by:** JOSE LUIS GARCIA-CAÑEDO

**Revision No.:** 1

**Second approval by:** JEFF HITCHCOCK

**Effective Date:** 12/03/2015

**Purpose:**

Outline basic house keeping policies in order to assure that any risk of physical, chemical or microbiological contamination is eliminated, controlled or minimized.

**Concern:**

Physical, chemical or microbiological produce contamination.

**General policies:**

- Growing fields must be kept in a clean and tidy condition, avoid weeds growth and prevent the creation of wild life harborage areas.
- Maintain irrigation equipment (sprinkler pipes, lay flat hoses, etc.) off the ground.
- Contain as much as possible animal intrusion (domestic or wild animal intrusion). In the event of significant animal intrusion, follow procedures as prescribed on SOP 8.15 of this manual.
- In field storage and staging areas must be maintained clean, weeds must be eliminated or controlled. If deemed needed, pest control program must be established according to customer requirements.
- Chemical containers must be maintained labeled and labels must be readable.
- Foreign material i.e. glass, brittle plastic, must be controlled. All farming equipment must be accounted for lights, mirrors and plastic covers found on equipment.

**Preventative or corrective measures:**

In the event of an incident, address as necessary, records of the incident and corrective actions taken to eliminate or minimize its impact must be kept on the NUOCA Log. Records must be kept for at least 2 years.

# **MONITORING LOGS**

**BOGGIATTO PRODUCE INC.**

**NUOCA LOG (Notice of Unusual Occurrence and Corrective Action)**

Date:

Time of Occurrence:

Description of Problem or Occurrence:

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Corrective Action:

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Reported By: \_\_\_\_\_

Supervisor on Duty: \_\_\_\_\_



**CANAL INSPECTION AND MAINTENANCE LOG**  
**REGISTRO DE INSPECCION Y MANTENIMIENTO DE CANALES**

Standard Operating Procedure: Visual inspection of canals looking for any type of hazard that might represent water contamination risk. This needs to be done twice a month. Inspect the surrounding area near the canal looking for dead animal carcasses, weed growth, trash, oil leaks and/or any other type of contamination risk. If the area is in good condition, check mark OK. If it is not in good condition, mark with an X and write corrective actions taken on the bottom of this checklist.

Procedimiento de Operación Estandar: Durante la inspección visual de canales debe buscar cualquier cosa que pueda ser considerada como riesgo potencial de contaminación del agua y se debe realizar dos veces por mes. Durante la inspección verifique que no hay animales muertos, crecimiento excesivo de hiervas, basura tirada alrededor del area inspeccionada, derrames de aceite o cualquier otro tipo de contaminación. Si el area se encuentra en buenas condiciones marque OK. Si no, marque con una X y describa las acciones correctivas en la parte de abajo de esta lista de verificación.

Grower: \_\_\_\_\_

Person assessing evaluation/verification: \_\_\_\_\_ 20 \_\_\_\_\_ Season

Month	CANAL ID / ID DE CANALES				
Ranch	Date	Canal #	Canal #	Canal #	Canal #
	1				
	2				
	1				
	2				
	1				
	2				
	1				
	2				
	1				
	2				

Corrective actions sheet/Sección de acciones correctivas:

Date/Action Taken:

\_\_\_\_\_

Date/Action Taken:

\_\_\_\_\_

Date/Action Taken:

\_\_\_\_\_

Date/Action Taken:

\_\_\_\_\_

Date/action Taken:

\_\_\_\_\_

Comments:



**WELL INSPECTION AND MAINTENANCE LOG  
REGISTRO DE INSPECCION Y MANTENIMIENTO DE POZOS**

SOP: On a monthly basis a visual inspection of wells looking for any type of hazard representing a water contamination risk is required. Inspect the surrounding area of the well looking for dead animals carcasses, weed growth, trash, oil leaks or any other type of contamination risk. If the area is in good condition, check mark OK. If it is not in good condition, mark with an X and write corrective actions taken on the bottom of this checklist. If chemicals are used, check Yes, or No, and write the chemical name.

POS: Se requiere que durante la inspección visual de pozos se busque cualquier cosa que pueda ser considerada como riesgo potencial de contaminación del agua se requiere que se realice una inspección una vez al mes. Durante la inspección verifique que no hay animales muertos, crecimiento excesivo de hierbas, basura tirada alrededor del área inspeccionada, derrames de aceite o cualquier otro tipo de contaminación. Si el área se encuentra en buenas condiciones marque OK. Si no, marque con una X y describa las acciones correctivas en la parte de abajo de esta lista de verificación. Si aplicaron químicos, marque Y o N y escriba el nombre del producto.

**Grower:** \_\_\_\_\_ **20** **Season** \_\_\_\_\_

**Person assessing evaluation/verification:** \_\_\_\_\_

MONTH	WELL ID/ID DEL POZO				
	Well #	Well #	Well #	Well #	Well #
<b>December</b>					
<b>January</b>					
<b>February</b>					
<b>March</b>					
<b>April</b>					
<b>May</b>					
<b>June</b>					
<b>July</b>					
<b>August</b>					
<b>September</b>					
<b>October</b>					
<b>November</b>					

**Corrective actions sheet/Sección de acciones correctivas:**

**December:** \_\_\_\_\_ Chemicals?   Y  N  
 \_\_\_\_\_ ChemName \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**January:** \_\_\_\_\_ Chemicals?   Y  N  
 \_\_\_\_\_ ChemName \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**February:** \_\_\_\_\_ Chemicals?   Y  N  
 \_\_\_\_\_ ChemName \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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**March:** \_\_\_\_\_ Chemicals? \_\_Y\_\_N  
\_\_\_\_\_ ChemName \_\_\_\_\_

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**April:** \_\_\_\_\_ Chemicals? \_\_Y\_\_N  
\_\_\_\_\_ ChemName \_\_\_\_\_

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**May:** \_\_\_\_\_ Chemicals? \_\_Y\_\_N  
\_\_\_\_\_ ChemName \_\_\_\_\_

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**June:** \_\_\_\_\_ Chemicals? \_\_Y\_\_N  
\_\_\_\_\_ ChemName \_\_\_\_\_

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**July:** \_\_\_\_\_ Chemicals? \_\_Y\_\_N  
\_\_\_\_\_ ChemName \_\_\_\_\_

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**August:** \_\_\_\_\_ Chemicals? \_\_Y\_\_N  
\_\_\_\_\_ ChemName \_\_\_\_\_

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**September:** \_\_\_\_\_ Chemicals? \_\_Y\_\_N  
\_\_\_\_\_ ChemName \_\_\_\_\_

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**October:** \_\_\_\_\_ Chemicals? \_\_Y\_\_N  
\_\_\_\_\_ ChemName \_\_\_\_\_

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**November:** \_\_\_\_\_ Chemicals? \_\_Y\_\_N  
\_\_\_\_\_ ChemName \_\_\_\_\_

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**Comments:**



**RESERVOIR INSPECTION AND MAINTENANCE LOG**  
**REGISTRO DE INSPECCION Y MANTENIMIENTO DE RESERVORIOS**

Standard Operating Procedure: Visual inspection of reservoirs looking for any type of hazard that might represent water contamination risk. This needs to be done twice a month. Inspect the surrounding area near the reservoir looking for dead animal carcasses, weed growth, trash, oil leaks and/or any other type of contamination risk. If the area is in good condition, check mark OK. If it is not in good condition, mark with an X and write corrective actions taken on the bottom of this checklist.

Procedimiento de Operación Estandar: Durante la inspección visual de reservorios debe buscar cualquier cosa que pueda ser considerada como riesgo potencial de contaminación del agua y se debe realizar dos veces por mes. Durante la inspección verifique que no hay animales muertos, crecimiento excesivo de hiervas, basura tirada alrededor del area inspeccionada, derrames de aceite o cualquier otro tipo de contaminación. Si el area se encuentra en buenas condiciones marque OK. Si no, marque con una X y describa las acciones correctivas en la parte de abajo de esta lista de verificación.

**Grower:** \_\_\_\_\_ **20** **Season** \_\_\_\_\_

**Person assessing evaluation/verification:** \_\_\_\_\_

Month	RESERVOIR ID / ID DE RESERVORIOS				
Ranch	Date	Reservoir #	Reservoir #	Reservoir #	Reservoir #
	1				
	2				
	1				
	2				
	1				
	2				
	1				
	2				
	1				
	2				

Corrective actions sheet/Sección de acciones correctivas:

Date/Action Taken:

\_\_\_\_\_

Date/Action Taken:

\_\_\_\_\_

Date/Action Taken:

\_\_\_\_\_

Date/Action Taken:

\_\_\_\_\_

Date/action Taken:

\_\_\_\_\_

Comments:

\_\_\_\_\_



**Good Agricultural Practices  
Pre-Season Food Safety Inspection**

Grower	_____
Ranch	_____
Lot(s)	_____
Commodity(ies)	_____
Date of Inspection	_____
Name of Inspector	_____

<b>Water</b>		
1	What is/are the sources of water for this ranch? Check all that apply	
a	Well	
b	Surface/canal/reservoir	
c	Municipal Water Supply	
d	Other (explain)	
2	Are all sources of water and distribution systems clearly identified on the ranch map?	
3	Was a sanitary survey completed for each water source?	
4	Will all the water sources be tested for generic <i>E.coli</i> prior to plant germination?	
<b>Soil Amendments</b>		
5	Is raw or partially composted animal manure used to supplement soil?	
6	Are any of the following compost materials used? (check all that apply)	
a	Composted animal manure or aged animal manure	
b	Physically heat treated compost	
c	Non-synthetic crop treatments (compost teas, fish emulsions, fish meal, blood meal, bio-fertilizer, etc.)	
d	If "yes" to any of the 3 items above, are the composting processes validated as per the LGMA?	
e	If "yes" to any of the 3 items above, has the LGMA application time period been followed?	
f	If "yes" to any of the 3 items above, are the required LGMA analysis on record?	
<b>Environmental Factors</b>		
7	Is there significant evidence of intrusion by animals in or around the growing area (animals present, animal tracks, feces/urine, etc.)?	
a	If yes, have you followed the procedures identified in the "Production Locations - Encroachment by Animals and Urban Settings" of the LGMA GAP metrics?	



8	Is there a history of flooding within the last 60 days?	
a	If flooding did occur within the last 60 days have you followed the procedures identified in the “flooding” section of the LGMA GAP metrics?	
9	Has the field being used for activities other than growing crops (hazardous activities including but not limited to CAFO, municipal waste, toxic waste, landfill, etc.) or as grazing land within the last 1 year)?	
a	If the field has been used for other activities rather than growing crops, have you followed management practices identified in sections related to environmental and land use of the LGMA GAP metrics?	
10	Is there any evidence of downed fencing?	
a	If yes, what remedial action was taken?	
11	Are any of the following LGMA Adjacent Land Use issues present?	
a	Compost operations within 400’ of the crop edge?	
b	CAFO within 400’ of the crop edge?	
c	Storage of non-synthetic soil amendments within 400’ of the crop edge?	
d	Grazing lands or domestic animals within 30’ of the crop edge?	
e	Septic leach fields (home or other building) within 30’ of the crop edge?	
f	Well head within 200’ from untreated manure?	
g	Surface water protection buffer zone distances from untreated manure	
g1	100’ for sandy with a slope <6%?	
g2	200’ for loamy or clay soil with a slope <6%?	
g3	300’ for all slopes >6%?	
H	Natural vegetation, riparian areas or other adjacent land uses that pose a food safety risk to crops?	
12	If any of the above is identified, have they been addressed in accordance with the LGMA GAP metrics?	
<b>Field Employee Practices &amp; Hygiene</b>		
13	Is there any evidence that worker hygiene rules have been violated?	
a	If yes, what remedial action was taken?	
<b>Field Sanitation</b>		
14	Is there a specific individual responsible for identifying and documenting potential contamination risks during the growing and harvesting of crops?	

*All remedial action must be documented and records kept for two years.*

Add comments for each section as needed.

WATER

SOIL AMENDMENTS

ENVIRONMENTAL FACTORS

FIELD EMPLOYEE PRACTICES &HYGIENE

FIELD SANITATION



**Pre-Harvest Assessment**

Date: \_\_\_\_\_  
Grower: \_\_\_\_\_  
Field: \_\_\_\_\_  
Lot: \_\_\_\_\_  
Product: \_\_\_\_\_  
Estimated Harvest Date: \_\_\_\_\_

**This Environmental assessment is intended to identify any issues related to the produce lot, adjacent land uses, significant animal intrusion or any unexpected event (see Table 5) that might impact produce safety.**

*Evaluation of Potential Contamination Risks:*

**Circle “Yes” or “No”**

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**1. Assessment of Production Lot Concerning significant Animal intrusion.**

Does the product lot show significant evidence of intrusion and/or feces of animals? YES NO

*If YES, follow procedures in the “Production Locations-Encroachment by Animals and Urban Setting.” All remedial action must be documented and records kept for two years.*

---

**2. Assessment of Production Lot and Adjacent Land Use.**

Are there any sources of contamination from compost operation (~400ft), CAFO’s (~400ft), grazing/open range areas (~30ft), homes (~30ft), non-synthetic soil amendment (~400ft), surface water (~100ft) (see Table 6 for further detail), municipal or toxic waste facilities, landfills on land and/or waterways adjacent to the production lot or any unexpected adjacent land activity that will pose risk to food safety within the last 1 year? YES NO

*If YES, follow management practices identified in the sections related to environmental and land use concerns. All remedial action must be documented and records kept for two years.*

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**3. Assessment of Flooding.**

Does the production lot show evidence of flooding currently or within the last 60 days? YES NO

*If YES, follow the procedures identified in (Table 4) Flooding.*

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**4. Assessment of Water Source and Distribution System.**

Does production lot’s water distribution system show evidence of possible contamination? YES NO

*If YES, follow management practices identified in the section related to water. All remedial action must be documented and records kept for two years.*

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**5. Field Employee Practices and Hygiene.**

Is there any evidence that worker hygiene rules have been violated? YES NO

*If YES, remedial action must be taken and must be documented and records kept for two years.*

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**6. Field Sanitation**

Is there evidence of contamination from portable toilets or garbage in the production lot? YES NO

*If YES, remedial action must be taken and must be documented and records kept for two years*

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**Person assessing Evaluation/Verification** \_\_\_\_\_

\*If the answer is “YES” to any of the above questions, the lot shall not be harvested until appropriate remedial action has been taken and documented. Remedial action can be found in the most current issue of the “Commodity Specific Food Safety Guidelines For The Production And Harvest Of Lettuce And Leafy Greens”.

**BOGGIATTO PRODUCE INC.**

**Employee Education and Training Log**

Date of Training: Trainer: The following employees were present:	Topic: Materials:
1	19
2	20
3	21
4	22
6	23
6	24
7	25
8	26
9	27
10	28
11	29
12	30
13	31
14	32
15	33
16	34
17	35
18	36