CALIFORNIA STRAWBERRY COMMISSION FOOD SAFETY PROGRAM

Good Agricultural Practices: Growing the World's Safest Strawberries
Consumers trust their retailers to provide safe, quality food products. Retailers trust their supply sources. It falls to the grower to follow food safety practices that may help reduce the risk of contamination before produce leaves the field. The California Strawberry Commission's Food Safety Program (FSP) is designed to help you examine and improve safety practices, and meet the generally accepted standards of Good Agricultural Practices (GAPs).

The purpose of the Commission's SFSP is to further enhance the industry's commitment to produce strawberries in a safe and responsible manner and provide the consumer with the highest level of confidence that the strawberries they purchase are safe to eat.

The Basic Principles of Good Agricultural Practices (GAPs):

1. **The best way to prevent corrective action by state and federal governments is to prevent microbial contamination of fresh strawberries.**

2. **Use GAPs.** To minimize microbial food safety hazards in strawberries**,** growers should use the GAPs outlined in this program and apply them to the areas of their operation over which they have control, such as sources of water, field sanitation, worker hygiene standards, etc. Managing and predicting potential sources of contamination is an essential step in producing a safe strawberry.

3. **Anything that comes into contact with strawberries has the potential to infect.** The source and quality of each contact dictates the potential for contamination. Water (used for irrigation and pesticide mixing) is a primary source of contamination.

4. **All pesticides must only be used in strict accordance with manufacturer recommendations.** Pesticides must comply with state, federal and local ordinances.

5. **Non-composted manure is a source of human pathogens and should not be used in strawberry fields.** Any practice using manure and/or compost should be closely managed.

6. **Worker Health and Hygiene practices play a critical role in minimizing potential contamination.** The availability of clean toilet facilities, hand washing stations, and keeping track of employee general health are all part of good employee hygiene practices.

7. **A food safety program and trace-back practices establish accountability.** The ability to trace back product from the consumer to the retailer to the shipment to the farm to the harvester is essential for quickly isolating the problem area and protecting the entire crop and industry. Documentation must be kept to help prove proper attention has been paid to risk prevention.

Note: It is recommended that documents be kept readily accessible and organized, including receipts, memos, inspection and laboratory reports, and other written information that may be requested by an investigator. For more information about the Food Safety Program, call the California Strawberry Commission at (831) 724-1301.

CALIFORNIA STRAWBERRY COMMISSION FOOD SAFETY PROGRAM

Importance of a Food Safety Program
Fresh and processed food products are coming under increasing scrutiny by government agencies. The strawberry industry, in a cooperative effort with federal, state and local regulatory agencies, has developed this voluntary Food Safety Program to comply with California state regulatory standards. Recommended forms are included as samples and have not been approved for use by state or federal regulatory agencies. You may use them as they are, modify them to meet your needs or create new versions as necessary. In all cases, you should have your forms reviewed by technical and/or legal experts before using them to ensure that they meet federal, state and local requirements.

This program includes food safety practice recommendations for each segment of the growing cycle, beginning with soil and water testing, field sanitation compliance, worker health and hygiene, pesticide use documentation, and product trace-back and food security protocols. The guidelines and worksheets may be used to document information concerning production, harvesting, field management, handling and distribution practices and the steps taken toward providing a safe product to consumers.

NOTICE OF DISCLAIMER

The information contained in this voluntary Food Safety Program was compiled by the California Strawberry Commission from a variety of sources for use by California strawberry growers, shippers and processors as defined in Sections 77421, 77422, and 77425 of the California Food and Agricultural Code. Every effort has been made to provide the most accurate and current information available. However, **the Commission makes no warranties regarding the information contained in the guideline** or the applicability of such information to a particular growing or handling operation.

The Commission specifically disclaims any and all warranties, expressed or implied, including but not limited to implied warranties of merchantability and fitness for a particular use. The Commission does not guarantee that the information contained in the materials or the data upon which the information was based will be error-free or that defects will be corrected. This guideline is not intended as legal advice and citations to statutes and regulations are for informational purposes only. Nothing in this guideline is intended to replace a grower, shipper or processor's own technical experts or legal advisors, and the Commission encourages growers, shippers and processors to consult such professionals before implementing a Food Safety Program.

This guideline is not intended, nor should it be interpreted, to create an industry-wide standard against which growers, shippers or processors will be measured, regardless of whether they choose to follow any or all of the suggestions in the guideline. This list is provided for convenient reference and as such does not imply discrimination towards or endorsement of any particular company or individual. The Commission may update the materials in this guideline on occasion, but does not accept or undertake any responsibility to update the information provided in this guideline on a regular basis or at all.

Under no circumstances, including, but not limited to gross negligence, shall the Commission be liable for any direct, indirect, incidental, special or consequential damages that result from the use of, or the inability to use, the information in this voluntary Food Safety Program. Persons utilizing this guideline, with or without permission, do so only upon the condition that their use constitutes specific knowledge and agreement to the foregoing and agreement that the Commission is not liable for any damages resulting from its use.

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GROWER GUIDELINES:
CONTACT FORM AND IMPLEMENTATION CHECKLIST

Provide information for each grower and ranch location within the operation.
Suggested practice: Send a copy of this form to your shipper and/or processor for their records.

Name of Farming Operation: _____

Name of Owner/Operator: _____

Mailing Address: _____

Phone: _____ Fax: _____

Ranch Location: _____

Food Safety Supervisor: _____

Supervisor Alternate: _____

Date Form Completed: _____

Question	Check if "Yes"	Description
Is an individual Food Safety Program in place?		
Is a Food Safety Supervisor designated?		
Is an Employee Training Program in place?		
Is the shipper/processor's trace-back policy being implemented?		
Is water source and safety being documented?		
Is a mock-recall performed? How frequently?		
Is soil history being documented?		
Is field sanitation policy instated and documented?		
Is worker hygiene policy instated and documented?		
Is pesticide use documented?		
Is a packaging storage policy in place?		

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: DAILY CHECKLIST

Name of Farming Operation: _____

Ranch Location: _____

Date: _____

Daily Action		
Clean and rinse hand washing and drinking water containers.	Yes	No
Change hand washing and drinking water.	Yes	No
Provide toilet paper, soap, single-use paper towels and drinking water cups. See page 32 for a checklist.	Yes	No
Provide toilet and hand washing facilities that meet required standards for quantity, cleanliness and accessibility. See page 26 for a checklist.	Yes	No
Remind workers of proper hygiene practices and observe that practices are followed.	Yes	No
Have pesticide use records and posted warning signs as required. See page 36 for a checklist.	Yes	No
Maintain detailed trace-back procedures.	Yes	No
Check pest (insects, birds and rodents) control program for packaging storage and cooler facility.	Yes	No
Make sure that packaging is properly stored in a safe, secure location.	Yes	No
Shippers: Inspect trailers/cargo containers for cleanliness prior to loading.	Yes	No

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES:
WEEKLY, MONTHLY AND QUARTERLY CHECKLISTS

Name of Farming Operation: _____

Ranch Location: _____

Date: _____

Note: This list does not include the ongoing pesticide-specific checklist growers should update continuously. A sample copy of this form is located on page 36.

Weekly Checklist		
Document the number of workers, toilets and hand washing facilities provided, and maintenance of facilities.	Yes	No
Shippers: Document sanitation measures and maintenance of facility, refrigeration units, and water sources in cooler facility.	Yes	No

Monthly Checklist		
Conduct tailgate meetings on worker safety and proper hygiene practices.	Yes	No
Verify documentation of field worker safety training.	Yes	No
Submit monthly pesticide use records to the County Agricultural Commissioner's office.	Yes	No

Quarterly Checklist		
Test open water sources (reservoirs, canals, uncapped wells, etc.) in the field for fecal coliform/*E. coli* and maintain copies of water quality reports.	Yes	No

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: ANNUAL CHECKLIST

Name of Farming Operation: _____

Ranch Location: _____

Date: _____

Annual Checklist		
Review individual food safety program.	Yes	No
Designate an official quality assurance supervisor(s) and alternate(s).	Yes	No
Test closed water sources (capped wells) for fecal coliform/*E. coli* or obtain copy of municipality/district water quality report. Maintain copies of these reports.	Yes	No
Document soil type, production history, previous land uses, soil testing conducted and organic amendments added.	Yes	No
Obtain pesticide use permit, private applicator certification, etc.	Yes	No
Review written training program for general sanitation, personal hygiene practices, pesticide safety training (see pages 37-45 for an example) and good agricultural practices on the farm.	Yes	No
Shippers: Review written policies and procedures on packaging storage and unsatisfactory trailers/units.	Yes	No
Shippers: Review written training program for general sanitation and personal hygiene practices in the cooler.	Yes	No

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: EMPLOYEE WRITTEN TRAINING CHECKLIST

The establishment of a written training program for employees that addresses important health and safety issues may help reduce the risk of microbial contamination. Documentation of employee training is necessary to verify that federal, state and local requirements for worker safety training are met. Here is a checklist to document a training program.

Name of Farming Operation: _____

Owner/Operator Name: _____

Name of Trainer(s): _____

Trainer Affiliation: _____

Date: _____

Topics discussed: Check those that apply.

□ Worker Health and Hygiene □ Trace-Back □ Field Sanitation

□ Pesticide Use
(See checklist on page 44 for pesticide training requirements)

□ General Sanitation □ Other: _____

List of Attendees

Name of Attendee	Signature of Attendee

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: SOIL

Know Your Soil
Document the soil type, production history, previous and adjacent land uses, soil testing and amendments to help identify potential microbiological risks. In your analysis, include:

Physical Description of Soil Type – sandy loam, clay, sandy clay loam, etc. Know your soil type and its drainage capabilities.

Production History – Years farmed in strawberries. If fewer than three (3) years, document previous crops or uses.

Previous Land Use – Record previous land uses, paying particular attention to landfill sites, livestock operations, etc.

Adjacent Land Use – Document and characterize adjacent land uses, especially livestock or poultry operations.

Soil Amendments – Document the use of organic amendments (compost, manure, properly composted manure, etc.). Include the source of the material (compost producer, feedlot, etc.), how much was used, when it was applied, how it was applied, and certification or test results for pathogen reduction (i.e. documentation of compliance with the California Integrated Waste Management Board curing process).

Pathogens such as *E. coli* and *Salmonella* can remain in manure slurry and soil for up to three months or more, depending on temperature and soil conditions. Other pathogens may survive in soil for even longer. Both organic and conventional growers should follow GAPs to reduce microbial risk due to manure applications, using only composted product. (See http://www.ams.usda.gov/nop for manure and compost standards under the National Organic Program.)

- Avoid storing or applying organic (compost, manure, etc.) amendments next to maturing crops because of possible drift. Store amendments as far away as possible from areas where strawberries are grown and harvested.

Use Only Treated or "Cured" Compost
Compost is defined as "The product of a managed process through which microorganisms break down plant and animal materials into more available forms suitable for application to the soil."
Source: National Organic Program Standards, 7CFR Section 205.203.

- Doing so will help minimize the potential for microbiological contamination.
    a. "Curing" means the final stages of the composting process that occur after compost has undergone pathogen reduction and after most of the readily metabolized material has been decomposed and stabilized.
    b. Use of raw animal manure or biosolids/sewage sludge that has not undergone a curing process is prohibited.
    c. Verify proper curing has taken place by asking the compost producer to provide documentation that shows a process to reduce pathogens has occurred.

SOIL

- Ask the composter for the percentage and physical make-up of composted material, and documentation showing that:

    a. Compost was produced through a process that combined plant and animal materials with an initial C:N ratio of between 25:1 and 40:1.
    b. Compost maintained temperatures between 131°F and 170°F for fifteen days or longer in a windrow composting system
    c. Compost windrows were turned a minimum of five times during composting.
    d. Microbiological test results showing *E. coli* <1,000 MPN/gram and *Salmonella* <3MPN/4 gram. (MPN = Most probable number)
    Source: National Organic Program Standards, 7CFR Section 205.203.
    e. Document the type of amendments used, the rates, and the dates and locations of the applications.

Soil Testing – Testing for microbial contaminates may be necessary where previous land uses could have potential for microbial risks, such as dairy operations, poultry farms or high uses of animal manure. Testing is suggested following flooding, leakage or unusual run-off from adjacent land uses. Growers using organic amendments should consider testing prior to planting. If you have concerns about possible microbiological soil contamination, consult your local University of California Cooperative Extension office (listing available on pages 88-89).

Reference:

- FDA Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables, Section III, Safe Fertilizer Practices: http://vm.cfsan.fda.gov/~dms/prodguid.html

GROWER GUIDELINES: SOIL AMENDMENT LOG

Name of Farming Operation: _____

Ranch Location: _____

Date: _____

Date Applied	Total Quantity	How Material Applied	Source of Material	Physical Make-Up and Percentage	Pathogen Reduction Test
					Yes__ No __
					Yes__ No __
					Yes__ No __
					Yes__ No __
					Yes__ No __
					Yes__ No __
					Yes__ No __
					Yes__ No __
					Yes__ No __
					Yes__ No __

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES:
PATHOGEN REDUCTION CHECKLIST FOR COMPOSTED SOIL

Name of Farming Operation: _____

Ranch Location: _____

Material Added: _____

Name of Compost Producer: _____

Contact Information for Compost Producer: _____

Date Applied: _____

Questions to ask the Compost Producer:

1. What is the percentage and physical make-up of the composted material?

_____

2. On what date did the compost process begin?

_____

3. Was the compost produced through a process that combined plant and animal materials with an initial C:N ratio of between 25:1 and 40:1?

_____

4. Were daily temperature readings registered of 131° Fahrenheit or higher?

_____

5. Did the compost remain at 131° Fahrenheit for 15 days or longer for windrow composting?

_____

6. Were windrows turned a minimum of five (5) times?

_____

7. Was microbiological testing conducted?

_____

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: COMPOST PROCESS CONTROL SHEET

Name of Farming Operation: _____

Ranch Location: _____

Date: _____ Pile #: _____

Materials: _____

Started on: _____ Inoculated: _____

Miscellaneous: _____

Date	Temp. °F	CO_2 Level	Date Turned	Moisture	Remarks

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: WATER

Water Supply
Water used in the production of strawberries can be a source of pathogens and a vehicle for spreading microbiological contaminants. Therefore, maintaining a safe water supply is a top priority. Municipal and potable well water provide the lowest risk for irrigation purposes.

Irrigation Water
- Identify and document your farm's primary and secondary sources of water. These include well water (capped or uncapped), open water (canal, reservoir, or collection pond) or municipal/district water systems. The form on page 18 provides a guide for you to follow.
- Identify and document your water delivery system (i.e. drip irrigation, flood, furrow or overhead sprinklers.)
- Identify the type of filtration system and where filters are located in the irrigation and water delivery system. Take samples of water after it has been filtered from an area still common to the field(s) serviced from the given water source.
    - Note: overhead sprinkler irrigation bypasses filtration system.
- Test water at the source as needed and keep results on file. A list of laboratories available for testing is on page 93. Closed, underground or capped well systems should be tested annually at the beginning of the season. Uncapped wells, open canals, reservoirs and collection ponds should be tested quarterly throughout the season. If you use water from a municipality or water district, obtain copies of water quality reports from the municipality or water district for your files (monthly, quarterly, or annually). These tasks are included in the Quarterly and Annual Checklists on pages 8-9.
- Microbiological testing of irrigation waters could include tests for fecal coliform (*E. coli)*. If wells or water sources are found contaminated with fecal coliform/*E.coli*, take corrective measures such as disinfecting, filtration or chlorinating of the well or water source. Then resample, and if the sample is found to be decontaminated, test the berries that had been irrigated with the infected water. On pages 19-21 you will find information on bacterial sampling, disinfecting procedures, and chlorine dosages.
- Microbial Risks in overhead irrigation are minimized by using potable water.

Pesticide and Foliar Feed Applications
Water used in mixing pesticide or foliar feed can be a source for microbial contamination.
- Use potable water for crop protection sprays.
- Document the water source and test water coming from that source.
- Rinse and clean tanks after each use following all applicable federal and state pesticide laws and regulations regarding equipment and rinse water.

Water Contamination Risk from Adjacent Land
Adjacent farming operations or other land use activities may pose a potential risk for run-off or leaching of microbiological contaminants.
- Identify and document nearby landfill sites, sewage treatment facilities, septic tanks, leach fields, potential run-off or leaching from adjacent farming operations, such as dairy farms or compost producers.
- Take corrective actions and document your corrective steps taken, such as construction of physical barriers (ditches, berms or fencing), disinfecting wells and use of a catch pond.

Recycled Water Usage
There is an increasing interest in the grower community to use recycled or tertiary treated water. This is due to the decreased cost and increased availability of recycled water throughout the state's growing districts. *Source: California Code of Regulations, Title 22, Water Recycling Criteria*.

WATER

Recycled water, also known as tertiary treated water, has been used in California for agricultural, turf and landscape irrigation for more than 20 years without incident. “Recycled Water” refers to domestic or municipal wastewater that has been treated and disinfected to meet the California Department of Health Service (CDHS) guidelines for irrigation of agricultural crops that are consumed without cooking.
The Environmental Protection Agency (EPA) has established a standard of less than 2.2 fecal coliform per 100 milliliters of water for recycled water used on non-processed fresh produce. Water containing that amount or less is considered free of pathogens for non-potable agricultural purposes.

Recycled water quality information is publicly available on a monthly basis and as an annual report from any local wastewater treatment facility/district providing recycled water.

- Obtain, review and maintain copies of monthly reports for your records if recycled water is used in your farming operations. Information and frequently asked questions on recycled water are located on page 23.
- Pay special attention to specific analysis information for *E. coli* as an indicator for fecal contamination.
- Take necessary steps to reduce or minimize direct recycled water contact with the edible portion of the crop. For instance, plug leaks in drip irrigation systems that could create puddles. Use an alternative water source (municipal or potable well water) for sprinkler irrigation during frost control and pesticide application.
- Document any actions you take, such as chlorination or filtration.

Provide Safe, Clean Drinking Water to All Employees
All drinking water must be potable. Provide single-use cups, rinse and clean water containers daily, change drinking water daily, and document the source of water. A sample Drinking Water checklist is available on page 33.

Reference:

- FDA Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables, Section II, Water: http://vm.cfsan.fda.gov/~dms/prodguid.html
- California Department of Industrial Relations, Title 8, Section 3457, Field Sanitation: http://www.dir.ca.gov/Title8/3457.html

GROWER GUIDELINES: WATER SOURCE CHECKLIST

Name of Farming Operation: _____

Ranch Location: _____ Year: _____

Water	Irrigation Water Primary Source	Irrigation Water Secondary Source	Pesticide and Foliar Application Source	Hand Washing Water Source	Drinking Water Source
Source: Capped Well ____ Uncapped Well ____	Yes/ No	Yes/ No	Yes/ No	Yes/ No	Yes/ No
Open Source: Canal, Reservoir, Pond, etc.	Yes/ No	Yes/ No	Yes/ No	Yes/ No	Yes/ No
Source: Municipal District Water	Yes/ No	Yes/ No	Yes/ No	Yes/ No	Yes/ No
Irrigation Water: Drip	Yes/ No	Yes/ No	Yes/ No	N/A	N/A
Irrigation System: Overhead	Yes/ No	Yes/ No	Yes/ No	N/A	N/A
Recycled Water	Yes/No	Yes/No	N/A	N/A	N/A

Describe the filtration system location (attach diagram):

_____

List Applicable Dates for Testing Water Quality in Each Category

Water	Irrigation Water Primary Source	Irrigation Water Secondary Source	Pesticide and Foliar Application Source	Hand Washing Water Source	Drinking Water Source
Capped Well Annual Test					
Uncapped Well: Canal, Reservoir, Pond, etc. Quarterly Test					
Municipal District Quality Report					
Corrective Action and Date Taken: Chlorinate, Disinfect, Filter, etc.					
List Potential Risks from Adjacent Land					

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: BACTERIAL SAMPLING

Bacterial Sampling Procedure

For individual wells, technical advice regarding the collection of bacteriological samples may be obtained from the local health departments or from the laboratories that will examine the sample. If no technical assistance is available, the following procedure can suffice.

A sterile sample bottle, preferably one provided by the laboratory, must be used. It is extremely important that nothing except the water to be analyzed come in contact with the inside of the bottle or the cap; the water must not be allowed to flow over an object or over the hands and into the bottle while it is being filled. If the water is collected from a sample tap, turn on the tap and allow the water to flow for 2 or 3 minutes before collecting the sample. Do not rinse the sample bottle. The sample should be delivered to the laboratory as soon as possible and in no case more than 30 hours after its collection. During delivery, the sample should be kept as cool as possible (but not frozen).

Reference:

- California Health and Safety Code and Chapter 15, “Domestic Water Quality and Monitoring” of Title 22, California Code of Regulations:
  http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=hsc&codebody=&hits=20

GROWER GUIDELINES: WATER DISINFECTING PROCEDURES

Disinfection of all contaminated wells is recommended to eliminate pathogenic organisms as well as organisms that can grow in wells and thereby cause clogging and affect the quality of water produced.

Disinfection Involves Seven Steps:

1. A chlorine solution containing at least 50 mg/l (or parts per million) available chlorine, is added to the well. The chart on page 21 lists quantities of various chlorine compounds required to dose 100 feet (30 meters) of water-filled casing at 50 mg/l for diameters ranging from 2 to 24 inches (50 to 600 millimeters)[1].

2. The pump column or drop pipe shall be washed with the chlorine solution as it is lowered into the well.

3. After it has been placed into position, the pump shall be turned on and off several times (i.e., "surged") so as to thoroughly mix the disinfectant with the water in the well. Pump until the water discharged has the odor of chlorine[2]. Repeat this procedure several times at one-hour intervals.

4. The well shall be allowed to stand without pumping for 24 hours.

5. The water shall then be pumped to waste until the presence of chlorine is no longer detectable. The absence of chlorine is best determined by testing for available chlorine residual using a test kit designed for this purpose[3].

6. A bacteriological sample shall be taken and submitted to a laboratory for examination. A chart showing compound requirements is listed on page 21.

7. If the laboratory analysis shows the water is not free of bacterial contamination (e.g. fecal coliform<2.2/100 milliliters), the disinfection procedure should be repeated. Depending on the level of contamination, it may be necessary to use a higher concentration chlorine solution (several times that shown in Table 1). The water should then be retested. If repeated attempts to disinfect the well are unsuccessful, a detailed investigation to determine the cause of the contamination should be undertaken.

[1] Where small individual domestic wells to be treated are of unknown depth or volume, at least one pound (0.45 kilograms) of calcium hypochlorite (70 percent available chlorine) or two gallons (7.5 liters) of household bleach (sodium hypochlorite), such as Clorox or Purex, may be used in lieu of the chemicals shown in Table 1.

[2] Disposal of the waste should be away from trees, shrubs, or lawns and into storm sewers, drainage ditches, etc. Note that heavily chlorinated water should not be wasted into sewage disposal systems (septic tanks). Such strong disinfectants could neutralize the bacteria needed to stabilize the sewage and also could damage the soil absorption system.)

[3] Testing for available chlorine residual is simple and inexpensive. Test kits can be obtained from chemical supply houses, swimming pool suppliers, etc.

Reference:

California Health and Safety Code and Chapter 15, "Domestic Water Quality and Monitoring" of Title 22, California Code of Regulations: http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=hsc&codebody=&hits=20

GROWER GUIDELINES: CHLORINE COMPOUNDS CHART

Chlorine Compound Required to Dose 100 Feet (30 Meters) of Water-Filled Casing at 50 Milligrams Per Liter[1]

Diameter of Casing Inch (mm)	70% Calcium Hypochlorite[2] (Dry Weight)[3]	25% Chloride of Lime (Dry Weight)[3]	5.25% Sodium Hypochlorite[4] (Liquid Measure)
2 (50)	¼ oz (7 g)	½ oz (14 g)	2 oz (59 ml)
4 (100)	1 oz (28 g)	2 oz (57 g)	9 oz (266 ml)
6 (150)	2 oz (57 g)	4 oz (113 g)	20 oz (0.6 l)
8 (200)	3 oz (85 g)	7 oz (0.2 kg)	2-1/8 pts (1.0 l)
10 (250)	4 oz (113 g)	11 oz (0.3 kg)	3-1/2 pts (1.7 l)
12 (300)	6 oz (0.2 kg)	1 lb (0.45 kg)	5 pts (2.4 l)
16 (400)	10 oz (0.3 kg)	2 lb (0.9 kg)	1 gal (3.8 l)
20 (510)	1 lb (0.45 kg)	3 lb (1.4 kg)	1-2/3 gal (6.3 l)
24 (610)	1-1/2 lb (0.7 kg)	4 lb (1.8 kg)	2-1/3 (8.8 l)

[1] Some authorities recommend a minimum concentration of 100 mg/l. To obtain this concentration, double the amounts shown.
[2] HTH, Perchloron, Pittchlor, etc.
[3] Where dry chlorine is used, it should be mixed with water to form a chlorine solution prior to placing it into the well. Note that dry chlorine should be added to water, not vice versa. Further, the chemical should be added slowly. These precautions are necessary to lessen the possibility of a violent chemical reaction.
[4] Household bleaches such as Clorox, Purex, etc.

Reference:

- California Health and Safety Code and Chapter 15, "Domestic Water Quality and Monitoring" of Title 22, California Code of Regulations: http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=hsc&codebody=&hits=20

GROWER GUIDELINES:
TREATED RECYCLED WATER CHECKLIST

Name of Farming Operation: _____

Date: _____

If you are considering the use of treated or recycled water, please be aware of the following points. Note: It is NOT recommended that untreated recycled water EVER be used. NEVER use treated sewage water.

Task	Check If Accomplished
Have direct communication and interaction with the wastewater treatment facility representatives. Become knowledgeable about the treatment process and the steps taken to provide high quality and safe recycled water.	
Treatment facilities are required to conduct daily water tests for total coliform organisms and heavy metals. Keep weekly or monthly summaries of water tests in your files.	
Consider having an independent test of the recycled water for *E. coli* or *Salmonella* at the point of use (on the farm) to verify that the water is not being contaminated at your farm.	
If you use a filtration system for your water supply, what is your system capable of screening/filtering out of your water? Be aware and keep records of your system's capability. Note: filtration can remove only physical objects, not microbial contaminants.	
Minimize the direct contact of water to strawberries. Drip irrigation or micro-jet sprinklers will minimize exposure. Use alternative water sources for sprinkler irrigation and pesticide application.	
Document any corrective action taken, such as an on-farm chlorination or filtration system.	

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES:
RECYCLED WATER QUESTIONS AND ANSWERS

What is Recycled Water?
Recycled water is domestic/municipal wastewater that has been highly treated and disinfected so that it meets the California Department of Health guidelines for irrigation of crops that are consumed without cooking. As defined and used in Title 22 Water Recycling Criteria by the California Department of Health Services, recycled water means "disinfected tertiary recycled water."

Is Reclaimed Water Synonymous with Recycled Water?
Yes and no. At one time reclaimed water was the general term most commonly used to describe disinfected and treated wastewater. Today, recycled water is the accepted terminology. Reclaimed water commonly refers to storm water or irrigation run-off, used processing wash water, etc. Recycled water is the end product of the disinfection and tertiary treatment of domestic/municipal sewage wastewater.

How is Recycled Water Regulated?
Title 22 Water Recycling Criteria of the California Code of Regulations as administered by the California Department of Health Services regulate recycled water use.

What are the Concerns Over Use?
Recycled water may contain chemical elements that could cause plant damage, and pathogenic organisms including bacteria, parasites and enteric viruses that could lead to human health and safety concerns. Public/consumer perceptions and lack of knowledge of the tertiary treatment process of wastewater is a primary concern over the use of recycled water.

What are the Other Uses of Recycled Water?
The primary use of recycled water is in landscape irrigation (parks, golf courses, school playfields, etc.). Other uses include toilet flushing and industrial use, such as carpet dying. The Dublin San Ramon Services District is trying to use recycled water for groundwater recharge, but is facing major public opposition. The San Diego District has a quaternary (four-phase) disinfection and treatment facility capable of producing recycled water suitable for drinking purposes. The local media coined the phrase "from toilet to tap" which has turned the public against this use.

What are the Microbial Food Safety Precautions Taken for Recycled Water Use on Ready-to-Eat Food?
Title 22 only requires daily analyses for total coliform organisms in recycled water used for the surface irrigation of food crops where the edible portion is produced above ground and not contacted by the recycled water. The maximum allowable is 2.2 per 100 milliliters. Title 22 does not require specific analyses for parasites, viral or bacterial organisms such as *Giardia*, *Cryptosporidium*, *E. coli*, etc.

What is Done If Recycled Water is Found Positive with *E. coli*?
If the problem is identified at the recycling facility, the disinfection treatment (usually chlorine) can be adjusted to eliminate the problem. If the problem is potentially at the farm site where there are several possible contamination sources such as raw water, distribution system (i.e. canal), or holding ponds, an on-farm water chlorination system is one option. The goal, whether it is recycled or raw water that is used, is to minimize water contact with the edible portion of the crop. Direct product contact must be avoided.

Reference:

- California Health Laws Related to Recycled Water "The Purple Book": http://www.dhs.ca.gov/ps/ddwem/publications/waterrecycling/purplebookupdate6-01.PDF

GROWER GUIDELINES: FIELD SANITATION

Documentation of field sanitation practices and employee training minimizes the risks for microbiological contamination. It is essential that the strawberry industry document the strict compliance with the high standards set forth in California. Training for both supervisory and field personnel should continually reinforce the importance of good field sanitation and worker health and hygiene practices. Check to see that harvest contractors and crews are aware of microbial food safety risk reduction principles and adhere to established food safety practices.

If You Use a Harvesting Machine, Make Sure It's Clean!

- Develop and document a system of cleaning and sanitizing food contact surfaces. Clean all food contact surfaces before using.
- Minimize the opportunity for vectors (birds, rodents) to contaminate packing surfaces and materials. Minimize the access or attraction of harvest equipment to vectors by ensuring no damaged fruit is left on belts or grading tables.

Toilet Facilities Should be Clean, Accessible and Well Supplied

California's field sanitation regulations are the strictest in the nation. Be sure you document each step you take in providing clean, sanitary toilet facilities and hand washing stations.

Provide Convenient, Clean, Well-Maintained and Frequently Serviced Toilet Facilities in the Field

Workers should have ready access to toilets and hand washing stations at all times. This helps reduce the incidence of workers relieving themselves in the field, a practice that greatly increases the possibility of microbial contamination.

State and Federal Regulations require one restroom per 20 male employees and one restroom per 20 female employees, located within a five-minute walk. However, it is strongly recommended that field toilets be immediately accessible and available for all employees.

Provide Properly Constructed Facilities

Facilities must:

- Be properly constructed to prevent ground and water contamination.
- Have screened, self-closing doors.
- Be ventilated and provided with self-closing doors, lockable from the inside, and shall be otherwise constructed to provide privacy.
- Be rigidly constructed to avoid splashing on the occupant, field or road.
- Have an inside surface of nonabsorbent material – smooth, easily cleaned and light in color to readily show dirt and grime.
- Provide a minimum area of eight (8) square feet, with a minimum width of two and one-half (2.5) feet for each toilet seat. Sufficient additional space shall be included if hand washing facilities are within the facility.
- Have a durable, easily cleanable wastewater tank with a minimum tank capacity of 40 gallons.
- Be moved to a new site or taken out of service when the pit is filled to within two (2) feet of the adjacent ground surface. The pit contents shall be covered with at least two (2) feet of well-compacted dirt when the toilet is moved.
- Have a hand washing water tank which provides a minimum capacity of fifteen (15) gallons.
- It is recommended that hand washing basins be installed outside of the portable restroom so that the act of hand washing can be observed.

FIELD SANITATION

Do Not Clean Portable Toilets in the Field; Clean Toilets Outside of the Field Perimeter
Sewage transport trucks need direct access to toilet facilities to provide proper collection and disposal of wastes through a municipal sewage system or a sub-surface septic tank system. When toilets must be cleaned or serviced near the field, use appropriate barriers or physical containment to prevent contamination in the event of an accidental leak or spill. The disposal of wastes from toilet or hand washing facilities shall not cause unsanitary conditions, contamination or nuisance. Rinse water must be recaptured and contained and only be discharged outside of the field perimeter. The disposal of wastes from toilet or hand washing facilities should not cause unsanitary conditions, nuisance or contamination.

Keep Facilities Well Supplied
Provide an adequate supply of toilet paper. Hand washing stations should be equipped with a basin, water, liquid soap, a waste container and sanitary hand drying devices such as single-use disposable paper towels.

In the Case of a Toilet Cleaning Spill
Provide physical diversion and containment in the event of waste spillage. Have a plan for product isolation and destruction in the event of a spill. Also be aware of how secure your toilets are. If they are free-standing, there is more of a chance they will be tipped over and therefore contaminate the soil.

If there is a toilet spill on your farm, first stop the waste from continuing to spill by using rags, toilet paper, etc. Then call your toilet rental/cleaning service and report the spill. Wear gloves while interacting with the spill. Cover the spill with a layer of bleach to quickly sanitize while waiting for a cleaning service. Use a cleaning service; do not attempt to clean the spill yourself.

Avoid Locating Facilities Near Sources of Irrigation
Keep facilities away from areas that are subject to water runoff, which has the potential to contaminate soil, water sources, strawberries and workers.

Animals and Food Should Not Be in the Field
- Do not allow animals (including dogs) in the field and do not allow grazing livestock near strawberry fields. Preventative measures must be taken if a field is in close proximity to livestock.
- Do not allow workers to eat, drink, chew gum, chew tobacco, or smoke in or near the plant beds. Glass objects are prohibited inside the field perimeter

Containers Should Not Touch the Soil
Primary containers (e.g. clamshells, pint containers, etc.) should never have contact with the soil. It is recommended that no packaging have direct contact with the soil.

Document the Steps You Take to Maintain Sanitary Conditions
Have written procedures in place (see pages 26-28 for samples of checklists) and document the average number of field employees each week, number of field toilets in use, sanitation procedures, frequency of cleaning, individual or company responsible for maintenance and sanitation, and the procedure for checking and replenishing toilet paper. If, instead of using a maintenance service provider, you maintain and service field sanitation facilities for your operations, be aware that local health codes apply to waste disposal and must be followed. Toilet facilities must be, at all times, operational, maintained in a clean and sanitary condition, and kept in good repair. Written records of service and maintenance must be maintained and retained for two years.

Reference:

- FDA Guide to Minimize Food Safety Hazards for Fresh Fruits and Vegetables Section V, Sanitary Facilities, and Section VI, Field Sanitation: http://vm.cfsan.fda.gov/~dms/prodguid.html
- California Department of Industrial Regulations Title 8, Section 3457: Field Sanitation and Worker Hygiene: http://www.dir.ca.gov/Title8/3457.html

GROWER GUIDELINES:
FIELD SANITATION REQUIREMENTS CHECKLIST

Name of Farming Operation: _____

Date: _____

Rule	Completed	Description
Separate toilet facilities are provided; one facility for each 20 persons of each sex. Where there are fewer than five employees, separate toilet rooms for each sex are not required provided facility can be locked from the inside.		
Toilet facilities are screened to keep insects and animals out.		
Field sanitation units are ventilated and provided with self-closing doors, lockable from the inside, and constructed to provide privacy.		
Toilet facilities, at all times, are operational, maintained in a clean and sanitary condition, and kept in good repair.		
Documentation is maintained stating average number of employees per week, number of field toilets in use, frequency of cleaning (see form on page 27 for example.)		
A procedure for maintenance and sanitation is in place and easily accessible.		
Toilet paper is provided in a suitable holder in each toilet unit.		
Effective odor control and solid-liquefying chemicals are used at all times in the toilet's chemical waste holding tanks.		
The toilet and hand washing facilities are located within close proximity to each other.		
For the workers' convenience, both the toilet and hand washing facilities must be located within a one-quarter mile walk or within five (5) minutes, whichever is shorter.		
Written records of service and maintenance are maintained and retained for two years.		
Contents of chemical tanks are disposed of by draining or pumping into a sanitary sewer, approved septic tank, a holding tank of suitable size or any other method approved by the local health department.		
The disposal of wastes from toilet or hand washing facilities does not cause unsanitary conditions, nuisance or contamination.		

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

Reference:

- California Department of Industrial Regulations Title 8, Section 3457: Field Sanitation and Worker Hygiene: http://www.dir.ca.gov/Title8/3457.html

GROWER GUIDELINES:
FIELD SANITATION RESTROOM FACILITY MAINTENANCE LOG

Name of Farming Operation: _____

Beginning Date: _____Through End Date: _____

Week Ending	# of Employees	# of Units	Checked By	Frequency of Sanitation

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES:
FIELD SANITATION SUPPLIES MAINTENANCE LOG

Name of Farming Operation: ____

Beginning Date: __________________ through End Date: ________________________

Circle the appropriate response for the action when checked/refilled is listed in the box.

Date	Unit #	Hand Wash Water	Soap	Paper Towels	Toilet Paper	By:
		Checked/refilled	Checked/refilled	Checked/refilled	Checked/refilled	
		Checked/refilled	Checked/refilled	Checked/refilled	Checked/refilled	
		Checked/refilled	Checked/refilled	Checked/refilled	Checked/refilled	
		Checked/refilled	Checked/refilled	Checked/refilled	Checked/refilled	
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		Checked/refilled	Checked/refilled	Checked/refilled	Checked/refilled	

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: WORKER HEALTH AND HYGIENE

Have CAL-OSHA's Injury and Illness Prevention Program (IIPP) in Place and Documented
Growers must follow CAL-OSHA's mandatory IIPP, made up of these eight basic elements:

1. Identify the person given the authority to implement and maintain the program.
2. Enforce safety policies, practices and procedures.
3. Communicate to the employee what is required regarding safety.
4. Inspect operations and facilities on a regular basis to identify potential workplace hazards.
5. Investigate injuries and illnesses to identify causes.
6. Correct hazards that have been found during inspections and/or investigations.
7. Train employees in both general safe work practices and specific hazards of job assignments.
8. Document steps taken and maintain the injury and illness prevention program.

This program's documentation should be included within each operation's food safety program and this IIPP should be reviewed with all new employees as they are hired. For more requirements on when employees should receive program review and information on the program itself, please visit: http://www.dir.ca.gov/title8/3203.html

Train Workers in Good Hygiene, and Document the Training
Begin with a written employee training program. Document all training and steps taken to help enforce compliance with local, state and federal worker hygiene practices.

Hand Washing is a Factor in Keeping Food Clean
Hand washing is the single most important factor in helping to reduce microbiological risk. Past outbreaks of food borne illness associated with fresh and minimally processed produce have usually been the result of produce becoming contaminated with fecal material. Growers should place a high priority on ensuring the use of practices that minimize the potential for direct or indirect contact of fecal material and fresh produce. Steps to minimize this risk include:

- Have written training procedures on the importance of hand washing and personal hygiene. Document the frequency and content of training meetings.
- Remind employees daily of the importance of hand washing. Have adequate hand washing stations available.
- Document your policy on maintenance of hand washing facilities, including:
    a. Sanitation procedures for rinsing and cleaning wash water tanks.
    b. Frequency of water level checks (must have sufficient water at all times and use a minimum 15-gallon water tank).
    c. Procedures to be sure that potable water, soap and single use towels are always available (see page 28 for a checklist.)
- Place signs in appropriate places indicating water is for "hand washing purposes only."

Proper Hand Washing Procedures
Proper and frequent hand washing is one of the best ways to keep you and your family healthy, and the food you harvest safe. For a hand washing procedures checklist, see page 32. Hands should be washed before and after eating and smoking.

Proper hand washing before the workday, and after using the bathroom, eating, drinking, or smoking is a simple six-step process:

1. Wet hands with clean water.
2. Apply antibacterial soap.
3. Scrub hands and fingernails for a minimum of 15-20 seconds.
4. Rinse off soap thoroughly with clean water.
5. Dry hands with single-use paper towels.
6. Discard used towels in the trash.

If you use gloves, they must also be kept clean during the workday. Wash gloves thoroughly and frequently. Take your gloves off and wash your hands as described above. Washing your hands before placing gloves back on reduces the risk of contaminating the inside of the gloves. Hand sanitizers (liquid

or gel) are fine provided they are used after hands are washed, rinsed and dried using anti-bacterial liquid hand soap. Hand sanitizers are intended to supplement, not replace hand washing.

Drinking Water
A written policy must be in place to meet drinking water requirements:

- All drinking water must be potable (i.e. city/municipal water).
- Single use cups or a drinking fountain must be provided.
- Water containers must be cleaned and rinsed daily and must be kept covered and protected to prevent persons from dipping the water by hand or otherwise contaminating it.
- Drinking water must be changed daily and the water's source must be documented.

Have a First-Aid Kit Ready at All Times
There shall be adequate first-aid materials immediately available at the farm headquarters and/or on worker transportation buses. Keep in mind the number of employees on a crew and have ample materials to suit that crew's needs. Such materials shall be kept in a sanitary and usable condition.

A frequent inspection shall be made of all first-aid materials, which shall be replenished as necessary. In the case of employers whose workers are widely scattered in small crews that are contacted by a traveling foreman, adequate protection may be accomplished by having a first-aid kit in the foreman's car or vehicle.

At remote locations, provisions must be made in advance for prompt medical attention in case of serious injuries. This may be accomplished by on-the-site facilities or proper equipment for prompt transportation of the injured person to a physician or communication system for contacting a doctor or combinations of these that will avoid unnecessary delay in treatment. There shall be at least 1 employee for every 20 employees at any remote location with training for the administering of emergency first aid.

Medical Leave and Illness

- Have a written medical leave and illness reporting policy in place. Establish and communicate a clear policy that will allow workers, who report or are observed to have symptoms of illness or diarrhea, to be reassigned to activities that do not involve food or food surface contact. In the absence of such a policy, it is probable that a worker will not report an illness to prevent loss of wages. Do not allow sick workers to harvest strawberries. Encourage workers to report sick workers.
    - This includes employees with infectious diseases, ill health accompanied by diarrhea, fever, sore throat, open lesions. These employees should not work in contact with strawberries or any equipment used in the packing or sorting of fresh or frozen strawberries, and alternative work should be provided.
    - Have designated tasks available for sick workers, such as picking up trash, weeding, etc. Ultimately, reassign sick employees to duties that do not require direct contact with strawberries.
- All incidences of bleeding are to be reported to supervisors. Any product or packaging materials contaminated by or in contact with blood must be segregated and disposed of immediately. Tools contaminated by or in contact with blood must be properly sanitized immediately.
- Workers with minor cuts should have those well washed, covered with first aid materials, and then enclosed with rubber gloves.
- Supervisors should exhibit good personal hygiene. Encourage supervisors to set a good example.

WORKER HEALTH AND HYGIENE

Typical Signs of Infectious Diseases

The pathogens *Salmonella typhi*, *Shingella* species, *E. coli* 0157:H7 and Hepatitis A virus have a high infectivity, and the ability to produce severe disease. Any worker showing symptoms of an active case of illness that may be caused by any of these pathogens should be excluded from work assignments that involve direct or indirect contact with fresh produce. Below is a partial list of infectious and communicable diseases that are transmitted through food.

Disease	**Symptoms**
Hepatitis A	Fever, Jaundice
Salmonella typhi	Fever
Shingella species	Diarrhea, Fever, Vomiting
Norwalk and Norwalk-like viruses	Diarrhea, Fever, Vomiting
Staphylococcus aureus	Diarrhea, Vomiting
Streptococcus pyogenes	Fever, Sore Throat with Fever

Reference:

- FDA Guide to Minimize Microbial Food Safety Hazards in Fresh Fruits and Vegetables, Section IV, Worker Health and Hygiene: http://vm.cfsan.fda.gov/~dms/prodguid.html
- California Department of Industrial Regulations Title 8, Section 3457: First Aid Kit: http://www.dir.ca.gov/Title8/3439.html
- CDHS Code Section 112015. http://www.dhs.ca.gov/ps/fdb/PDF/fsact.pdf
- California Department of Industrial Regulations Title 8, Section 3457: Field Sanitation and Worker Hygiene: http://www.dir.ca.gov/Title8/3457.html

GROWER GUIDELINES:
PROPER HAND WASHING PROCEDURES CHECKLIST

Name of Farming Operation: _____

Name of Person Completing This Checklist: _____

Date: _____

Rule	Completed	Description
Pure, wholesome and potable water (drinking water quality) is available for hand washing.		
Hand washing facilities are refilled with potable water as often as necessary to have an adequate supply at all times. (15-gallon minimum requirement for water tank.)		
Anti-bacterial, liquid soap and disposable single-use towels are provided.		
Signs are posted indicating that the water is only for hand washing purposes.		
Hand washing facilities are maintained in a clean and sanitary condition.		
One hand washing facility is available for every twenty (20) employees or fraction thereof.		
Hand washing facilities are provided with the field sanitation units or in the immediate vicinity.		
Both the hand washing and toilet facilities must be located within a one-quarter (1/4) mile or within five (5) minutes walk, whichever is shorter.		
The disposal of wastes from the hand washing facility does not cause unsanitary conditions, nuisance or contamination.		

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

Reference:

- California Department of Industrial Regulations Title 8, Section 3457: Field Sanitation and Worker Hygiene: http://www.dir.ca.gov/Title8/3457.html

GROWER GUIDELINES: DRINKING WATER CHECKLIST

Name of Farming Operation: _____

Beginning Date: _____ through End Date: _____

Water Source: _____

Date	Drinking Water	Cups	Water Container	Checked By:

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: PESTICIDE USE AND WORKER SAFETY

California Has the Most Stringent Pesticide Regulations
All pesticides must be registered with both the EPA and the California Department of Pesticide Regulation (DPR). Maintain documentation of your farm's compliance with local, state and federal pesticide regulations. These include:

Use Permits and Posting Requirements
- A restricted material permit or operator identification number is required before you possess or use any pesticide.
- Comply with all federal, state and local field posting requirements.

Application and Use Records
- A notice of intent (NOI) to apply restricted material is required.
- Pesticide use reports must be submitted by the 10th day of the month following the month when the pesticide application was completed. It is a good practice to provide your shipper/processor with a copy of your monthly use reports.
    - California is the only state that requires full reporting of all pesticide use. Since 1990, any grower, commercial pest control operator, ground and aerial applicator, structural operator, or professional gardener must report pesticides applied, date, location and crop, and if the application is structural. Reports are filed with the agricultural commissioner in the county where applications occur.

Application-Specific Information for Pesticide Handlers and Fieldworkers
- The operator of property shall display, at a central location, the following application-specific information.
    1. Identification of the treated area
    2. Time and date of the application
    3. Restricted entry interval
    4. Product name, EPA registration number and active ingredients.

    For a checklist, see page 36.
- This information shall be displayed within 24 hours of the completion of an application and include all applications that have been made to any treated field on the agricultural establishment within ¼ mile of where employees will be working. Once displayed, the information shall remain displayed for 30 days in addition to the restricted entry interval time period specified on the pesticide label until the area no longer meets the definition of a treated field or handler employees and fieldworkers will no longer be on the establishment, whichever occurs earlier.

Private Applicator Certification, PCB/PCA Licensing and Registration
- Identify individuals or companies responsible for pesticide permits and applications.
- Verify proper licensure and registration of businesses and pest control advisors, etc.
- Completion of private applicator certification is required prior to any pesticide possession and/or use.

Documentation of Proper Training
- Maintain written pesticide safety training records for all your pesticide applicators and handlers for two years.

Applicator, Mixer/Loader, and Field Worker Safety Requirements
- Document compliance with all federal, state and local laws and regulations relating to applicator, mixer/loader, and field worker safety.
- Monitor the source and quality of water used for pesticide applications. Potable water from a municipality is the preferred water source for pesticide applications. Recycled water should never be used for pesticide applications. Test water quality if water from sources other than a municipality is used.

PESTICIDE USE AND WORKER SAFETY

Retention of Pesticide Use Documentation for Duration Required by Law

- Under California law, many pesticide use documents must be kept for the current year and two years prior.
- Medical supervision records for employee pesticide handlers and applicators shall be kept for three years only if employees are required to handle organophosphates or cabamates in category I or II for more than six (6) days in a 30 day period.

Reference:

- California Code of Regulations, Section 6723.1: http://www.cdpr.ca.gov/docs/inhouse/calcode/030302.html#a6723

GROWER GUIDELINES: APPLICATION-SPECIFIC INFORMATION FOR PESTICIDE HANDLERS AND FIELDWORKERS

Name of Farming Operation: _____

Name of Person Completing This Checklist: _____

Date: _____

Identification of the Treated Area	Time and Date Application Completed	Restricted Entry and Post Harvest Intervals	Product Name	EPA Registration Number	Active Ingredients
		/			
		/			
		/			
		/			
		/			
		/			
		/			
		/			
		/			
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Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

Reference:

- California Code of Regulations, Section 6723.1: http://www.cdpr.ca.gov/docs/inhouse/calcode/030302.html#a6723

GROWER GUIDELINES: PESTICIDE SAFETY GUIDE FOR AGRICULTURAL WORKERS

Pesticides, used to control crop diseases and pests, are applied in liquid and solid forms, and as gases. Specific instruction beyond the scope of this training, and personal protective equipment, are needed to mix, load, apply, or otherwise handle pesticides, or to enter treated areas during post-application "restricted entry intervals."

- Restricted entry intervals range from 4 to 72 hours or more. No one, except a properly trained and equipped person, can enter a treated area when entry is restricted. If you see warning signs posted around a field, do not enter the field until your supervisor removes the signs.

- Field workers will be informed of pesticide applications taking place or when a restricted entry interval is in effect on an employer's establishment, orally and/or via official warning signs.

- Pesticide Safety Information Series A-9 (Hazard Communication Information for Employees Working in Fields) must be made available at the worksite. These documents provide information on employee's rights to receive information about pesticides and potential work hazards.

- Pesticide applicators must be sure no pesticide is applied so as to contact anyone directly, or through drift. Applicators can't apply any more than the recommended amount of pesticide to a crop and must follow all label directions.

- Pesticides could injure field workers, including irrigators, if entry restrictions, worker hygiene, and other precautions aren't followed. Pesticide exposure can occur from spray drift, or contact with treated plants, soil or water.

- Move away if pesticides drift into your work or housing area, and tell your supervisor. Stay out of areas you are instructed by signs or supervisors not to enter, including areas where pesticide are stored or handled. Do not go near pesticide applications in progress.

- If you are working in an enclosed area, like a greenhouse, and feel dizzy or have breathing problems, get to fresh air. If someone passes out in an enclosed area, get help from someone trained and equipped for rescue.

- Plants, insects, or pesticide residues can cause skin, nose, throat, or eye irritations. Pesticide residues are small, usually unseen, amounts remaining on plants, soil, and equipment that could contact your skin and eyes.

- Pesticide residues may affect some people more than others, and can cause allergic reactions. You can also be exposed to pesticides by inhaling them, or eating contaminated crops.

- Wear long sleeves, pants, hat, socks, and shoes or boots. Wash your hands before eating, drinking, smoking, or using the toilet; and prior to going home.

- Shower with soap and shampoo after work. Then put on clean clothes.

- Wash fruits and vegetables that you are allowed to pick in the field with clean water before you eat them. Don't use water in irrigation systems or drainage ditches for washing produce or drinking as pesticides are sometimes applied to crops through irrigation.

- Empty pesticide containers, even after rinsing, have residues on them. They're unsafe for any purpose. If you find one, tell your supervisor. Never take a pesticide container home.

PESTICIDE SAFETY GUIDE FOR AGRICULTURAL WORKERS

- Pesticide residues can get on work clothes. Wash work clothes separate from other clothes, preferably with hot water and laundry detergent, before you wear them again.

- Symptoms of pesticide contact with skin include staining, reddening, blistering of the skin, or an itching or burning sensation. Other pesticide exposure symptoms include headaches, dizziness, upset stomach, flu-like symptoms or irritation of the eyes, nose, and throat.

- Some of these symptoms are caused by other illnesses unrelated to pesticides, including heat stress. To reduce harmful effects of working in hot conditions, drink plenty of water supplied by your employer, and take needed breaks to cool down.

- Severe heat stress, called heat stroke, can be fatal. Signs of heat stroke are fatigue, headache, chills, dizziness, loss of coordination, severe thirst, and altered behavior.

- Try to get a heat stress victim into a cool area. Splash face, neck, hands, and forearms with water. Have the person, if conscious, drink water and stay quiet until help arrives.

- If a pesticide spray ever gets on you, remove contaminated clothing. Wash contacted skin with soap and water promptly. If your eyes have been exposed, rinse immediately with clean water or an eye flush kit for at least 15 minutes.

- Quickly tell your supervisor of all work injuries to you or others. It is the supervisor's responsibility to be sure that employees with any sign of heat stress or pesticide exposure receive medical help.

- Do not drive yourself to the doctor. Employers should make sure that you get to a doctor or clinic, and should furnish all available information about any pesticide that may have made you ill.

- If you are exposed to a pesticide, you may only experience short term illness or irritation, but there's a chance chronic or delayed effects, such as reproductive harm, nervous system disorders, or cancer will appear years later. Employers must protect you from pesticide injury, but your safety is also your responsibility.

GROWER GUIDELINES: ACKNOWLEDGEMENT OF PESTICIDE SAFETY TRAINING FOR HANDLERS AND APPLICATORS

This is a suggested individual written pesticide safety training record for your employees that apply, mix or load pesticides. This written training record shall be kept on each employee's file for two years and must be available upon request from the County Agricultural Commissioner's Office. Ensure proper training prior to allowing your employee to apply, mix or load any pesticide. This is an annual training requirement and training should be pesticide-specific.

Written Training and Hazard Communication

1. Employers shall provide annual training so that each employee who handles any pesticide understands, for each pesticide to be used, all of the following that is applicable to the particular handling task:
    a. The immediate and long term hazards involved including known or suspected acute, chronic, delayed effects, sensitization and reproductive effects as identified in Material Safety Data Sheets (MSDS), pesticide labeling and/or Pesticide Safety Information Series (PSIS) leaflets.
    b. The safety procedures, including routine decontamination, to be followed, engineering controls (such as enclosed cabs and closed system) to be used and the work clothing and personal protective equipment to be used.
    c. The procedures for handling non-routine tasks or emergency situations, the ways poisoning or injury from pesticides can occur, first aid including importance of immediate decontamination of skin and eyes when exposure occurs, the common symptoms of pesticide overexposure and where to obtain emergency medical treatment.
    d. The purposes and requirements of medical supervision, if category I or II organophosphate or carbamate pesticides with the signal words "DANGER" or "WARNING" are handled for the commercial or research production of an agricultural commodity.
    e. Applicable laws, regulations, MSDS, PSIS leaflets and pesticide product labeling requirements.
    f. The employee's rights, including the right:
        I. To personally receive information regarding pesticides to which they may be exposed.
        II. For the employee's physician or employee representative to receive information regarding pesticides to which the employee may be exposed.
        III. Against discharge or other discrimination due to their exercise of these rights.
    g. The location of the written Hazard Communication Program (Pesticide Safety Information Series leaflet A-8), pesticide use records, Pesticide Safety Information Series leaflets, Material Safety Data Sheets, employee exposure and monitoring records and training records.
    h. Prevention, recognition and first aid treatment of heat related illness.
    i. Warnings about taking pesticides or containers home; Environmental concerns such as drift, runoff or wildlife hazards.

2. The employer must have a written training program for all pesticides that are handled by employees and maintain it at a central workplace location that is accessible to employees. The written program shall describe the materials and information that will be provided and used to train his or her employees. Examples of training materials are pesticide labels, slides, videotapes, and MSDS.

3. The employer (in a central location at the workplace) shall keep pesticide use records, PSISs, and MSDSs. This location is identified in PSIS A-8 which shall be provided to employees.

4. Employers shall provide, upon request of the employee, employee's representative, or employee's physician, access to any records or other documents required to be maintained. Access shall be granted within 48 hours.

ACKNOWLEDGEMENT OF PESTICIDE SAFETY TRAINING

5. The PSISs are informational handouts prepared by the California Department of Pesticide Regulation for use in the training of individuals who are required to handle pesticides in the course of their employment. The information contained in the PSISs and this training form is intended to supplement information found on pesticide labels. Employers shall post copies of the appropriate PSISs in a prominent location at the workplace. If PSISs are not posted at the workplace, the employer shall provide copies of the Safety Series to each employee who handles pesticides.

Label Review

6. Pesticides include herbicides, insecticides, fungicides, fumigants, nematicides, rodenticides, algaecides, disinfectants, etc.

7. Before using or handling a pesticide, the pesticide label shall be read and instructions followed carefully. The pesticide label must be present at the application site.

8. The pesticide label shall never be deviated from except when using:
   a. A decrease in dosage rate per unit treated.
   b. A decrease in the concentration of the mixture applied.
   c. Application at a frequency less than specified.

9. A pesticide bearing the signal words “DANGER” has a Category I rating and is of the highest toxicity, a pesticide bearing the signal word “WARNING” has a Category II rating and is of moderate toxicity and a pesticide bearing the signal word “CAUTION” has a Category III rating, and is of the lowest toxicity. Signal words do not indicate whether a chemical is restricted or not.

10. Be alerted by the signal words, “DANGER”, “WARNING”, and “CAUTION” on the pesticide label. Wear the appropriate safety clothing and equipment required as outlined on the pesticide label or Worker Safety Regulations.

11. Toxicity is the inherent capacity of a substance to produce injury or death.

First Aid and Medical Supervision

12. Know where the name, address and phone number of a physician, clinic, or hospital emergency room is posted at your worksite.

13. Symptoms of pesticide poisoning include: headache, nausea, vomiting, cramps, weakness, blurred vision, pinpoint pupils, tightness in the chest, labored breathing, nervousness, sweating, watering of eyes, drooling or frothing of the mouth and nose. Advanced pesticide poisoning signs include muscle paralysis, coma, extremely difficult breathing, and loss of bowel control.

14. Know that for pesticide emergency first aid, you must immediately:
   a. Get away from the source of the problem.
   b. Remove contaminated clothing or shoes.
   c. Wash contaminated area of body with soap and water.
   d. Immediately wash eyes with water for 15 minutes if they are contaminated.
   e. Obtain a label of the pesticide you have been working with.
   f. Arrange to be taken to a physician immediately. It is not safe to drive yourself.

15. If you work 6 days in any consecutive 30-day period handling organophosphate or carbamate pesticides for the purpose of producing an agricultural commodity with either signal word “DANGER” or “WARNING” on the label, your employer shall provide the services of a licensed physician. These services will consist of an initial red-blood cell and plasma cholinesterase determination followed by periodic check-ups thereafter, as recommended by the physician.

ACKNOWLEDGEMENT OF PESTICIDE SAFETY TRAINING

16. Severe heat stress, called heat stroke, can be fatal. Signs of heat stroke are: fatigue, headache, chills, dizziness, loss of coordination, thirst and altered behavior. To avoid heat stroke, do not work when it is too hot, drink plenty of water and take needed breaks to cool down. First aid for heat stroke is to get the person to a cooler area, splash face, neck and arms with water and give fluids if the person is conscious. Get medical attention immediately.

17. When mixing/loading pesticides, always wear eye protection. If the label does not specify which type of eye protection to wear, you may wear goggles, face shield, or safety glasses that offer side and brow protection. During the application process eye protection may not have to be worn if:

a. The label does not specify that eye protection is required.
b. The spray boom is mounted below the applicator and the nozzles pointed downward.
c. It is safe to apply the pesticide without wearing eye protection.

18. Rubber or neoprene gloves shall be worn while mixing/loading or applying pesticides or handling contaminated equipment. Either new or clean gloves shall be provided each work day.

19. It is the responsibility of your employer to provide you with clean outer clothing when working daily with pesticides in Category I or II. You should wash and change from work clothes to street clothes before going home after mixing or applying pesticides.

20. It is the responsibility of your employer to provide at the mixing and loading site at least one change of clean work clothing if you are handling any pesticide in toxicity Category I or II.

Respiratory Protection

21. When recommended on the label, respirators must be worn while mixing or spraying pesticides or as necessary to prevent exposure.

22. The employer shall provide annual training in the use, sanitary care and limitations of any respiratory equipment that will be required for use.

23. Certain medical conditions may interfere with wearing a respirator and a statement regarding these limitations must be kept with your training records. If you have a medical condition that interferes with the use of a respirator, an evaluation by a physician is required before you are allowed to do work that requires respirator use.

Using Pesticides Safely

24. You may not mix, load, or apply a pesticide in toxicity Category I for production of an agricultural commodity without periodic supervision, once every two hours during daylight, and every hour while working at night, whenever working with pesticides having the signal word “DANGER” on the label.

25. Category I liquid pesticides or diluted liquid mixes derived from dry pesticides in Toxicity Category I for the production of an agricultural commodity must be loaded through a closed system. This requirement does not apply to employees who handle a total of one gallon or less of pesticides in Toxicity Category I per 24-hour period exclusively in original containers of one gallon or less.

26. Do not eat, drink or smoke while handling pesticides or afterwards, until hands and face are thoroughly washed, using soap and clean towels. Cigarettes should be left in the trunk or lunch pail and not carried in pockets of clothes while mixing or spraying.

27. Know where soap, clean water, towels and clean clothing are readily available.

28. Pesticide exposure can occur by several different methods; inhalation-breathing dust or vapors, chemical spills into the eyes, chemical spills on to the skin or clothing, and swallowing chemicals.

29. Open pesticide bags with a sharp knife and stand sideways to the wind, allowing the wind to blow the material away from you.

30. When mixing pesticides, pour the concentrate from below eye level to reduce the hazard of a splash.

31. Mix pesticides in a well-ventilated and well-lit area.

32. Pesticides shall be weighed or measured accurately using devices that are calibrated to the smallest unit in which the pesticide is being weighed or measured, being careful not to exceed the required amount as it appears on the label for the crop being treated. Never use food or drink containers.

33. Pesticide containers must be properly rinsed after use before being taken to a disposal site. Closed systems, when they are required, have the rinse process as part of the mixing and loading system with the rinse water going into the mix tank.

34. Do not spray when drift may contaminate non-target plants, persons, wildlife or surrounding areas.

Storage and Transportation

35. Never transport pesticides in the passenger compartment of any vehicle or on a flatbed truck unless the pesticides on the flatbed truck have been tied down securely.

36. Never place a pesticide in a container of a type commonly used for food, drink or household uses.

37. Never store or place pesticides near food or feed. Insecticides and fungicides should be kept separate from herbicides to prevent contamination.

38. Pesticides must be kept in locked storage areas or be watched at all times. A pesticide shipment must be delivered to a responsible person or placed in a locked storage area.

39. Do not take pesticides or pesticide containers home. Pesticide containers cannot be used for any other purpose.

Pesticide Accidents

40. Accidents involving the use of pesticides must be reported immediately and accurately to the county agricultural commissioner, giving location and pesticide involved.

41. Handle all pesticide containers carefully, reporting all leaking containers and spills to your supervisor. Check for leaks, weak hoses, and worn gaskets on application equipment frequently.

ACKNOWLEDGEMENT OF PESTICIDE SAFETY TRAINING

Minimal Exposure Pesticides

42. There are special use handling requirements for pesticides designated "Minimal Exposure Pesticides." These regulations apply to the pesticides bromoxynil (Buctril), Folpet, Metasystox-R, and propagate (Omit). The requirements listed below do not allow a lower standard of protection when pesticide-labeling statements require a higher standard of protection. Read the pesticide label carefully!

a. For employees who handle minimal exposure pesticides for any period of time, regardless of the toxicity category of the product used, the employer shall provide an area where employees may change clothes and wash themselves. Clean towels, soap, and adequate water shall be available to allow for thorough washing.
b. The employer shall provide and maintain work clothing and require it to be worn by employees, regardless of the toxicity category of the minimal exposure pesticide.
c. The employer shall provide a closed system and require its use by all employees who mix, load or transfer liquid formulations or load diluted liquid mixes derived from dry formulations of minimal exposure pesticides, regardless of the toxicity category of the product used. These requirements do not apply to employees who handle a total of one gallon or less of these pesticides per day exclusively in containers of one gallon or less.
d. The employer shall provide and require employees to wear full body chemical resistant protective clothing, in addition to work clothing when handling minimal exposure pesticides. Employees working in the following situations are not required to wear chemical resistant full body protective clothing, but this clothing shall be present at the work site:
    I. Employees using a closed system, or sealed water soluble packets, while mixing, loading or transferring these pesticides. These employees shall wear a chemical resistant apron, chemical resistant gloves and chemical resistant boots.
    II. Applicators using equipment with vehicle mounted spray nozzles directed downward and located below the level of the employee.
e. The employer shall provide and require employees to wear respiratory protection when engaged in:
    I. Hand application or ground application of minimal exposure pesticides (respirators do not need to be worn when applicators are using equipment with vehicle mounted spray nozzles directed downward and located below the level of the employee.
    II. Mixing/loading dry formulations of minimal exposure pesticides, except mixers/loaders using sealed water soluble packets.
f. Employers shall see that all protective clothing and equipment are cleaned inside and out or discarded at the end of each day's use.

Consult your local county agricultural commissioner regarding current information and requirements on pesticide safety for agricultural workers.

For more information, visit California Food and Agriculture Code, Divisions 6 and 7 at http://www.leginfo.ca.gov/calaw.html or http://www.cdpr.ca.gov/docs/inhouse/calcode/subchpte.htm.

GROWER GUIDELINES: ACKNOWLEDGEMENT OF PESTICIDE SAFETY TRAINING FOR INDIVIDUAL EMPLOYEES

Name of Farming Operation: _____

Employee Name (First, Middle and Last):_____

Applicator: _____ Mixer/Loader: _____

Hire Date: _____

It is the responsibility of the employee to make sure he/she understands the items discussed herein regarding pesticide safety. Your signature indicates that you have read, understand, and agree to adhere to the items discussed. Applicators will be held personally responsible for violations of pesticide labeling. If there is something you do not understand, ask your trainer.

List the training methods and materials used to train employees in the safe use and handling of pesticides (study guides, slides, videotapes, etc.) One copy must be kept in the employer's files.

_____

_____

_____

The Pesticide Safety Series is available to employees and is posted at (Employer: list specific location here):

_____

Product Label	Date	Employee Signature

_____ _____

Trainer's Signature Employer's Signature

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: PESTICIDE SAFETY TRAINING DOCUMENTATION FOR AGRICULTURAL WORKERS

Name of Farming Operation: _____

Grower: _____ Date: _____

Trainer Name: _____ Affiliation: _____

Certification: _____ Trainer Signature: _____

Topics Covered: _____

Attendees	Signature of Attendee

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: HARVESTING FOR PROCESSING

In some cases, when harvesting strawberries for processing, manually dislodging the strawberry calyx can be difficult. To minimize the risk of microbial contamination, the use of fingernails to dislodge the calyx is not appropriate. Instead, the use of a processing tool is recommended. As a result, alternative methods must be utilized pursuant to the California Health and Safety Code Sections 110560 and 110565.

Hand Washing and Glove Use

- Workers must wash their hands before working in the field.
- Use of gloves is not a substitute for hand washing – the hands must be washed before putting on the gloves.
- Harvesting gloves shall be in a clean and sanitary condition before the start of strawberry harvesting.
- Never take gloves or harvesting tools inside the toilet facilities.
- Gloves, if used, shall be cleaned and rinsed periodically during the harvest day.
- Gloves, if used, shall be constructed of non-latex material in the color blue, if possible.
- Heavily soiled and/or damaged gloves must be replaced.

Harvest Tools

If used, harvest tools shall be of stainless steel or other non-porous and cleanable material that is approved for food contact. Tools must be designed in a safe manner to avoid worker injury.

- Cutting tools shall be maintained so that they are free from damage (e.g. ragged edges.)
- Inspect tool condition periodically and replace damaged tools.
- No extraneous material (such as tape, price labels, etc.) should be on tools.

Maintain Tool Cleanliness Through Daily Cleaning and Sanitizing

- Consider dipping or soaking tools in a sanitizer solution when they're not in use.
- Use a sanitizer such as chlorine (of 200-ppm total chlorine) or quaternary ammonia.
- Check, adjust (as needed), and document the sanitizer concentration strength, at least daily.

Some Potential Cleaning and Sanitation Methods

- To Clean: Use household detergent (e.g. Simple Green) and a synthetic bristle brush. Scrub the tool until clean, and then rinse with potable water.
    - Tools can also be cleaned in a properly running household dishwasher using standard dishwasher detergent. Dried tools should be stored in a clean place.
- To Sanitize: Use a 200-ppm chlorine solution. One tablespoon of household bleach (5.25%) in one gallon of water is equivalent to 200-ppm chlorine. Sanitization should also be performed prior to start-up and periodically during the day.
    - Change the chlorinated sanitization water when it gets dirty or after several hours of operation. Replenish as necessary. Test water frequently based on use to be sure it is maintaining a pH of 6.0 – 7.0 for chlorine to remain active.

Remember, Cleaning and Sanitization are Not the Same

- Both cleaning and sanitization practices must be followed. Cleaning is the removal of dirt, and must be followed by sanitization method (washing with a chlorine solution). Sanitizing alone is not sufficient to get the tool completely clean. In addition, it is important to be aware of the composition of the chemicals used to make sure they do not result in contamination of the soil where runoff might occur during cleaning.

GROWER GUIDELINES: HARVESTING TOOL CLEANING WEEKLY CHECKLIST

Name of Farming Operation: _____

Name of Person Filling Out This Form: _____

Date: _____

Harvesting Tool Cleaning Checklist Question	Answer
Are tools being maintained so as to remain free of damage, such as ragged edges?	Yes____ No____
Is there a regular repair/inspection program to periodically fix or replace damaged tools?	Yes____ No____
Are the tools kept clean of extraneous materials, such as tape?	Yes____ No____
Are stations available for the tools to be cleaned and dipped in sanitizing solution periodically during the day?	Yes____ No____
Is the sanitizer concentration verified and documented in a log?	Yes____ No____
Gloves are not to be used as a substitute for hand washing. Is there a hand washing program in place? Is it being followed?	Yes____ No____
Are gloves maintained in a clean and sanitary manner?	Yes____ No____
Do workers know that gloves and harvesting tools are not to be taken into the toilet facility?	Yes____ No____
Are gloves cleaned and rinsed periodically during the harvest day?	Yes____ No____
Is there a program to replace heavily soiled or damaged gloves on a routine basis?	Yes____ No____

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

GROWER GUIDELINES: PACKAGING STORAGE

Packaging can be a source of food contamination if stored improperly and/or in areas where insects, birds or rodents could come in contact. Packaging is not considered by state health officials to be a high potential source for contamination. However, the following should be considered for field handling and storage of packaging material. Consult a licensed pest control operator for possible control measures.

Field Storage
Whenever possible, the following practices should be followed, and be included in a written storage policy and sanitation procedure plan:

- Primary containers (e.g. clamshells, pint baskets, etc.) should never have contact with the soil. It is recommended that no packaging have direct contact with the soil.
- Empty trays and supplies should be stored in an enclosed building or secure truck or trailer.
- Plastic freezer trays in the field should not have direct contact with the soil. Instead, they may be placed on a pallet or donnage.
- Trays and packaging not intended for immediate use should be covered for protection from weather and kept in a clean area off the ground.

Packaging Storage Policy

- Have written procedures in place for pest (insects, birds and rodents) control.
- Have a written warehouse storage policy and sanitation procedures.
- A reasonable effort should be made on a daily basis to maintain a safe, clean and orderly, secure storage area for packaging.
- Wash, rinse and sanitize storage equipment before harvesting and storing crops.

Pallets

- Check the condition of the pallets used for field and cooling/processing facilities. Make sure there is no contamination from food, nails, broken shards of wood, etc.
- Do not mix pallets used for carrying dry product with those used for wet product. Never use pallets that previously held meat.
- Never place wet or dripping pallets above any strawberry product.

Note: For specific pest control recommendations, consult a licensed structural pest control operator.

GROWER GUIDELINES: TRACE-BACK PROCEDURES

The foundation of a Food Safety Program is the ability to trace food items (including strawberries) back to their source. Shippers and processors will be relied upon to provide information regarding trace-backs and growers should coordinate their trace-back procedures with their shippers or processors.

A system to identify the source of strawberries alone cannot prevent the occurrence of a microbiological hazard that may lead to an initial outbreak of food borne disease. However, the ability to identify the source of a product through trace-back serves as an important component of good agricultural and management practices intended to prevent the occurrence of food safety problems. Information gained from trace-back investigation may also be useful in identifying and eliminating a hazardous practice.

Advantages of an Effective Trace-back System
An effective trace-back system can give investigators clues that may lead to a specific region, packing facility, or even the field, rather than the entire strawberry industry. It also builds confidence among regulators and consumers that the industry is truly in control of all phases of production.

From a public health perspective, improving the speed and accuracy of tracing implicated food items back to their source helps limit the population at risk in an outbreak, the accompanying publicity, and reduces consumer anxiety. Rapid and effective trace-back minimizes the unnecessary expenditure of valuable public health resources. Tracing implicated food items assists public health officials in determining potential causes of contamination, thereby providing data for growers, shippers and others for identifying and minimizing future microbial hazards.

Bottom Line: In the case of a food safety emergency, the government will and can legally ask for access and a copy of records to assess whether the food is adulterated and presents a threat of serious adverse health consequences to humans. You need to know when your food left, who handled it, and where it went to protect you and your operation.

Help Keep Track of Your Strawberries
Many growers, especially smaller operations, have little control over their crop after they enter the distribution and marketing chain. Despite the best efforts by food industry operators, food may never be completely free of microbial hazards. Therefore, it is critical that growers establish tracking systems from the earliest stages of growing and which follow the product from their fields through to the point where the grower loses the “chain of control.”

Suggested Practice
Operators should examine current company procedures and develop procedures to track individual containers from the farm, to the packer, distributor, and retailer, in as much detail as possible. At a minimum, an effective trace-back system should have documentation to indicate the source of a product and a mechanism for marking or identifying the product that can follow the product from the farm to the consumer. Documentation should include date of harvest, farm identification, and who handled the produce from grower to receiver.

In Summary
1. Maintain records of field practices prior to harvest.
2. Establish a code lot numbering system. If a pallet is commingled, it is recommended that all trays/crates be properly coded.
3. Be sure that each load leaving your farm can be traced to the field of origin and date of harvest.
4. Maintain records of lot numbers for all loads of strawberries leaving your farm.

Reference:
- FDA Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables Section IX, Trace-back: http://vm.cfsan.fda.gov/~dms/prodguid.html

GROWER GUIDELINES: FOOD SECURITY ON THE FARM

Safety and Security from Farm to Table
The goal of a Food Security Program is to preserve the safety and security of products from farm to table.

A food security program must address the preventative and corrective measures that reduce the risk of intentional contamination of biological, chemical, or physical hazards into the product. A qualified person or employee must be designated to be responsible for food security, employee awareness and training on food security, reporting and investigating suspicious activities, emergency response and coordination of these areas into the trace-back and recall plans.

In the Field:

- Install a gate or chain at farm entry, if feasible.
- Restrict entry to the farm to employees and authorized personnel. Post signs restricting access to the property.
- Authorized personnel must accompany visitors.
- Lock or secure water wellheads, pumps and/or holding tanks.
- Keep any chemicals in secured areas and minimize the quantity of chemicals stored on-site.
- Restrict access to the chemical storage area to authorized personnel only.
- Maintain a current inventory of all chemicals on site.
- Do not accept delivery on any unordered chemicals. Report attempted delivery to appropriate authority.
- Check ID of driver and/or person/s delivering chemicals (pesticides/fertilizers).
- Crates must be properly coded.

Know Your Employees

- Pre-hiring screening should be conducted on all employees. Use work and personal references, driver's licenses or state issued IDs, addresses and phone numbers. (Verification of INS status and criminal background checks are not feasible at this time).
- Identification badges should be issued to all employees.
- Identification badges of terminated employees should be collected.
- Employees should be trained on food security along with their food safety training.
- Employees should be trained to report and not use suspicious or obviously contaminated packaging.

GROWER GUIDELINES: FOOD SECURITY CHECKLIST FOR THE FARM

Name of Farming Operation: _____

Name of Grower: _____ Recorded By: _____

Location: _____ Date: _____

Food Security Checklist Question	Answer
Is there controlled access to the farm by a gate, chain, or other physical element?	Yes____ No____
Is there a sign restricting access to the farm?	Yes____ No____
Is there a visitor's policy in place?	Yes____ No____
Are all water sources locked or secured (e.g. wellheads, pumps, holding tanks)?	Yes____ No____
Are chemicals stored in a locked or secure space?	Yes____ No____
Is an inventory of chemicals on-site maintained?	Yes____ No____
Are ID checks on driver(s) and/or person(s) delivering chemicals performed?	Yes____ No____
Are employees screened before they're hired?	Yes____ No____
Is a list of employee addresses, phone numbers, and driver's licenses/state IDs maintained?	Yes____ No____
Are ID badges issued to employees?	Yes____ No____
Are the badges of terminated employees collected?	Yes____ No____
Is there employee training on food security?	Yes____ No____
Are employees trained to report suspicious activities?	Yes____ No____
Are employees trained to report and not use contaminated packaging?	Yes____ No____

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

SHIPPER/PROCESSOR GUIDELINES: INTRODUCTION TO GOOD MANUFACTURING PRACTICES

Food safety and product quality are top priorities for the California strawberry industry. All food products are coming under increasing scrutiny by government agencies and consumer groups. With the fast growth of the California strawberry industry comes the increasing possibility of contamination, whether by unclean cooling facilities, workers with poor hygiene, or dirty trailers.

By maintaining and documenting Good Manufacturing Practices, California strawberry shippers and processors can communicate to government regulators and customers worldwide that our industry is diligent in its commitment to offer safe, high-quality strawberries.

This guide is designed to help you examine and improve your own manufacturing practices and be sure that they meet the generally accepted standards of Good Manufacturing Practices. GMPs are the minimum sanitary and processing requirements necessary in the production of wholesome food. GMPs are broadly written and are not intended to be plant specific, but instead, explain tasks that are part of many jobs within a facility.

In several locations throughout these GMPs, forms are recommended for use. These forms are provided as samples only, and haven't been approved for use by state or federal regulatory agencies. You may use them as is, modify them to suit your needs, or create new ones as necessary. In all cases, forms and documents should be reviewed by technical and/or legal experts prior to use to be sure of their adequacy in meeting requirements under state and/or federal regulations. In several of the following sections, "food" will be used and refers to strawberries or strawberry products.

Risk Reduction
The GMP portion of the FSP represents generally accepted, broad-based guidance, developed from current knowledge of food safety practices. The guide focuses on risk reduction, not risk elimination. Current technologies cannot eliminate all potential food safety hazards with product eaten in a raw form.

These GMPs provide broad, scientifically based principles. You should use the guide to help assess microbiological hazards within the context of the specific conditions (e.g. climatic, geographical, cultural, and economic) that apply to your own operation, and implement appropriate and cost-effective risk reduction strategies.

Who's Responsible?
Regulatory officials and your customers want to know. An organizational chart spells out who is responsible for the various phases of your operation. Identify who is responsible to answer customer, consumer, or state and federal government regulator inquiries. Describe each individual's specific responsibilities relevant to each aspect of GMPs in a manner that is clear and easy to understand to avoid confusion when describing who is responsible for making decisions and for their consequences. The chart should include office, cell, and home phone numbers, pager numbers, and after hours emergency contact information.

Include a copy of your organization chart in this document.

SHIPPER/PROCESSOR GUIDELINES: CONTACT FORM AND IMPLEMENTATION CHECKLIST

Name of Shipping or Processing Operation: _____

Name of Owner/Operator: _____

Food Safety Supervisor: _____

Supervisor Alternate: _____

Mailing Address: _____

Phone: _____ Fax: _____

Shipping Location: _____

Date Form Completed: _____

Question	Check if "Yes"	Description (If Applicable)
Is a Food Safety Program (FSP) in place for this operation?		
Is there a pest control program in place?		
Is a program to train employees on the Food Safety Program in place?		
Is a trace-back policy in place?		
Are mock recalls conducted annually?		
Is a cooler facility sanitation and maintenance program in place?		
Is a trailer/cargo container sanitation policy in place?		
Is a packaging storage policy in place?		
Have growers been trained in an FSP and has this training been documented?		

Keep a copy of your operation's procedures and programs in a well-known and easily accessible place.

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

SHIPPER/PROCESSOR GUIDELINES: EMPLOYEE WRITTEN TRAINING CHECKLIST

Employee training that covers the key areas of shipping sanitation and worker hygiene is critical to achieving good agricultural practices and the goals of the Commission's Food Safety Program. The establishment of a written training program for employees that addresses important health and safety issues will help reduce the risk of microbial contamination. Documentation of employee training is necessary to verify that federal, state and local requirements for worker safety training are met. Here is checklist to aid in the documentation of a training program.

Name of Shipping/Processing Operation: _____

Owner/Operator Name: _____

Name of Trainer(s): _____

Trainer Affiliation: _____

Date: _____

Topics Discussed: Check those that apply

□ Worker Health and Hygiene □ Trace-back □ Mock Recalls

□ Introduction to GMPs □ Sanitation Training □ Other _____

List of Attendees

Name of Attendee	Signature of Attendee

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

SHIPPER GUIDELINES: COOLER FACILITY CLEANING PROCEDURES

Cleaning Procedures During the Season
On a daily basis, all areas in the cooler must be swept and cleaned of any debris which might accumulate.

- Personnel assigned to the outside receiving area must keep the area clean.
- Tunnel men must sweep and clean up the pre-cool room.
- Personnel assigned to the Tectrol room, loading dock, and holding rooms should be responsible for maintaining the cleanliness of those areas.
- Everyone is encouraged to clean up as they work to ensure the cooler stays clean.

On A Weekly Basis, personnel should be assigned to do a full sweep of the facility, in and out, including the truck lot, which is swept 2 to 3 times per week.

Cleaning Procedures During the Off-Season
Inside Cooler:

- All rooms should be steam cleaned.
- Clean pre-cool room, floors, walls, etc.; wash out bunkers and coils, top and bottom; scrub all tarps and bumpers.
- Steam clean the Tectrol room (TransFresh cleans the machine).
- Steam clean loading dock, walls, floors, etc.
- Steam clean holding rooms, including racks and units.
- Clean all doorway curtains and replace as needed.

Outside Cooler:

- Steam clean the receiving area.
- Wash the loading pit.
- Unplug and clean all drains and gutters.

PROCESSOR GUIDELINES: INSTRUCTIONS FOR PROCESSING FACILITY EMPLOYEES

General Rules:

1. Employees must wear clean outer garments that are washable. Shoes must be in good repair and of leather construction. No open toes.

2. All employees must wash hands with soap and warm water and sanitize their hands prior to handling strawberries, after using restrooms, returning to their work station from break or lunch, or at any other time when their hands may have become soiled.

3. All employees are to wear effective hair restraints including hairnets and beard covers. In cooling facilities, only wear when appropriate.

4. All jewelry, including watches, must be removed before entering the plant. Medical alert bracelets and, in most cases, plain wedding bands are acceptable.

5. Shirt pockets are to be emptied and cleared of pencils, etc., when in the plant.

6. No glass or food items of any kind are permitted in the plant processing areas. Food may only be consumed in the lunchroom or outside the building in designated areas.

7. No employee infected with any infectious or communicable disease, including boils, sores, wounds or any other affliction that may spread disease, may be in contact with strawberries.

8. Candy, chewing gum, lozenges, etc. are not allowed in the plant.

9. Tobacco is not permitted in the plant. Smoking areas are designated.

10. Extra clothing must be stored in lockers or some other acceptable facility.

11. Cellular phones and Personal Digital Assistants (PDAs) are not allowed in manufacturing plants unless approved by management.

All employees are expected to comply with the Good Manufacturing Practices required by the US FDA and USDA.

Employee: _____

Date: _____

PROCESSOR GUIDELINES: RULES FOR PROCESSING FACILITY VISITORS

Identification: I.D. is required of any person who wishes to conduct an inspection of the processing facility.

Inspections: Customer inspections are a regular practice for food processing facilities and could occur at any time. OSHA inspections may result from employee complaint, complaint against an outside contractor or a random computer scheduling.

Notification of Inspection: The appropriate company staff must be notified before an inspection can begin. Staff should notify all other company officials and staff members involved with the operation.

Admission of Inspectors: An inspector may not be admitted into the processing facility without the permission of the company president or his/her appointed alternate. All inspectors must comply with all company rules and regulations.

Conference: All inspections are preceded by an opening conference chaired by the company president or his/her appointed alternate to determine the focus and purpose of the inspection.

OSHA Log and Injury Records: The inspector will request a review of the OSHA logs for the past several years and will review the employee injuries and illnesses listed on the logs.

Programs and Procedures: The inspector may inquire about the existence of certain programs or procedures, i.e., quality control or quality assurance, preventative maintenance, housekeeping, hazardous materials, etc. If copies of programs are given to the inspector, it is important that a note be made of the program taken by the inspector.

Inspections: Except for complaint inspections, inspectors may observe any area they choose during the walk-around portion of the inspection. During an OSHA or government inspection, do not walk through the processing area of the processing facility. Go directly to the requested area of concern.

Photography: Action and still photography must be approved by management and are not allowed unless permission is granted.

Samples: If the inspectors take samples during the inspection, duplicate samples must be requested by staff and sent immediately to a laboratory to be tested for the organism or chemical of concern.

Equipment: Never open any doors or covers to any operating equipment in an effort to explain a process to an inspector.

Observations by the Inspector: Staff and management should note any potential hazards that the inspectors point out. The hazard must be corrected before the inspector leaves the premises if at all possible. The sooner the correction is made, the more favorable the impression will be. Inspectors appreciate quick correction and immediate action. They will not ask for immediate correction, but they do expect it.

Personal Electronics: Cellular phones and Personal Digital Assistants (PDAs) are not allowed in manufacturing plants unless approved by management.

PROCESSOR GUIDELINES: PROCESSING FACILITY VISITORS' AGREEMENT

General Rules:
All visitors must agree to abide by all FDA, state and local regulations governing the operation of this facility.

1. Visitors must wear clean outer garments that are washable. Shoes must be in good repair and of leather construction. No open toes.

2. All visitors must wash hands with soap and warm water and sanitize their hands prior to handling strawberries.

3. All visitors are to wear effective hair restraints including hairnets and beard covers.

4. All jewelry, including watches, must be removed when entering the plant. Medical alert bracelets and, in most cases, plain wedding bands are acceptable.

5. Shirt pockets are to be emptied and cleared of pencils, etc., when in the plant.

6. No glass or food items of any kind are permitted in the facility's processing areas. Food may only be consumed in the lunchroom or outside the building.

7. No visitors infected with any infectious or communicable disease, including boils, sore, wounds or any other affliction, which may spread disease, may be in contact with strawberries.

8. Candy, chewing gum, lozenges, etc. are not allowed in the plant.

9. Tobacco is not permitted in the plant. Smoking areas are designated.

10. Extra clothing must be left in the office and not taken into the plant.

11. Cellular phones and Personal Digital Assistants (PDAs) are not allowed in manufacturing plants unless approved by management.

All visitors are expected to comply with the Good Manufacturing Practices required by the US FDA and USDA.

Visitor: _____

Date: _____

PROCESSOR GUIDELINES: WATER QUALITY FOR STRAWBERRY PROCESSING

Water Control Counts with Employees and Customers
Water used in food processing is required to be safe and sanitary. This means that it must meet potable water standards for microbiological activity. If using an on-site well, a water sampling schedule must be in place with sampling results documented showing that the water is suitable for its intended purpose.

Well and municipal water samples should be collected at the point of use to ensure that there has not been contamination within the facility's water delivery system. Only potable water should be used in production areas. Health officials also require proof in the form of a certificate of potability. Plant water supplies should be tested at least once a year for pesticides, heavy metals and microbiology. If you use well water, it is suggested you have it tested quarterly. If municipal water is used, the microbiological quality should be checked to ensure it has not been re-contaminated by leaking pipes, dead-ends or cross connections with waste lines. City water supplies are tested frequently and you should obtain certification papers from City Hall to show regulators.

Water Can Clean, But It Can Also Contaminate
Water of inadequate quality has the potential to be a direct source of contamination and a vehicle for spreading localized contamination in the field, facility, or transportation environments. If water comes in contact with strawberries, its quality dictates the potential for pathogen contamination. If pathogens survive on the strawberries, they may cause food borne illness.

Water can be a carrier of many microorganisms including pathogenic strains of *Escherichia coli*, *Salmonella* spp., *Vibrio cholerae*, *Shigella* spp., *Cryptosporidium parvum*, *Giardia lamblia*, *Cyclospora cayetanensis*, *Toxiplasma gondii,* and the Norwalk and hepatitis A viruses. Even small amounts of contamination with some of these organisms can result in food borne illness.
You should consider the following issues and practices when assessing water quality and in applying controls to minimize microbial food safety hazards. Not all of the following recommendations will be applicable or necessary for all operations. Rather, you should select practices or combinations of practices appropriate to your operation and the quality of your water supply to achieve food safety goals.

- Perform periodic water sampling and microbial testing.
- Document your source of water and the results of random sampling.
- Change water as necessary to maintain sanitary conditions. Develop water change schedules for all processes that use water.
- Clean and sanitize water contact surfaces as often as necessary to ensure the safety of the strawberries.
- Routinely inspect and maintain equipment designed to assist in maintaining water quality, such as chlorine injectors, filtration systems, and backflow devices, to ensure efficient operation.
- Make sure there are no cross-connections between potable and non-potable water supplies. All hoses, taps, or similar sources of possible contamination should be designed to prevent back-flow or siphonage of standing water.

Processing Water
Processing water should be of such quality that it does not contaminate your product. Follow good manufacturing practices to minimize microbial contamination from processing water.
Water quality consistent with U.S. EPA requirements for drinking water or similar standards is recommended. If the plant has its own water source, it must comply with EPA regulations and the chlorination levels must be monitored and recorded.

Reference:
- FDA 21 CFR 110.37(a)-(b) (Sanitary facilities and controls), 21 CFR 110.80(a)(1) (Processes and controls), 21 CFR 110.35(d) (Sanitary operations). OSHA 29 CFR 1910.141(b) (Water supply): http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=110

SHIPPER/PROCESSOR GUIDELINES: COOLER/PROCESSING FACILITY

Document the sanitation measures and maintenance of the cooler facility, refrigeration units, and water sources.

Cooler/Plant Facility Schematic
Have an easily accessible cooler/plant schematic in your files. This is a vital reference for your customers, government regulators, and anyone in your company involved in planning production changes or implementing GMPs. If any parts of the cooling or processing are subcontracted to another facility, those operations should have GMPs of their own and should be included in any third party audit or certification activity. Review and update schematics each year prior to the beginning of the processing season.

Plant Construction and Design
California state and federal regulations require that food processing plants and facilities shall:

- Install sprinkler heads within 18 inches of clearance from any machinery or other objects.
- Have adequate space to store equipment and materials in a way that will maintain sanitary operations and the production of safe food.
- Be designed in a way that reduces the potential for contamination of food, food-contact surfaces, or food-packaging materials with microorganisms, chemicals, filth, or other extraneous material.
- Be constructed in such a manner that floors, walls, and ceilings may be adequately cleaned and kept clean and in good repair; that drip or condensation from fixtures, ducts and pipes does not contaminate food, food-contact surfaces, or food-packaging materials; and that aisles or working spaces are provided between equipment and walls and are adequately unobstructed and of adequate width to permit employees to perform their duties and to protect against contaminating food or food-contact surfaces with clothing or personal contact.
    - To allow proper visual inspection that the facility is clean and to enforce rodent control, no item should be placed within 18 inches of any wall. This spacing also eliminates damage to machines and walls by forklifts, pallets and loads leaning against the wall. It is suggested that the floor of these 18 inches be painted a color different than the floor color.
- Provide adequate lighting in hand-washing areas, dressing and locker rooms, and toilet rooms and in all areas where food is examined, processed, or stored and where equipment or utensils are cleaned; and provide safety-type light bulbs, fixtures, skylights, or other glass suspended over exposed food in any step of preparation or otherwise protect against food contamination in case of glass breakage.
- Provide adequate ventilation or control equipment to minimize odors and vapors (including steam and noxious fumes) in areas where they may contaminate food; and locate and operate fans and other air-blowing equipment in a manner that minimizes the potential for contaminating food, food-packaging materials, and food-contact surfaces. Air coming into processed areas should be filtered to reduce the risk of finished product contamination.
- Provide, where necessary, adequate screening or other protection against pests. Building construction and maintenance must be designed to prevent pest entry.
- Maintain the cooler/plant exterior and grounds in a condition that will provide any visitor or inspector a good first impression of the facilities.

COOLER/PROCESSING FACILITY

Restrooms
Employers are required by law to provide employees with adequate, readily accessible toilet facilities. To comply with regulatory requirements:

- Keep washbasins, toilets, urinals, walls, ceilings and floors clean and in good repair.
- Sanitize basins, toilets and urinals at least twice per shift using an effective bactericide. Empty wastebaskets and sanitary napkin holders frequently.
- Provide self-closing doors.
- Provide doors that do not open into areas where food is exposed to airborne contamination, except where alternate means have been taken to protect against such contamination, such as double doors or positive airflow systems.
- Provide adequate and convenient hand-washing facilities furnished with running water at a suitable temperature, soap, sanitary towels or hand dryers. Multiple use towels should not be used.
- Install washroom fixtures, such as water control valves, of a type designed to protect against recontamination of clean, sanitized hands.
- Post easily understood signs directing employees to wash and, if appropriate, sanitize their hands before they begin work, before returning to work from a break and any time their hands may have become soiled or contaminated. Post these signs in restrooms, in the processing rooms and anywhere employees may handle food or materials and surfaces involved in the production process.
- Reinforce that hand sanitizing does not replace hand washing.
- Construct and maintain waste receptacles in ways that protect against food contamination.
- Store, convey and dispose of rubbish and processing waste so as to minimize odor and the potential for attracting flies and other pests.
- Protect against contamination of surfaces that come in contact with food, water supplies and ground.

SHIPPER/PROCESSOR GUIDELINES: WORKER HEALTH AND HYGIENE

Train workers and document their training in proper hygiene practices to minimize the risks for microbiological contamination and safeguard the worker's health and safety. Implement general sanitation and personal hygiene practices with a written employee training program. Document all training and steps taken to ensure compliance with local, state and federal worker hygiene practices. All individuals (inspectors, buyers, employees, etc.) prior to handling fruit should practice personal hygiene and wash their hands. A proper hand washing procedures checklist is located on page 32.

Hand Washing is a Factor in Keeping Food Clean

Past outbreaks of food borne illness associated with fresh and minimally processed produce have usually been the result of produce becoming contaminated with fecal material. Growers should place a high priority on ensuring the use of practices that minimize the potential for direct or indirect contact of fecal material and fresh produce. Steps to minimize this risk include:

- Have written training procedures on the importance of hand washing and personal hygiene. Document the frequency and content of training meetings.
- Remind employees daily of the importance of hand washing. Have adequate hand washing stations available.
- Document your policy on maintenance of hand washing facilities, including:
    - Sanitation procedures for rinsing and cleaning wash water tanks.
    - Frequency of water level checks (must have ample water at all times).
    - Procedures to ensure that potable water, soap and single use towels are always available (see page 28 for a checklist.)
- Place signs in appropriate places indicating water is for "hand washing purposes only."

Proper Hand Washing Procedures

Proper hand washing has been identified as the single most important factor in reducing the microbiological risk to individuals and food. Proper and frequent hand washing is one of the best ways to keep you and your family healthy, and the food you harvest safe. For a hand washing procedures checklist, see page 32. Hands should be washed before and after eating and smoking.

Proper hand washing before the workday, and after using the bathroom, eating, drinking, or smoking is a simple six-step process:

1. Wet hands with clean water.
2. Apply antibacterial soap.
3. Scrub hands and fingernails for a minimum of 15-20 seconds.
4. Rinse off soap thoroughly with clean water.
5. Dry hands with single-use towels.
6. Discard used towels in the trash.

If you use gloves, they must also be kept clean during the workday. Wash gloves thoroughly and frequently. Take your gloves off and wash your hands as described above. Washing your hands before placing gloves back on reduces the risk of contaminating the inside of the gloves. Hand sanitizers (liquid or gel) are fine provided they are used after hands are washed, rinsed and dried. Hand sanitizers are intended to supplement, not replace hand washing.

Medical Leave and Illness

- Establish and communicate a clear policy that will allow workers who report, or are observed to have symptoms of illness or diarrhea, to be reassigned to activities that do not involve food or food surface contact. In the absence of such a policy, it is probable that a worker will not report an illness to prevent loss of wages. Do not allow sick workers to work around strawberries. Encourage workers to report sick workers.
    - This includes employees with infectious diseases, ill health accompanied by diarrhea, fever, sore throat or open lesions. These employees should not work in contact with strawberries or any equipment used in the packing or sorting of fresh or frozen strawberries, and alternative work should be provided.

WORKER HEALTH AND HYGIENE

- All incidences of bleeding are to be reported to supervisors. Any product or packaging materials contaminated by or in contact with blood must be segregated and disposed of immediately. Tools contaminated by or in contact with blood must be properly sanitized immediately.
- Workers with minor cuts should have those well washed, covered with first aid materials, and then enclosed with rubber gloves.

Typical Signs of Infectious Diseases

The pathogens *Salmonella typhi*, *Shingella* species, *E. coli* 0157:H7 and Hepatitis A virus have a high infectivity, and the ability to produce severe disease. Any worker showing symptoms of an active case of illness that may be caused by any of these pathogens should be excluded from work assignments that involve direct or indirect contact with fresh produce. Below is a partial list of infectious and communicable diseases that are transmitted through food.

Disease	**Symptoms**
Hepatitis A	Fever, Jaundice
Salmonella typhi	Fever
Shingella species	Diarrhea, Fever, Vomiting
Norwalk and Norwalk-like viruses	Diarrhea, Fever, Vomiting
Staphylococcus aureus	Diarrhea, Vomiting
Streptococcus pyogenes	Fever, Sore Throat with Fever

Reference:

- FDA Guide to Minimize Microbial Food Safety Hazards in Fresh Fruits and Vegetables, Section IV, Worker Health and Hygiene: http://vm.cfsan.fda.gov/~dms/prodguid.html
- FDA, 21 CFR 110.20(a)(1)-(4) (Grounds) and (b)(1)-(7) (Plant construction and design).
  California, CDHS Code, Sections 111950-111960 and Sections 111970-112010 (Maintenance of facilities, construction, and design). CDHS code, Sections 112040-112050 (Inspection of buildings): http://www.dhs.ca.gov/ps/fdb/PDF/fsact.pdf
- CDHS Code Section 112015: http://www.dhs.ca.gov/ps/fdb/PDF/fsact.pdf
- CDIR Title 8, Section 3457: Field Sanitation and Worker Hygiene: http://www.dir.ca.gov/Title8/3457.html

SHIPPER/PROCESSOR GUIDELINES:
PROTECTING PROCESSING PLANTS AND SHIPPING OPERATIONS AGAINST FOREIGN MATERIALS

Make Your Processing Facility and Shipping Facility a Glass-Free Zone

- GMPs recommend that except for eyewear, glass should not be allowed in strawberry processing plants.
- Coat lights with plastic or enclose them in plastic shields to prevent the possibility of glass shards falling into strawberries being processed.
- Coat windows, clock facings, forklift lights and all other glass inside the plant with plastic to prevent the possibility of glass shards falling into strawberries being processed.
- Conduct monthly inspections to review the facility for potential glass hazards.
- Limit employee beverages and bottles to break rooms or areas away from strawberry processing areas.
- In case glass cannot be entirely eliminated, a glass procedure must be developed. Glass must be identified and periodically audited.
    - Suggested cleaning procedure: The preferred method of removing glass is to use a high capacity vacuum cleaner. If a vacuum cleaner is unavailable, cleaning and containment may be accomplished with careful and gentle brushing using a broom and dustpan. UNDER NO CIRCUMSTANCE should an air or water hose be used to clean a glass spill.
- Notify a supervisor immediately if there is broken glass in the plant or shipping facility. Work may resume only after the spill area has been inspected and cleared by the supervisor.

Metal Detectors Hunt for Buried Trouble

Metal fragments in strawberry products can come from any number of sources, such as the truck that brought the load to your plant, or worn-out pieces of processing equipment on your production line.

Employees should remove any pens from pockets, exposed key rings, rings (except plain wedding bands), hair clips, earrings, necklaces, any items in pockets or pinned on the clothes above the waist, watches, etc. prior to entering the processing floor.

Use a quality metal detector that can locate both ferrous and non-ferrous material. Test the equipment regularly and keep accurate records showing when those tests were completed.

Incorporate magnetic devices that will pull ferrous metals out of the product prior to final packing, perhaps at several points along the line.

Use the documentation forms on pages 65-66 to aid your employees in the documentation of foreign materials.

Reference:

- FDA, 21 CFR 110.20(b)(5) (Lighting), 21 CFR 110.80(b)(8) (Extraneous material in food): http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=110.20

SHIPPER/PROCESSOR GUIDELINES: METAL DOCUMENTATION FORM

Processing Facility: _____

Name of Person Completing Form: _____

Date	Lot	Metal Review	Product Disposition	Supervisor Notification If Found	Remarks and Supervisor Sign Off

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

SHIPPER/PROCESSOR GUIDELINES: GLASS DOCUMENTATION FORM

Processing Facility: _____

Name of Person Completing Form: _____

Date	Lot	Glass Review	Product Disposition	Supervisor Notification If Found	Remarks and Supervisor Sign Off

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

SHIPPER/PROCESSOR GUIDELINES: PACKAGING STORAGE

Packaging can be a source of food contamination if stored improperly and/or in areas where insects, birds or rodents could come in contact with it. Packaging is not considered by state health officials to be a high potential source of contamination. However, the following should be considered for warehouse handling and storage of packaging material.

Pest Control

- Document the pest control program used for insects, birds and rodent control when storing packaging material in a warehouse. (See pages 68-69 for specific recommendations.)
- Chemicals and/or non-edible materials will not be stored or shipped with food items.

Warehouse Storage

- Have written packaging storage procedures in use.
- Document sanitation and maintenance schedule of areas where packages are stored.
- Keep packaging stock clean and stored in a safe, organized and secure manner.
- Keep warehouse clean and orderly.
- Check daily for insects, birds and rodents when using traps or bait as part of a pest control program. Consult a licensed pest control operator for pest control measures.

SHIPPER/PROCESSOR GUIDELINES: PEST CONTROL

All cooling or processing facilities should have a written pest control program in place that is monitored daily when using traps or bait. A licensed pest control operation should be consulted for possible control measures.

All animals, including mammals, birds, reptiles, and insects, are potential sources of contamination in processing environments because they harbor, or could be a vector for, a variety of pathogenic agents, such as *Salmonella* or *E. coli*. A good pest control program is essential to good plant sanitation. In general, pest problems can be minimized by taking the following precautions.

Establish a Pest Control System
For all facilities, establish a pest control program to reduce the risk of contamination by rodents and other animals. The program should include regular and frequent monitoring of affected and treated areas to accurately assess the program's effectiveness.

Establish Pest Control Procedures

- All procedures should be written and all agrichemicals must be registered for use in food handling establishments.
- Pest control procedures should describe the location of any indoor or outdoor bait stations, glue boards, and insectocutors. Indoor bait traps should be placed every 10 to 15 feet and immediately on each side of doorways – both inside and out. Outside bait traps should be placed every 20 to 20 feet. Document trap or bait station locations with a schematic map. Include information on when placed, when bait was replenished, and/or when the trap was last checked. Make sure all stations are numbered and types of trap(s) are described. Records of bait disappearance and catches must be kept for each bait station and trap. The insect control procedures must be described. If applicable, bird control and control of animals that wander into the facility should be described.
- Maintain a pest control log that includes dates of inspection, inspection report, and steps taken to eliminate any problems. Establish frequent monitoring of affected and treated areas to determine the effectiveness of the treatment applied.
- Maintain the grounds in good condition.
- Grounds in the immediate vicinity of all packing areas should be kept clear of waste, litter, and improperly stored garbage. Keep all grasses cut to discourage the breeding, harboring, and feeding of pests, such as rodents and reptiles.
- Remove any unnecessary articles, including old and inoperative equipment that is no longer used, to eliminate areas that harbor rodents and insects.
- Clean and sanitize daily to remove product or product remnants that attract pests in and around the packing facility and any other packing location where product is handled or stored.
- Maintain adequate surface drainage to reduce breeding places for pests and food contamination by seepage.
- Operate water treatment and disposal systems so that they do not become a source of contamination. If grounds not under your control border the plant, protect your facility by inspection, extermination, or other means to exclude pests, dirt, and filth that may be a source of food contamination.

PEST CONTROL

Monitor and Maintain Facilities Regularly

- Regularly inspect all facilities to check for evidence of pest populations or animal contamination. Minimize the availability of food and water to pests.
- Remove dead or trapped birds, insects, rodents, and other pests promptly to ensure clean and sanitary facilities and to avoid attracting additional pests.
- Ensure that potential nesting or hiding places for pests have been eliminated.
- Clean surfaces soiled by birds or other wildlife.
- If the plant was fogged with insecticide, clean, sanitize and inspect all equipment afterwards to insure removal of all dead insects.
- Follow all applicable label directions, including proper disposal of empty containers.
- Block access of pests into enclosed facilities
- Exclude pests by blocking areas, such as holes in walls, doors, flooring, and vents that allow entrance into the facility. Use screens, wind curtains, and traps.

Reference:

- FDA 21 CFR 110.35(c) (Pest control): http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=110.35

SHIPPER/PROCESSOR GUIDELINES: TRAILER/CARGO CONTAINERS

Do You Know What That Truck's Been Hauling?
Products previously shipped by your carrier can contaminate strawberries. To reduce the possibility of contamination, inspect all carrier vehicles before you load your strawberries.

Visually inspect trailers before loading, checking for:

- Signs of insect infestation or rodents
- Moisture
- Chemical residues
- Foreign material such as glass, metal, debris
- Unusual odors
- Evidence of meat or poultry products
- Tight fitting seals
- Refrigeration units in working order.

Document inspection procedures and practices for harvest trailers. Maintain written procedures for inspecting the sanitation conditions of trailer/cargo containers.

Scrutinize product transportation at each level in the system, including transportation from the field to the plant and on through the channels of distribution. The proper transportation of strawberries helps reduce the potential for microbial contamination. An active and ongoing discussion with personnel responsible for transportation is essential for ensuring the success of any management program designed to deliver safe foods to the consumer.

Microbial cross-contamination from other foods and non-food sources and contaminated surfaces may occur during loading, unloading, storage, and transportation operations. Wherever produce is transported and handled, the sanitation conditions should be evaluated. Trailers used to transport chemicals or waste products should not be used for shipment of food products.

Use the Carrier Inspection Form on page 71 adapted to your own situation. If you're not already performing this procedure, your carrier may object at first. Better to reject a carrier vehicle until it's been sanitized than to have your product rejected because of contamination.

If the truck is full when it leaves your dock, it should have a seal. This seal should be recorded on the bill of lading.

Inform your customers of this policy and document shipments not loaded because of unsatisfactory condition of trailer/cargo container.

Reference:

- FDA, Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables, Section VIII, "Transportation": http://vm.cfsan.fda.gov/~dms/prodguid.html

SHIPPER/PROCESSOR GUIDELINES: TRAILER/CARGO CONTAINERS CHECKLIST

Name of Shipping/Processing Operation _____

Name of Carrier Operation _____

Inspector_____ Date _____

Is refrigeration unit in working order? _____

CARRIER CONDITION

Floor:	Tight _____	Cracks _____	Holes _____
Sides:	Smooth _____	Cracks _____	Broken _____
Roof:	Smooth _____	Cracks _____	Holes _____
Doors:	Excellent _____	Fair _____	Poor _____
Door Seals:	Excellent _____	Fair _____	Poor _____

CARRIER CLEANLINESS

Floor:	Clean _____	Needs Sweeping _____	Filthy _____
Walls:	Clean _____	Dusty_____	Filthy _____
Roof:	Clean _____	Dusty_____	Filthy _____
Odors:	None _____	Off-odors _____	Putrid _____
Insects:	None _____	Evidence _____	Live _____
Rodents:	None _____	Evidence _____	Live _____
Chemicals:	None _____	Evidence _____	Powders _____
Other:	None _____	Evidence _____	Glass, etc. _____

Comments:

_____

Accept: _____ Reject: _____ Reason: _____

Corrective Action: _____ Accepted?: _____

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

SHIPPER/PROCESSOR GUIDELINES: TRACE-BACK

Trace-back is the ability to track food items back to their source (growers, harvesters, etc.). A system to identify the source of strawberries alone cannot prevent the occurrence of a microbiological hazard that may lead to an initial outbreak of food borne disease. However, the ability to identify the source of a product through trace-back serves as an important component of good agricultural and management practices intended to prevent the occurrence of food safety problems. Information gained from trace-back investigation may also be useful in identifying and eliminating a hazardous pathway.

Overview of the Trace-back Process
Once an outbreak is suspected, public health officials begin scientific studies to determine common food items consumed during the period of infection for the pathogen. If these studies implicate a particular food product and hazard analysis shows that other contributing causes were not to blame (for example, cross-contamination, ill food workers, other sources of infectious agent, etc.), health officials attempt to obtain the following information:

- At the Point-of-Service establishment (where the product was sold or prepared), pertinent product identifying information, including product types, packaging, labeling, and lot numbers if applicable, is obtained. Health officials also determine when the product was purchased or prepared, and determine receiving, stock rotation, inventory, handling and shipping procedures. Records are collected about suppliers and shipments of the implicated product to the Point-of-Service over the shelf life of the implicated product.

- Data relating to distribution of the implicated product is charted and analyzed. This analysis is accomplished either by tracing lot numbers, if they are available, or using a shipment delivery time line to identify suspect shipments based on knowledge about the time period when the implicated product was produced and shipped.

- Distributor interview, data collection, and analysis are repeated for each level of distribution until health officials identify the source of the product.

Depending on the contamination involved and the suspected food source, there can be wide variations in the reliability of the data obtained from such studies. Public health investigators must rely on record review and interviews. This method increases the time and resources necessary to trace an implicated product back to its source. Further, review of records that may not be complete and interviews with people whose memories may be imperfect make it more difficult to narrow down the cause(s) of an outbreak.

Advantages of an Effective Trace-back System
Despite the best efforts of food handlers and processors, food may never be completely free of microbial hazards. However, an effective trace-back system, even if only some items carry identification, can give investigators clues that may lead to a specific region, packing facility, or even field, rather than your entire inventory or an entire commodity group. It also builds confidence among regulators and consumers that the industry is truly in control of all phases of production. From a public health perspective, improving the speed and accuracy of tracing implicated food items back to their source may help limit the population at risk in an outbreak and the accompanying publicity. Rapid and effective trace-back can also minimize the unnecessary expenditure of valuable public health resources and reduce consumer anxiety. Tracing implicated food items may also help public health officials to determine potential causes of contamination, thereby providing data for growers, shippers, and others for identifying and minimizing future microbial hazards.

Instituting Effective Trace-back Systems
Because of the diversity of operation sizes in strawberry production and the marketing chain, a trace-back system may be more easily implemented for some companies than others, such as for larger operations that have more direct control over a greater number of steps in the growing/packing/distribution chain. However, industry associations, growers, and handlers are encouraged to consider ways to provide this capability where feasible.

TRACE-BACK

Shippers should examine current company procedures and develop additional procedures if necessary to track individual containers from the farm to the handler, and then to the distributor and the customer in as much detail as possible. A trace-back system should document the source of a product and a mechanism for marking or identifying the product that can follow the product from the farm to the consumer. Documentation at minimum should include:

- Ranch identification and date of harvest (including harvester if possible)
- Shipper
- Who purchased product and date of sale and shipment
- Anyone else who handled the strawberries, from grower to cooler to receiver.

Bottom Line: In the case of a food safety emergency, the government will and can legally ask for access and a copy of records to assess whether the food is adulterated and presents a threat of serious adverse health consequences to humans. You need to know when your food left, who handled it, and where it went to protect you and your operation.

Positive Lot Identification
In the event of a food borne illness associated with your product, the ability to quickly trace the product through your plant to the delivering grower will minimize the impact to your operation in terms of downtime, product recall/retrieval costs, and negative public opinion. Adequate coding and distribution records are critical. Lack of a coding system and accurate records could lead to a total product recall with notification to all customers.

Every pallet of strawberries that comes into your cooler or processing facility should be assigned a unique lot number for control purposes. The number should tie back to the lot number assigned by the grower. Your lot number identifies the product to everyone who will be associated with it, and is a major component in a recall. It should remain with the lot through all processing steps: grading, chemical and microbiological testing, storage and shipping.

As an Example: Julian Code Dating
For example, lot codes may use Julian dating. The lot code “5030” indicates the 30th day of the year 2005. The year is the first number (5). The “030” is the number of days since Jan. 1. The Julian date may also be written “0305,” with “030” as the number of days since the beginning of the calendar year and “5” as the year. This varies from shipper to shipper.

Be consistent in your lot numbering so there is no confusion. Lot codes should at minimum be traceable to grower, production line, and production date and time. This code should be listed on the shipping invoice and plant records. Computer records of lots sent with shipments will make recall easier and product tracing significantly faster.

Reference:

- FDA Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables, Section IX, Trace-back: http://vm.cfsan.fda.gov/~dms/prodguid.html

SHIPPER/PROCESSOR GUIDELINES: PRODUCT RECALL

Recalls – Mock and Real Should be Performed Annually
No shipper or processor wants to face a product recall. However, having a product recall program in place is invaluable when a given lot is found to be in violation of regulatory requirements. It also demonstrates to regulatory officials that if necessary, you can recall any given lot number from its destination. In fact, mock recalls are part of a sound GMPs.

To begin, appoint a recall coordinator and team. Use a recall team contact list to identify the recall team. The recall team should include at minimum a coordinator, a designated spokesperson, and representatives from marketing, distribution, technical, and production departments. Give the coordinator the authority to notify each customer who has received strawberries that must be called back. Sample recall documents follow this section.

Conduct a mock recall to determine if you are able to produce accurate information on a timely basis, verifying that all affected product can be rapidly identified and removed from the marketplace. Mock recalls are important as they:

- Test the overall effectiveness of your recall plan
- Assess supplier/customer recall programs
- Evaluate the reliability and accuracy of trace-back systems
- Evaluate response time
- Assess the accuracy of record keeping systems
- Identify opportunities for program improvement.

Implementing the Recall

1. The recall coordinator first determines the lot, day codes and total number of cases involved. All products are tracked by lot number, and that number should be shown on all documents from production to shipping.
2. Find out where every pallet and tray has been shipped. The lot number will reveal every customer who received the strawberries in question.
3. Notify each of those customers that they must return the product to your facility.
4. As the product arrives back at your plant, account for every case and store it safely, clearly marked “HOLD”, in a holding location away from other strawberries.
5. Talk with the appropriate regulatory agency to decide how or whether to dispose of the affected strawberries.
6. Strawberries can then be reworked or destroyed, depending on the agreement reached with the regulatory agency.
7. If the product is still usable, it must be retested and re-evaluated before shipping. It is highly recommended that a third party be used to confirm the effectiveness of treatment. A regulatory agency may have to give its approval before the product can be shipped.
8. Make all your recall records available to everyone involved who has a legal right to see them.
9. Alert the California Strawberry Commission of the recall by calling (831) 724-1301.

Types of FDA Action
According to the FDA, a **recall** is the removal of a marketed product considered to be in violation of FDA regulations. **Market withdrawal** is the removal of a distributed product, which involves a minor violation not subject to legal action by FDA. **Stock recovery** is the removal of product that has not been marketed or has not left direct control of the company.

PRODUCT RECALL

Recalls
Class I: Reasonably likely that the use of, or exposure to, a contaminated product will cause serious health consequences or death.
Class II: Reasonably likely that the use of, or exposure to a contaminated product may cause temporary or medically reversible adverse health consequences, or where the probability of serious adverse health consequences is remote.
Class III: Reasonably likely that the use of, or exposure to a contaminated product is not likely to cause adverse health consequences.

The FDA does not have the authority to order a recall under the Food, Drug, and Cosmetic Act but it can get a court order to seize product if a recall is requested and the company does not comply. In FDA guidelines, companies are expected to undertake recalls when asked by FDA, to notify FDA when recalls are started and to make progress reports to FDA on the recall.

Recall Communication
It is critical that recall communications be handled correctly and as expeditiously as possible. Only designated people should speak to the media. In the event it becomes necessary to issue a press release, the following information should be included:

- Company name, contact names and phone numbers
- Address, including city and state
- Quantity and/or type of product
- Reasons for recall and a statement of possible hazard
- Area of distribution
- Specific information as to how the product can be identified
- Status and number of illnesses or injury
- A brief explanation of what is known about the problem
- Information on what consumers should do with the product and where they can get additional information.

The Company's President/CEO should approve any changes made to the recall procedure.

SHIPPER/PROCESSOR GUIDELINES: RECALL TEAM CONTACT LIST

Name of Operation: _____

Date List Updated: _____

Contact	Information
President/CEO	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:
Recall Coordinator	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:
Distribution	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:
Production	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:
Quality Assurance	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:
Consumer Affairs	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:
Accounting	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:
Legal Counsel	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:
Public Relations	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:
Technical/Information Technology	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:
Sales and Marketing	Phone #: Fax #: Cell Phone #: Home Phone #: E-mail:

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

SHIPPER/PROCESSOR GUIDELINES: RECALL TEAM RESPONSIBILITIES

Recall Coordinator

1. Manage activities related to recall.
2. Convene recall team meetings and coordinate activities.
3. Keep recall master file.
4. Maintain recall plan.

Distribution

1. Stop all in-transit shipments of questionable material, and arrange for return of product to collection points.
2. Prepare inventory and distribution status of product showing where, when, and to whom quantity shipped.

Production and Quality Assurance

1. Prepare lot identification.
2. Halt production of product if related problem.
3. Investigate cause of problem. Check all records.
4. Clear product only as recommended by the Recall Coordinator.
5. Do not destroy any product without observation by FDA if a health hazard is involved.
6. Keep records of any destruction.

Consumer Affairs

1. Prepare responses for consumers.
2. Answer all consumer inquiries.

Accounting

1. Set up collection system to determine cost of recall.

Legal Counsel

1. Handle legal implications.
2. Review all press and company correspondence.

Public Relations

1. Prepare press releases.
2. Prepare message points for people authorized to speak to the press.
3. Handle all media inquiries.
4. Coordinate all activities through Recall Coordinator.

Technical

1. Obtain lot identification and samples.
2. Obtain product analysis.
3. Coordinate all action through the Recall Coordinator until problem is solved.
4. Consult with lab.
5. Consult with regulatory agencies if there is a recall.

Sales & Marketing

1. Notify sales managers and brokers.
2. Arrange for pick-up at retail if necessary.
3. Arrange for proper credit to be given.
4. Aid in contacting customers.
5. Utilize sales force in actual product pick-up in issuance of credit.

SHIPPER/PROCESSOR GUIDELINES: DOCUMENTATION AND VERIFICATION CHECKLIST OF GROWERS

Verification of implementation of the voluntary Food Safety Program (FSP) by individual growers can be done through written documentation and on-site inspection. Growers utilizing safe agricultural and handling practices will minimize the potential for microbiological contamination.

Shippers and Processors: For each grower...

1. Verify that the grower has an individual FSP.
2. Maintain a copy of that grower's Grower Implementation Checklist (sample copy on page 6).
3. Conduct in-house or third party on-site inspections for grower implementation of the FSP.
4. Suggested practice: Have a written grower food safety agreement (sample copy on page 79).

Shipping Operation _____

Name of Person Filling Out Form _____

Date _____

Grower Name & I. D. Code	Verify Grower's FSP	Obtain Copy of Grower's Contact Form & Implementation Checklist	Conduct On-site Inspection	Comments

Note: This form is only an example and should be modified by the appropriate technical experts and legal advisors to meet the needs of your operation.

SHIPPER/PROCESSOR GUIDELINES: GROWER FSP AGREEMENT

Purpose:
The purpose of this agreement is to ensure that the strawberries being produced and handled meet the guidelines of the voluntary California Strawberry Commission Food Safety Program (FSP). The FSP is a comprehensive, integrated program of voluntary guidelines for strawberry production and handling which enhances the safety and quality of the fruit shipped to markets. The program uses Good Agricultural Practices (GAPs) as its basis for minimizing the risks of microbial contamination.

Agreement:

I, _____ agree to use all reasonable efforts to comply with the
(name of grower)

guidelines provided in the California Strawberry Commission's FSP when growing strawberries

for delivery to _____.
(name of shipper/processor)

Grower Signature:_____

Food Safety Supervisor Signature: _____

Date: _____

U.S. FOOD AND DRUG ADMINISTRATION AND DEPARTMENT OF HEALTH SERVICES: PURPOSE OF A FOOD SECURITY PROGRAM

This guidance represents the Food and Drug Administration and the U.S. Department of Health Services' current thinking on the kinds of measures that strawberry growers, shippers and processors may take to minimize the risk that food under their control will be subject to tampering or other malicious, criminal, or terrorist actions. This guidance does not create or confer any rights for or on any person and does not operate to bind FDA or the public.

Not all of the guidance contained in this document may be appropriate or practical for every food establishment, particularly smaller facilities and distributors. FDA recommends that operators review the guidance in each section that relates to a component of their operation, and assess which preventative measures are suitable. The Commission has drawn from the FDA recommendations and included those applicable to the production and shipping or processing of strawberries.

NOTE: Any facility engaged in manufacturing, processing, packing or holding food for consumption in the United States must be registered with the Secretary of Public Health Emergency Awareness.

MANAGEMENT

Prepare for the possibility of tampering or other malicious, criminal, or terrorist actions.

- Assign responsibility for security to knowledgeable individuals.
- Conduct an initial assessment of food security procedures and operations, which FDA recommends be kept confidential.
- Have a security management strategy to prepare for and respond to tampering and other malicious, criminal, or terrorist actions, both threats and actual events, including identifying, segregating, and securing affected product.
- Plan for emergency evacuation, including preventing security breaches during evacuation.
- Maintain any floor or flow plan in a secure, off-site location.
- Become familiar with the emergency response system in the community.
- Make management aware of 24-hour contact information for local, state, and federal police/fire/rescue/health/homeland security agencies.
- Make staff aware of who in management they should alert about potential security problems (24-hour contacts).
- Promote food security awareness to encourage all staff to be alert to any signs of tampering or other malicious, criminal, or terrorist actions or areas that may be vulnerable to such actions, and report any findings to identified management (for example, providing training, instituting a system of rewards, building security into job performance standards).
- Build an internal communication system to inform and update staff about relevant security issues.
- Have a strategy for communicating with the public (for example, identifying a media spokesperson, preparing generic press statements and background information, and coordinating press statements with appropriate authorities).

Supervision

- Provide an appropriate level of supervision to all staff, including cleaning and maintenance staff, contract workers, data entry and computer support staff, and especially, new staff.
- Conduct routine security checks of the premises, including automated manufacturing lines, utilities and critical computer data systems (at a frequency appropriate to the operation) for signs of tampering or malicious, criminal, or terrorist action or areas that may be vulnerable to such actions.

Recall strategy

- Identify the person responsible, and a backup person.
- Provide for proper handling and disposition of recalled product.
- Identify customer contacts, addresses and phone numbers.

U.S. FOOD AND DRUG ADMINISTRATION AND DEPARTMENT OF HEALTH SERVICES

Investigation of Suspicious Activity

- Investigate threats or information about signs of tampering or other malicious, criminal, or terrorist actions.
- Alert appropriate law enforcement and public health authorities about any threats of or suspected tampering or other malicious, criminal, or terrorist actions.

Evaluation Program

- Evaluate the lessons learned from past tampering or other malicious, criminal, or terrorist actions and threats.
- Review and verify, at least annually, the effectiveness of the security management program (for example, using knowledgeable in-house or third party staff to conduct tampering or other malicious, criminal, or terrorist action exercises and mock recalls and to challenge computer security systems), revise the program accordingly, and keep this information confidential.
- Perform random food security inspections of all appropriate areas of the facility (including receiving and warehousing, where applicable) using knowledgeable in-house or third party staff, and keep this information confidential.
- Verify that security contractors are doing an appropriate job, when applicable.

HUMAN ELEMENT-STAFF

Under federal law, food establishment operators are required to verify the employment eligibility of all new hires, in accordance with the requirements of the Immigration and Nationality Act, by completing the INS Employment Eligibility Verification Form (INS Form 1-9). Completion of Form 1-9 for new hires is required by 8 USC 1324a and nondiscrimination provisions governing the verification process are set forth at 8 USC 1324b.

FDA recommends that food establishment operators consider:

Screening (pre-hiring, at hiring, post-hiring)

- Examine the background of all staff (including seasonal, temporary, contract, and volunteer staff, whether hired directly or through a recruitment firm) as appropriate to their position, considering candidates, access to sensitive areas of the facility and the degree to which they will be supervised and other relevant factors. For example, obtain and verify work references, addresses, and phone numbers, participating in one of the pilot programs managed by the Immigration and Naturalization Service and the Social Security Administration. (These programs provide electronic confirmation of employment eligibility for newly hired employees. For more information, call the INS SAVE Program toll free at (888) 164-1218, fax a request for information to (202) 511-9981, or write to US/INS, SAVE Program, 425 I Street, NW, ULLICO-4th Floor, Washington, D.C. 20536. These pilot programs may not be available in all states. Have a criminal background check performed by local law enforcement or by a contract service provider [Remember to first consult any state or local laws that may apply to the performance of such checks]).

Note: screening procedures should be applied equally to all staff, regardless of race, national origin, religion, and citizenship or immigration status.

Daily Work Assignments

- Know who is and who should be on premises, and where they should be located, for each shift.
- Keep information updated.

U.S. Food and Drug Administration and Department of Health Services

Identification

- Establish a system of positive identification and recognition that is appropriate to the nature of the workforce (for example, issuing uniforms, name tags, or photo identification badges with individual control numbers, color coded by area of authorized access), when appropriate.
- Collect the uniforms, name tag, or identification badge when a staff member is no longer associated with the establishment.

Restricted Access

- Identify staff that require unlimited access to all areas of the facility.
- Reassess levels of access for all staff periodically.
- Limit access so staff enter only those areas necessary for their job functions and only during appropriate work hours (for example, using key cards or keyed or cipher locks for entry to sensitive areas, color coded uniforms [remember to consult any relevant federal, state or local fire or occupational safety codes before making any changes]).
- Change combinations, re-key locks and/or collect the retired key card when a staff member who is in possession of these is no longer associated with the establishment, and additionally as needed to maintain security.

Personal Items

- Restrict the type of personal items allowed in establishment.
- Allow in the establishment only those personal use medicines that are necessary for the health of staff and ensuring that these personal use medicines are properly labeled and stored away from food handling or storage areas.
- Prevent staff from bringing personal items (for example, lunch containers, purses) into food handling or storage areas.
- Provide for regular inspection of contents of staff lockers (for example, providing metal mesh lockers, company issued locks), bags, packages, and vehicles when on company property (Remember to first consult any federal, state, or local laws that may relate to such inspections).

Training in Food Security Procedures

- Incorporate food security awareness, including information on how to prevent, detect, and respond to tampering or other malicious, criminal, or terrorist actions or threats, into training programs for staff, including seasonal, temporary, contract and volunteer staff.
- Provide periodic reminders of the importance of security procedures (for example, scheduling meetings, providing brochures or payroll stuffers).
- Encourage staff support (for example, involving staff in food security planning and the food security awareness program), to demonstrate the importance of security procedures.

Unusual Behavior

- Watch for unusual or suspicious behavior by smployees (for example, staff who, without an identifiable purpose, stay unusually late after the end of their shift, arrive unusually early, access files/information/areas of the facility outside of the areas of their responsibility; remove documents from the facility; ask questions on sensitive subjects; bring cameras to work).

Staff Health

- Be alert for atypical staff health conditions that staff may voluntarily report and absences that could be an early indicator of tampering or other malicious, criminal, or terrorist actions (for example, an unusual number of staff who work in the same part of the facility reporting similar symptoms within a short time frame), and report such conditions to local health authorities.

U.S. FOOD AND DRUG ADMINISTRATION AND DEPARTMENT OF HEALTH SERVICES

HUMAN ELEMENT-PUBLIC

FDA recommends that food establishment operators consider:

Visitors (for example, contractors, supplier representatives, delivery drivers, customers, couriers, pest control representatives, third-party auditors, regulators, reporters, tours)

- Inspect incoming and outgoing vehicles, packages and briefcases for suspicious, inappropriate or unusual items or activity, to the extent practical.
- Restrict entry to the establishment (for example, checking visitors in and out at security or reception, requiring proof of identity, issuing visitors badges that are collected upon departure, accompanying visitors).
- Ensure that there is a valid reason for the visit before providing access to the facility—beware of unsolicited visitors.
- Verify the identity of unknown visitors.
- Restrict access to food handling and storage areas (for example, accompanying visitors, unless they are otherwise specifically authorized).
- Restrict access to locker room.

FACILITY

FDA recommends that food establishment operators consider:

Physical Security

- Protect perimeter access with fencing or other deterrent, when appropriate.
- Secure doors (including freight loading doors, when not in use and not being monitored, and emergency exits), windows, roof openings/hatches, vent openings, ventilation systems, utility rooms, ice manufacturing and storage rooms, loft areas, trailer bodies, tanker trucks, railcars, and bulk storage tanks for liquids, solids, and compressed gases, to the extent possible (for example, using locks, jimmy plates, seals, alarms, intrusion detection sensors, guards, monitored video surveillance [remember to consult any relevant federal, state or local fire or occupational safety codes before making any changes]).
- Use metal or metal-clad exterior doors to the extent possible when the facility is not in operation, except where visibility from public thoroughfares is an intended deterrent (remember to consult any relevant federal, state or local fire or occupational safety codes before making any changes).
- Minimize the number of entrances to restricted areas (remember to consult any relevant federal, state or local fire or occupational safety codes before making any changes).
- Secure bulk unloading equipment (for example, augers, pipes, conveyor belts, and hoses) when not in use and inspect the equipment before use.
- Account for all keys to establishment (for example, assigning responsibility for issuing, tracking, and retrieving keys).
- Monitor the security of the premises using appropriate methods (for example, using security patrols [uniformed and/or plain-clothed], video surveillance).
- Minimize, to the extent practical, places that can be used to temporarily hide intentional contaminants (for example, minimizing nooks and crannies, false ceilings).
- Provide adequate interior and exterior lighting, including emergency lighting, where appropriate, to facilitate detection of suspicious or unusual activities.
- Implement a system of controlling vehicles authorized to park on the premises (for example, using placards, decals, key cards, keyed or cipher locks, issuing passes for specific areas and times to visitors, vehicles).
- Keep parking areas separated from entrances to food storage and processing areas and utilities, where practical.
- Limit poisonous and toxic chemicals in the establishment to those that are required for the operation and maintenance of the facility and those that are being held for sale.

- Store poisonous and toxic chemicals as far away from food handling and storage areas as practical.

Storage and Use of Poisonous and Toxic Chemicals (for Example, Cleaning and Sanitizing Agents, Pesticides)

- Limit access to and secure storage areas for poisonous and toxic chemicals that are not being held for sale (for example, using keyed or cipher locks, key cards, seals, alarms, intrusion detection sensors, guards, monitored video surveillance [remember to consult any relevant federal, state or local fire codes that may apply before making any changes]).
- Ensure that poisonous and toxic chemicals are properly labeled.
- Use pesticides in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (for example, maintaining rodent bait that is in use in covered, tamper-resistant bait stations).
- Know what poisonous and toxic chemicals should be on the premises and keep track of them.
- Investigate missing stock or other irregularities outside a normal range of variation and alert appropriate law enforcement and public health authorities about unresolved problems, when appropriate

OPERATIONS

FDA recommends that food establishment operators consider:

Incoming Materials and Contract Operations

- Use only known, appropriately licensed or permitted (where applicable) contract manufacturing and packaging operators and sources for all incoming materials, including ingredients, compressed gas, packaging, labels, and materials for research and development.
- Take reasonable steps to ensure that suppliers, contract operators and transporters practice appropriate food security measures (for example, auditing, where practical, for compliance with food security measures that are contained in purchase and shipping contracts or letters of credit, or using a vendor approval program).
- Authenticate labeling and packaging configuration and product coding/expiration dating systems (where applicable) for incoming materials in advance of receipt of shipment, especially for new products.
- Request locked and/or sealed vehicles/containers/railcars, and, if sealed, obtain the seal number from the supplier and verify it upon receipt. Make arrangements to maintain the chain of custody when a seal is broken for inspection by a governmental agency or as a result of multiple deliveries.
- Request that the transporter have the capability to verify the location of the load at any time, when practical.
- Establish delivery schedules. Refuse unexplained, unscheduled deliveries or drivers, and investigating delayed or missed shipments.
- Supervise off-loading of incoming materials, including off-hour deliveries.
- Reconcile the product and amount received with the product and amount ordered and the product and amount listed on the invoice and shipping documents, taking into account any sampling performed prior to receipt.
- Investigate shipping documents with suspicious alterations.
- Inspect incoming materials, including ingredients. compressed gas, packaging, labels, product returns, and materials for research and development, for signs of tampering, contamination or damage. Be alert to abnormal powders, liquids, stains, or odors, evidence of resealing, compromised tamper-evident packaging, or “counterfeiting” (for example, inappropriate or mismatched product identity, labeling, product lot coding or specifications, absence of tamper-evident packaging when the label contains a tamper-evident notice), when appropriate.

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- Evaluate the utility of testing incoming ingredients, compressed gas, packaging, labels, product returns, and materials for research and development to detect tampering or other malicious, criminal, or terrorist action.
- Reject suspect food.
- Alert appropriate law enforcement and public health authorities about evidence of tampering, "counterfeiting" or other malicious, criminal, or terrorist action.

Storage

- Enforce a system to receive, store, and handed distressed, damaged, returned, and rework products to minimize their potential for being compromised or to compromise the security of other products (for example, destroying products that are unfit for human or animal consumption, products with illegible codes, products of questionable origin, and products returned by consumers to retail stores).
- Keep track of incoming materials and materials in use, including ingredients, compressed gas, packaging, labels, salvage products, rework products, and product returns.
- Investigate missing or extra stock or other irregularities outside a normal range of variability and report unresolved problems to appropriate law enforcement and public health authorities, when appropriate.
- Store product labels in a secure location and destroy outdated or discarded product labels.
- Minimize reuse of containers, shipping packages, cartons, etc., where practical.

Security of Water and Utilities

- Limit, to the extent practical, access to controls for airflow, water, electricity, and refrigeration.
- Secure non-municipal water wells, hydrants, storage, and handling facilities.
- Ensure that water systems and trucks are equipped with backflow prevention.
- Chlorinate water systems and monitor chlorination equipment, where practical, and especially for non-municipal water systems.
- Test non-municipal sources for potability regularly, as well as randomly, and alert to changes in the profile of the results.
- Stay attentive to the potential for media alerts about public water provider problems, when applicable.
- Identify alternate sources of potable water for use during an emergency situation where normal water systems have been compromised (for example, trucking from an approved source, treating on-site or maintaining on-site storage).

Finished Products

- Be sure that public storage warehousing and shipping operations (vehicles and vessels) practice appropriate security measures (for example, auditing, where practical, for compliance with food security measures that are contained in contracts or letters of guarantee).
- Perform random inspection of storage facilities, vehicles, and vessels.
- Evaluate the utility of finished product testing to detect tampering or other malicious, criminal, or terrorist actions.
- Request locked and/or sealed vehicles/containers/railcars and provide the seal number to the consignee.
- Request that the transporter have the capability to verify the location of the load at any time.
- Establish scheduled pickups, and don't accept unexplained, unscheduled pickups.
- Keep track of finished products.
- Investigate missing or extra stock or other irregularities outside a normal range of variation and alert appropriate law enforcement and public health authorities about unresolved problems, when appropriate.

- Advise sales staff to be on the lookout for counterfeit products and to alert management if any problems are detected.

Mail/Packages

- Implement procedures to ensure the security of incoming mail and packages (for example, locating the mailroom away from food processing and storage areas; securing mailroom; visual or x-ray mail/package screening; following U.S. Postal Service guidance).

Access to Computer Systems

- Restrict access to computer process control systems and critical data systems to those with appropriate clearance (for example, using passwords, firewalls).
- Eliminate computer access to a staff member who is no longer associated with the establishment.
- Establish a system of traceability of computer transactions.
- Review the adequacy of virus protection systems and procedures for backing up critical computer based data systems.
- Validate the computer security system.

EMERGENCY POINT OF CONTACT

U.S. Food and Drug Administration
5600 Fishers Lane
Rockville, MD 2085
301-443-1240

If a food establishment operator suspects that any of his/her products that are regulated by the FDA have been subject to tampering, "counterfeiting," or other malicious, criminal, or terrorist action, FDA recommends that he/she notify the FDA 24-hour emergency number at 301-443-1240 or call the local FDA District Office. FDA District Office telephone numbers are listed at: http://www.fda.gov/ora'inspect_ref/ iom/iomoradir.html. FDA recommends that the operator also notify appropriate law enforcement and public health authorities.

Reference:

Guidance for Industry: Food Producers, Processors, and Transporters. Food Security Preventative Measures Guidance. FDA: http://www.cfsan.fda.gov/~dms/secguid.html

CONTACT INFORMATION: CA STATE ORGANIZATIONS

University of California

University of California……..Ph: 530-752-2647
Food Safety Program
Davis, CA 95616

University of California……..Ph: 530-752-1436
Food Science & Technology
Davis, CA 95616-8598

Occupational Safety & Health Administration……Ph: 415-975-4310
71 Stevenson St., Room 420
San Francisco, CA 94105
http://www.osha.gov/

U.S. Food & Drug Administration……Ph: 949-608-2900
19701 Fairchild
Irvine, CA 92612

California State Agencies:

CA Department of Health Services……Ph: 916-445-4171
P.O. Box 997413
Sacramento, CA 95899
www.dhs.ca.gov

CA Department of Food & Agriculture……Ph: 916-654-0466
1220 N Street
Sacramento, CA 95814
www.cdfa.ca.gov

CA Department of Industrial Relations……..Ph: 415- 703-5070
455 Golden Gate Avenue
San Francisco CA 94102
www.dir.ca.gov

CA Department of Pesticide Regulation……Ph: 916-445-4300
1001 I Street
Sacramento, CA 95812
www.cdpr.ca.gov

CA Department of Water Resources……..Ph: 916-653-5791
1416 9th Street
Sacramento, CA 95814
www.water.ca.gov

CA Environmental Protection Agency……Ph: 916-551-1313
1001 I Street
P.O. Box 2815
Sacramento, CA 95812
www.calepa.ca.gov

CA STATE ORGANIZATIONS

CAL-OSHA…….....Ph: 510-622-2891
Consultation Service
1515 Clay Street, Ste. 1103
Oakland, CA 94612
www.dir.ca.gov/dosh/consultation_offices.html

Division of Labor Standards Enforcement…….....Ph: 415-703-4810
455 Golden Gate Avenue, 9th Floor
San Francisco, CA 94102
www.dir.ca.gov/dlse/DistrictOffices.htm

CONTACT INFORMATION: UC COOPERATIVE EXTENSION OFFICES

District 1: San Diego, Imperial & Riverside Counties

Imperial……Ph: 760-352-9474
1050 East Holton Road
Holtville CA, 92250-9615
Fax: 760-352-0846
http://ceimperial.ucdavis.edu/

Riverside……..Ph: 760-352-9474
21150 Box Springs Road
Moreno Valley CA, 92557
Fax: 760-352-0846
http://ceimperial.ucdavis.edu/

San Diego……Ph: 858-694-2845
5555 Overland Avenue Bldg. 4
San Diego CA, 92123-1219
Fax: 858-694-2849
http://cesandiego.ucdavis.edu/

District 2: Orange, Los Angeles & San Bernardino Counties

Los Angeles…….....Ph: 323-260-2267
4800 Cesar Chavez Avenue
Los Angeles, CA 90022
Fax 323-260-5208
http://celosangeles.ucdavis.edu/

Orange……Ph: 714-708-1606
1045 Arlington Drive, Gate 4
Costa Mesa, CA, 92626
Fax: 714-708-2754
http://ceorange.ucdavis.edu/

San Bernardino…….....Ph: 909-387-2171
777 East Rialto Avenue
San Bernardino CA, 92415
Fax: 909-387-3306
http://cesanbernardino.ucdavis.edu/

District 3: San Luis Obispo & Santa Barbara Counties

Santa Barbara……Ph: 805-692-1730
305 Camino Del Remedio
Santa Barbara, CA 93110
Fax: 805-692-1731
http://cesantabarbara.ucdavis.edu/

San Luis Obispo……Ph: 805-781-5940
2156 Sierra Way, Suite C
San Luis Obispo CA, 93401
Fax: 805-781-4316
http://cesanluisobispo.ucdavis.edu/

UC COOPERATIVE EXTENSION OFFICES

District 4: Ventura

Ventura……Ph: 805-645-1451
669 County Square Dr., #100
Ventura CA, 93003-5401
Fax: 805-645-1474
http://ceventura.ucdavis.edu/

District 5: Madera, Merced & Fresno Counties

Fresno……..Ph: 559-456-7285
1720 South Maple Avenue
Fresno CA, 93702
Fax: 559-456-7575
http://cefresno.ucdavis.edu/

Madera…….....Ph: 559-675-7879
328 Madera Avenue
Madera CA, 93637
Fax: 559-675-0639
http://cemadera.ucdavis.edu/

Merced……Ph: 209-385-7403
2145 West Wardrobe Avenue
Merced CA, 95340-6496
Fax: 209-722-8856
http://cemerced.ucdavis.edu/

District 6: Santa Cruz & Monterey Counties

Monterey……Ph: 831- 759-7350
1432 Abbott Street
Salinas CA, 93901
Fax: 831-758-3018
http://cemonterey.ucdavis.edu/

Santa Cruz……Ph: 831-763-8040
1432 Freedom Boulevard
Watsonville CA, 95076-2796
Fax: 831-763-8006
http://cesantacruz.ucdavis.edu/

CONTACT INFORMATION:
CA COUNTY AGRICULTURAL COMMISSIONERS

District 1: San Diego, Imperial & Riverside Counties

Imperial…….....Ph: 909-955-3000
150 South 9th Street
El Centro, CA 92243-2850
Fax: 909-955-3012
http://www.co.riverside.ca.us/

Riverside…….....Ph: 909-955-3000
4080 Lemon Street, Room 19
Riverside, CA 92502
Fax: 909-955-3012
http://www.co.riverside.ca.us/

San Diego……Ph: 858-694-2739
5555 Overland Avenue, Bldg. 3
San Diego, CA 92123
Fax: 858-565-7046
http://www.sdcawm.org

District 2: Orange, Los Angeles & San Bernardino Counties

Los Angeles……Ph: 626-575-5472
12300 Lower Azusa Road
Arcadia, CA 91006
Fax 626-350-3243
http://acwm.co.la.ca.us/

San Bernardino……Ph:909-387-2115
777 East Rialto Avenue
San Bernardino, CA 92415
Fax 909-387-2449
http://www.co.san-bernardino.ca.us/awm/

Orange……Ph: 714-447-7100
1750 S. Douglass Road, Bldg. D
Anaheim, CA 92806
Fax: 714-567-6203
http://www.oc.ca.gov/

District 3: San Luis Obispo & Santa Barbara Counties

Santa Barbara……Ph: 805-681-5600
263 Camino Del Remedio
Santa Barbara, CA 93110
Fax: 805-681-5603
http://countyofsb.org/agcomm/default.asp

CA COUNTY AGRICULTURAL COMMISSIONERS

San Luis Obispo……...Ph: 805-781-5910
2156 Sierra Way, Ste. A
San Luis Obispo, CA 93401
Fax: 805-781-1035
http://www.sloag.org/

District 4: Ventura

Ventura……Ph: 805-933-8415
815 E. Santa Barbara St.
Santa Paula, CA 93061
Fax: 805-525-8922
http://www.countyofventura.org/index.asp

District 5: Madera, Merced & Fresno Counties

Fresno……...Ph: 559-456-7510
1730 S. Maple Avenue
Fresno, CA 93702-4596
Fax: 559-456-7379
www.co.fresno.ca.us/4010/agwelcm.htm

Madera……Ph: 559-675-7876
332 Madera Ave.
Madera, CA 93637-5499
Fax: 559-674-4071
www.madera-county.comagcommissioner

Merced……Ph: 209-385-7431
2139 Wardrobe Ave.
Merced, CA 95340-6495
Fax: 209-725-3536
http://www.co.merced.ca.us/ag/index.html

District 6: Santa Cruz & Monterey Counties

Monterey……..Ph: 831-759-7325
1428 Abbott Street
Salinas, CA 93901
Fax: 831-422-5003
http://www.co.monterey.ca.us/ag/

Santa Cruz……Ph: 831-763-8080
175 Westridge Dr.
Watsonville, CA 95076
Fax: 831-763-8255
http://www.co.santa-cruz.ca.us/AgCom/AgCom.htm

CONTACT INFORMATION: FEDERAL AGENCIES

U.S. Environmental Protection Agency…….. ……Ph: 415-947-8000
75 Hawthorne Street
San Francisco, CA 94105
Toll Free: 866-EPA-WEST
http://www.epa.gov/region09/

U.S. Food & Drug Administration……Ph: 510-337-6700
1431 Harbor Bay Parkway
Alameda, CA 94502-7070
Ph: 510-337-6700
http://www.fda.gov/default.htm

U.S. Food & Drug Administration……Ph: 949-608-2900
Los Angeles District Office
19701 Fairchild
Irvine, CA 92612
http://www.fda.gov/comments.html

Occupational Safety & Health Administration……Ph: 415-975-4310
U.S. Dept. of Labor
71 Stevenson Street, Room 420
San Francisco, CA 94105
http://www.osha.gov/

CONTACT INFORMATION: LABORATORIES

Anaheim / Irvine / San Diego

Del Mar Analytical…….....Ph: 949-261-1022
17461 Derian Avenue, Ste. 100
Irvine, CA 92614
Fax: 949-261-1228
www.dmalabs.com

Irving Analytical Labs…….Ph: 949-951-4425
10 Vanderbilt
Irvine, CA 92618
Toll Free: 877-445-6554
Fax: 949-951-4909
www.ialab.com

Michelson Laboratories, Inc……..Ph: 562-928-0553
6280 Chalet Drive
Commerce, CA 90040-3761
Toll Free: 888-941-5050
Fax: 562-927-6625
www.michelsonlab.com

Oxnard / Santa Maria / Watsonville / Salinas / Fresno

BC Laboratories, Inc…….....Ph: 661-327-4911
4100 Atlas Court
Bakersfield, CA 93308
Fax: 661-327-1918
www.bclabs.com

FGL Environmental Analytical
www.fgline.com

Primus Laboratorios…….....Ph: 805-922-0055
2810 Industrial Parkway
Santa Maria, CA 93455
Fax: 805-922-2462
www.primuslabs.com

Silliker Laboratorios……Ph: 209-521-5503
1548 Cummins Drive
Modesto, CA 95358
Fax: 209-521-1005
www.silliker.com