



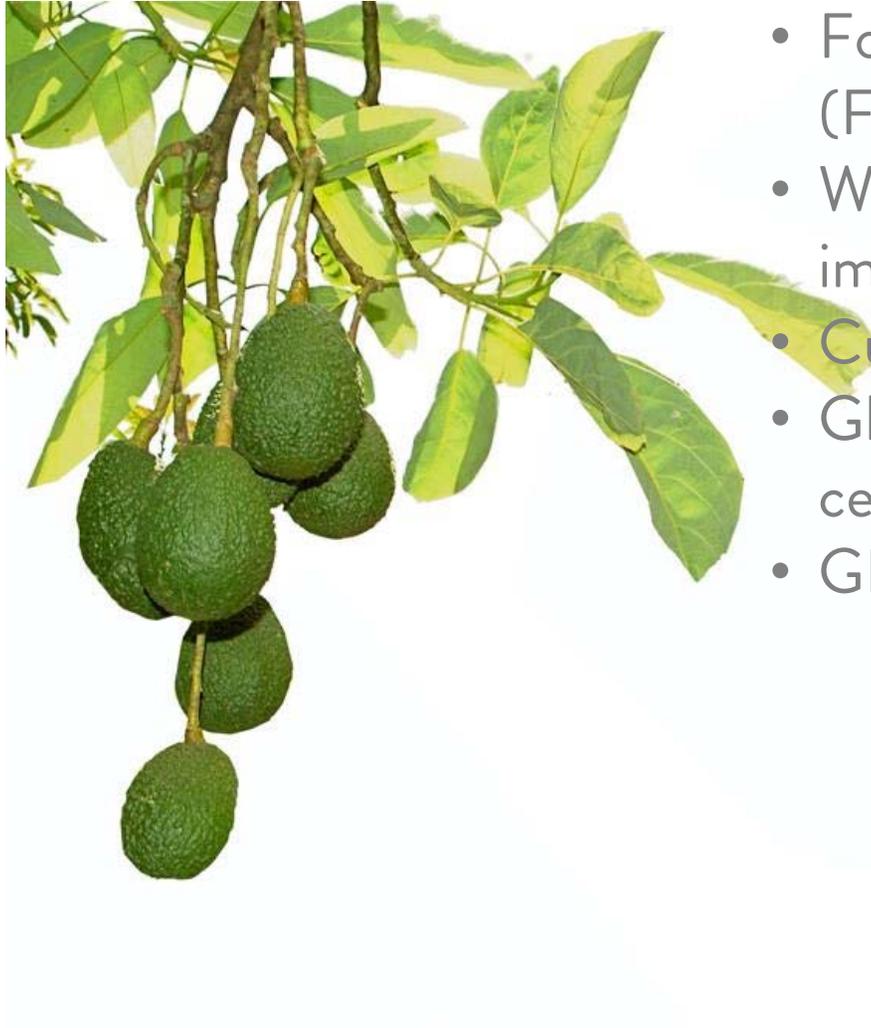
FOOD SAFETY PROGRAM

JANUARY 30, 31 & FEBRUARY 1





TODAY WE WILL DISCUSS



- Food Safety Modernization Act (FSMA)
- Why Food Safety certification is important (to you)
- Customer Food Safety demands
- Global Food Safety Initiative (GFSI) certification requirements
- GFSI certification process



FIRST, WHY DID THE COMMISSION MODIFY THE PROGRAM?

- Commission tracks program acceptance through buyers and handlers
- Customer requirements continue to change
- Commission's 3rd edition food safety manual (USDA, Primus Ranch)
- Commission's role
 - Inform growers
 - Recommend direction
 - Provide resources
- Ultimately, as a grower, it's your decision

FOOD SAFETY MODERNIZATION ACT (FSMA)





IT'S THE LAW

- The Food Safety Modernization Act (FSMA) became law on January 26th, 2016
- Food & Drug Administration responsible for the safety of fresh produce and meat sold in the U.S. (including offshore production)
- Five separate Rules
 - Preventive Controls for Human Food Rule
 - Preventive Controls for Food for Animals Rule
 - **Standards for Produce Safety Rule**
 - Foreign Supplier Verification Programs (FSVP) for Importers of Food for Humans and Animals Rule
 - Accredited Third-Party Certification Rule



STANDARDS FOR PRODUCE SAFETY RULE

- This Rule covers the production and harvesting of raw commodities for all produce sold in the United States, including produce grown internationally.
- This Rule includes avocados grown for commercial purposes.





FSMA IDENTIFIED POSSIBLE ROUTES FOR MICROBIAL CONTAMINATION

- People – worker hygiene and health
- Water – hand washing, drinking, irrigation, application mixes, run off
- Soil – soil amendments, prior uses, adjacent uses, contamination
- Animals – wild or domestic





FSMA EXEMPTIONS

- The Rule does not apply to Farms that have an average annual value of produce sold during the previous three-year period of \$25,000 or less

Or a qualified exemption based on two requirements:

- The farm must have food sales averaging less than \$500,000 per year during the previous three years; and
- The farm's sales to qualified end-users must exceed sales to all others combined during the previous three years. A qualified end-user is either (a) the consumer of the food or (b) a restaurant or retail food establishment that is located in the same state or the same Indian reservation as the farm or not more than 275 miles away.



FSMA COMPLIANCE DATES

- Very small businesses
 - More than \$25,000 but no more than \$250,000 in average annual produce sales during the previous three year period
 - January 26, 2020
- Small businesses
 - More than \$250,000 but no more than \$500,000 in average annual produce sales during the previous three year period
 - January 26, 2019
- All other farms
 - January 26, 2018



FSMA PROHIBITS HARVEST OF WINDFALL FRUIT

- Dropped covered produce (§ 112.114)
 - FSMA prohibits the distributing of produce that drops to the ground before harvesting
 - The California Department of Food and Agriculture (CDFA) acknowledges that federal law will preempt state law and expects a change in California law before the end of 2017



WHAT'S THE BASIS FOR THESE REQUIREMENTS!?

- This is ridiculous, avocados are safe!
- What about the other countries, I don't believe they're certified
- There's no way FDA can enforce FSMA
- Understandable frustration, but it's reality



CUSTOMER DEMANDS





GOOD NEWS I'M EXEMPT FROM FSMA!!!

- Hold your horses cowboy...unlike FSMA, buyers aren't providing exemptions





KEY ACCOUNTS EXPECT CERTIFICATION





KEY ACCOUNTS EXPECT CERTIFICATION

Walmart  letter to all handlers:

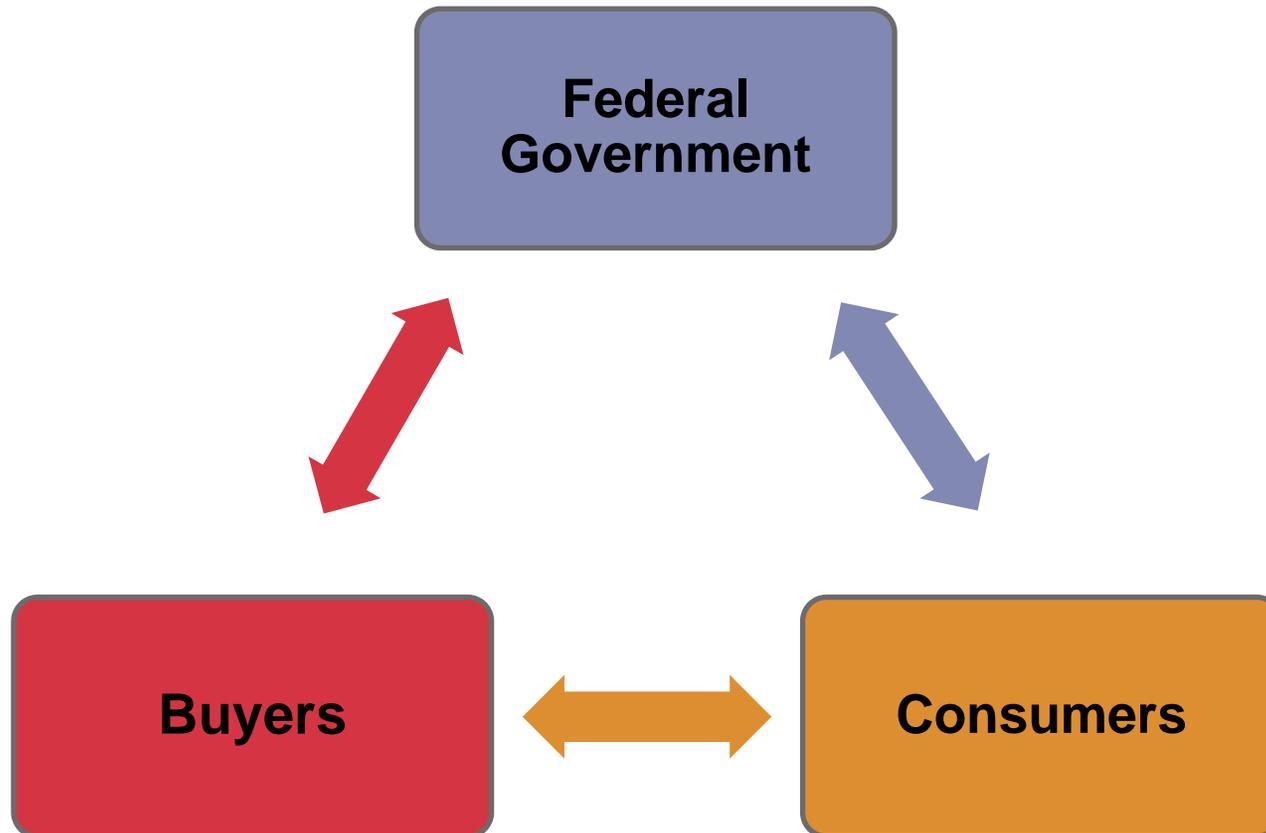
- “All Avocado Suppliers for Walmart and Sam’s Club must align with GFSI (Global Food Safety Initiative) and recognized benchmarked schemes for their packinghouses, storage and distribution centers, and growers/fields. Suppliers who still have growers/fields which have not yet achieved certification should provide to the Walmart Food Safety & Health a commitment letter indicating the dates when all these sites will meet our requirements. We expect all fields to be certified no later than the end of 2017. Should this process not be adhered to, we will reconsider our relationship with your firm.”

WHY FOOD SAFETY CERTIFICATION IS IMPORTANT (TO YOU)





INCREASING SCRUTINY ON FOOD SAFETY





STAY IN A COMPETITIVE POSITION

- Consider the market implications
- A large customer can purchase on average more than 10% of California's volume in a season
- If your fruit is not certified there will be fewer potential buyers
- Handlers must remain competitive with their supplies
- Likely non certified fruit will see below market prices
- Eventually some handlers may only accept certified fruit





CALIFORNIA PREMIUM BRAND

- Food safety is an inherent value to our Premium Brand
- Many export markets require Global Gap
- Maintain California's competitiveness domestically and (if necessary) internationally



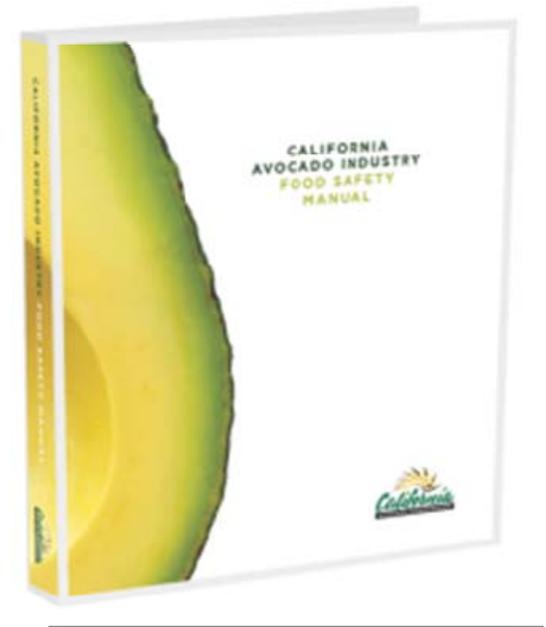
GLOBAL FOOD SAFETY INITIATIVE (GFSI) CERTIFICATION REQUIREMENTS





FOOD SAFETY MANUAL

- Six Sections
 - Food Safety Management System
 - Field Sanitation
 - Agricultural Inputs
 - Worker Health and Hygiene
 - Food Safety and Security Training
 - Audit Checklists
 - Pre-Season Self-Assessment Checklist
 - Field Risk Assessment
 - PGFS Internal Audit Checklist



TODAY

- Focus on the increased requirements (record keeping)
- Overview of the general requirements in each section



CORE AREAS





AUDIT PROCESS

- Growers work with a handler
- Review Pre-Season Self-Assessment Checklist (page 81)
- Pull together all necessary records
- Identify missing records
- Conduct employee training
- Get water testing done
- Schedule audit
- Average cost \$700



AUDIT PROCESS

- Starts with a very thorough records review
- No pencil or white out on records
- Some questions NA
- Key Areas
 - List of all suppliers
 - Letters of Guarantee for all suppliers
 - Pesticide suppliers, applicators, restrooms, fertilizers, etc.
 - Pesticide Use Reports, PCA/QAL licenses, product labels, PHI
 - Restrooms on grove
- Drive grove with auditor
- Stop, inspect facilities
- Typically need 85% to pass





PRE-SEASON SELF-ASSESSMENT CHECKLIST

Date: _____

Conducted by: _____

Grower: _____

Ranch Name: _____

Pre-Season Self-Assessment Must be Conducted Prior to Harvesting

Issue	Yes	No	Comments / Corrective Actions & Completion Dates
Ground History			
Has the land in production been previously used for:			
Non-agricultural functions?			
Animal husbandry or grazing lands?			
Waste storage?			
Is there evidence of animal activity?			
Has flooding from uncontrolled causes occurred?			
Is the growing area a new purchase or lease?			
Adjacent Land Use			
Is Adjacent Land:			
Used for intensive livestock production?			
Used for manure, compost, or biosolid storage?			



Fertilizer/Crop Nutrition			
Is raw or not fully composted manure used?			
Are biosolids used?			
Is composted manure used?			
Is heat treated manure used?			
Are soil amendments not containing manure used?			
Are any non-synthetic crop treatments used?			
Are fertilizers and/or fertilizer containers stored in a manner to prevent contamination in the growing area or to any water sources?			
Irrigation/Water Use			
What are the potential sources for irrigation water?			
Municipal or District Water Source			
Wells			
Reservoirs or Ponds			
Surface Waters/Canals			
Reclaimed			
Reused			
Are microbial tests, including generic <i>E. coli</i> conducted on water?			

(continued on next page)



Issue	Yes	No	Comments / Corrective Actions & Completion Dates
Irrigation/Water Use (Continued)			
Are check valves or other back flow prevention systems in use when, and where, necessary?			
Is the water delivery system in good condition?			
Have any potential risk factors been identified? If so, which ones?			
Worker Hygiene			
Are there permanent and/or portable worker toilet and hand washing facilities on the ranch?			
Are the toilet and hand washing facilities checked and cleaned regularly?			
Have workers been trained on proper hygiene, food safety and food security?			
Are first aid kit supplies up-to-date?			
For toilet and hand washing facilities that are brought onto the ranch on an as needed basis:			
Are the access roads of reasonable grade to allow safe access?			
Are toilet facilities in a suitable location to prevent contamination to the growing area?			
Have the servicing company's policies and procedures regarding toilet and hand washing facilities maintenance and sanitation been acquired?			



Necessary Records			
Current PCA/QAL license(s)			
Current letters of guarantee from suppliers			
Pesticide Use Report			
Generic <i>E. coli</i> water tests			
Perimeter and Water Source Monitoring Log			
Restroom Maintenance Log			
Worker Health/Hygiene, Food Safety and Security Training Log (Completed Quarterly)			
Food Safety Committee Log (Quarterly)			
Management Verification Log (Annually)			
Food Safety Resources Analysis (Annually)			
Fertilizer Application Log			
NUOCA (Notice of Unusual Occurrence and Corrective Action) Form(s)			

RECORD KEEPING





PrimusGFS Audit Documents and Frequency Requirements

Title of Document	Annual	Every 6 Months	Quarterly	Monthly	Weekly	As Needed	Page
Management System (Ranch Info)	X						7
Food Safety Policy	X						7
Food Safety Coordinator Information	X						7
Organizational Structure	X					X	8
Food Safety Team Responsibilities	X					X	8
Food Safety Committee Log			X				11
Management Verification Log	X						13
Food Safety Resource Analysis Form	X					X	15
Update Supplier List/Log	X					X	31
Mock Recall		X					35
Visitor Sign In Log	X						39
Soil and Land Use	X					X	43



PrimusGFS Audit Documents and Frequency Requirements

Title of Document	Every 6						Page
	Annual	Months	Quarterly	Monthly	Weekly	As Needed	
Animal, Wildlife and Livestock	X						49
Perimeter Monitoring					X		
Fertilizer Application Log						X	55
Water Testing (ALL sources)*	X						77
Pesticide Use Reports						X	
Worker training (Pesticide use)	X						
Worker training (food safety)			X				
PCA recommendations						X	
Equipment Calibration						X	69
Toilet cleaning Log				X		X	
Pre-season Assessment	X						81
Internal Audit	X						89

*Final FSMA rule to be determined



“CORRECTIVE ACTIONS” ALLOWED

- If question is not an “Automatic Failure”
- 30 days to get corrected
- Primus provides a web portal to individual grower page
- Upload documents/pictures demonstrating “Corrective Action”



AUTOMATIC FAILURES





AUTOMATIC FAILURES (PAGE 88)

Ground History									
02.03.01 Farm areas used for food crops last season?			02.03.02 Growing area used for any non-ag functions? If no, go to 02.03.03			02.03.02a Soil tests conducted showing soil OK for crops?			02.03.03 Growing area used for animal husbandry or grazing land? If no, go to 2.3.04
02.03.03a If land used for animal husbandry has risk evaluation been performed?			02.03.04 Is there evidence of animal presence /activity in the audited area? If NO, go to 2.03.05			02.03.04a Is evidence of animal activity found in the form of fecal contamination? If NO, go to 2.03.05			02.03.04b Is the fecal matter found in the area a systematic event (not sporadic)? IF YES, AUTO FAIL.



AUTOMATIC FAILURES (PAGE 89)

Fertilizer / Crop Nutrition									
02.07.01 Untreated human sewage sludge used in growing cycle? If YES, AUTO FAIL.			02.07.02 Compost produced from animal materials? If no, go to 2.07.03			02.07.02a Applications incorporated into soil prior to bud burst for tree crops?			02.07.02b Compost use records showing preharvest interval not less than 45 days?
02.07.02c Certificate of Analysis available from compost supplier covering pathogens? Letter of guarantee regarding SOP and logs?			02.07.02d Certificate of Analysis, LOG regarding heavy metal testing?			02.07.03 Are biosolids used? If NO, go to 2.07.04			02.07.03a Biosolids incorporated into soil?
02.07.03b Biosolid use records available for each growing area?			02.07.03c Certificate of Analysis available from supplier for microbial content? If NO, AUTO FAIL.			02.07.03d Certificate of Analysis from supplier for heavy metal content?			02.07.03e Biosolids applied to crops which ban use? If YES, AUTO FAIL.



AUTOMATIC FAILURES (PAGE 92)

Crop Protection									
02.09.01 Documented procedure for mixing / loading of crop protection materials?			02.09.01a If observed, is mixing and loading performed according to SOP and label?			02.09.02 Documented procedure for application of crop protection materials?			02.09.02a If observed, is application performed according to SOP and label?
02.09.03 Documented procedure for rinsing and cleaning crop protection equipment?			02.09.03a If observed, is rinsing and cleaning of equipment performed according to SOP and label?			02.09.04 Documentation showing individuals making CP decisions are competent? (PCA license)			02.09.05 Documentation shows workers handling materials are trained or under supervision of trained individual?
02.09.06 Up to date records of all crop protection products applied during growing cycle? If NO, AUTO FAIL.			02.09.07 Are crop protection products registered in the country of production for target crops? If no, go to 02.09.08			02.09.07a Does the operation have information available showing product is authorized for use on target crop? If NO, AUTO FAIL.			02.09.07b Are CP product applications restricted by label, recommendation / national / local standards? If NO, AUTO FAIL.
02.09.07c Is the pre harvest interval observed? If NO, AUTO FAIL.			02.09.08 If applicable, for CPs not registered for use on target crop in country of production, can grower show they have registration info, label info and MRL tolerances for country of destination? If NO, AUTO FAIL.			02.09.09 Evidence available grower is complying with countries of destinations expectations regarding CP products? If NO, AUTO FAIL.			02.09.10 If CP containers are stored on property, are they stored in a manner to prevent contamination and disposed of responsibly?



AUTOMATIC FAILURES (PAGE 93)

Field Worker Hygiene (Applies to on-the-farm workers, not harvesting)									
02.10.01 Documented policy for dealing with workers who appear ill / become ill?			02.10.02 Documented policy regarding workers with open sores / wounds?			02.10.03 Documented policy describing disposition of product that has come in contact with blood / bodily fluids? IF NO, AUTO FAIL.			02.10.04 Documented policy prohibiting eating, drinking, gum, and using tobacco in the growing area?
02.10.05 Food safety training program for new and existing workers? Quarterly records?			02.10.06 Operational toilet facilities provided? If no, go to 2.10.07. IF NO, AUTO FAIL.			02.10.06a Toilet facilities placed within 1/4 mile, 5 min walk?			02.10.06b Toilet facilities in suitable location to prevent contamination?
02.10.06c Minimum one toilet per 20 workers?			02.10.06d Toilet facilities have sign reminding workers to wash hands?			02.10.06e Toilets maintained in clean condition? Records of cleaning and restocking?			02.10.06f Catch basins designed to prevent contamination?
02.10.06g Documented policy for emptying catch basin in hygienic manner?			02.10.07 Evidence of human fecal contamination in growing area? IF YES, AUTO FAIL.			02.10.08 Operational hand washing facilities provided? If no, go to 2.10.09			02.10.08a Hand washing facilities 1/4 mile, 5 minute walk?

KEY AREAS





SUPPLIER CONTROL (PAGE 27)

Approvals:

1. Documentation in the form of Letters of Guarantee, licenses, training records, procedures, third party audits, etc. must be obtained from suppliers proving they meet specifications listed under Supplier Requirements.
 - a. Letters of Guarantee must be updated yearly, unless they state continuing.
 - b. Licenses must be current, not expired.
 - c. Where applicable (harvesting), third party audits must have been completed within the year.



LETTER OF GUARANTEE (PAGE 27)

Dear Valued Customers,

AG RX FERTILIZER STANDARDS- Synthetic & Organic Fertilizers

This letter serves as notice that fertilizer sold at AG RX meets California Standards. The State standards specifically regulate the amount of heavy metals that fertilizers may contain. AG RX strives to utilize fertilizers that contain little, or no, heavy metals. The California Department of Food and Agriculture continually monitors our products and enforces the standards, including heavy metal content, to ensure they conform to California State Regulations.

The synthetic fertilizers and their inert ingredients that we sell, both dries and liquid, do not contain animal manure, animal parts, or other animal by-products. The Organic fertilizers that we sell are guaranteed by the different manufacturers to comply with the guidelines set for the by the National Organic Program commonly referred to as NOP. In addition, the organic fertilizers that we sell are certified by the manufacturer or 3rd party contractor to be free of Salmonella, E. coli and E. coli 0157. We will provide, upon request, any certification document submitted from the manufacturer such as an OMRI certificate if available. One can also be requested from the manufacturer as well by contacting them directly.



LETTER OF GUARANTEE (PAGE 27)

January 3, 2017

To Our Valued Customers:

AG RX PEST CONTROL OPERATIONS- CONTINUING LETTER OF GUARANTEE

This letter will certify the AG RX conducts all pesticide application operations in accordance with all relevant legislative guidelines, Good Agricultural Practices (G.A.P), and Integrated Pest Management Programs. All pesticide applications are made in compliance with Federal, State, and local laws and regulations. AG RX generates and maintains all documentation required in compliance with pesticide laws and those records are made available on request.

AG RX utilizes water from the City of Oxnard/ City of Santa Maria for application operations and may also use grower-supplied ranch water. Ranch water is supplied by the grower to AG RX with assurance that the water source is free of contamination. All mixing and loading of pesticides are done in accordance with Good Agricultural Practices and performed at least two hundred feet from any water source so as to prevent contamination.

AG RX maintains all current state licenses and insurance as well as detailed



LICENSES (PAGE 27)

CURRENT

dpr CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION
1001 I STREET
SACRAMENTO, CALIFORNIA 95814

ISSUED: January 01, 2017
EXPIRES: December 31, 2018

**Pest Control Business - Main
LICENSE**
LICENSE NO. 30889

Invalid if insurance and/or qualified person(s) lapse before expiration date.

Mailing Address: AG RX, INC.
751 ROSE AVE
OXNARD, CA 93030

Business Location: AG RX, INC.
751 ROSE AVE
OXNARD, CA 93030

POST THIS LICENSE PROMINENTLY IN PUBLIC VIEW
THIS LICENSE IS NOT TRANSFERABLE - ANY CHANGE IN OWNERSHIP REQUIRES A NEW LICENSE

dpr CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION
1001 I STREET
SACRAMENTO, CALIFORNIA 95814

ISSUED: January 01, 2017
EXPIRES: December 31, 2018

**Pest Control Dealer - Main
LICENSE**
LICENSE NO. 33481

Invalid if insurance and/or qualified person(s) lapse before expiration date.

Mailing Address: AG RX
751 S ROSE AVE
OXNARD, CA 93030

Business Location: AG RX
751 S ROSE AVE
OXNARD, CA 93034

POST THIS LICENSE PROMINENTLY IN PUBLIC VIEW
THIS LICENSE IS NOT TRANSFERABLE - ANY CHANGE IN OWNERSHIP REQUIRES A NEW LICENSE



LABOR CONTRACTORS (PAGE 28)

- Is the contractor Good Harvesting Practices (GHP) certified?
 - If YES, provide copy of their audit and a copy of their certificate (USDA, Primus, other)
 - If NO, you'll need the following:
 - Copies of GFSI training materials
 - Quarterly training records (dated and signed)
 - Copies of bathroom servicing records
- If no harvest in last 3 months no records for first audit (on supplier list though)
- **Best if contractor is certified**





MOCK RECALL (PAGE 35)

Mock Recall

Conducted by: _____

Ranch Name: _____

Date of Recall: _____

Start Time: _____ End Time: _____ Total Time Taken: _____

Reason for Recall:

Recall Class: (Circle) I II III IV

Harvest Date	Field Receipt	Block	Bins Picked	Handler
Total Harvested:				
Total Recalled:				
Total Unaccounted For:				

Notified Harvesters? Yes No

Notified Handlers? Yes No

Field Ticket Attached? Yes No

Packout Attached? Yes No

Additional Notes (Lessons Learned):



FIELD SANITATION (PAGE 47)

- Livestock, Wildlife and Pets
 - Animal presence poses contamination risk
 - Monitor for high concentrations
 - Perimeter and water source monitoring log (page 49)
- Discourage Their Presence
 - Removing fecal material and dead animals
 - Take corrective action if necessary





FERTILIZER AND CROP NUTRITION (PAGE 53)

Records
available for
ALL
applications

- Date of application
- Type of fertilizer
- Amount
- Method of application
- Operator name
- Letters of guarantee
- Certificate of analysis (organic fertilizer)



WATER USAGE (PAGE 57)

Water Usage Policies and Procedures (2.08.01-2.08.03f)

DOES NOT FULLY MEET THE FOOD SAFETY MODERNIZATION ACT REQUIREMENTS

Purpose:

To ensure water used for irrigation, chemical applications and/or fertigation does not represent a likely source of biological contamination to fruit intended for human consumption.

Policies:

1. Water used for drinking and hand washing must be from a **POTABLE** water source.

Usage	Allowable Limits
Drinking and Hand Washing	POTABLE WATER ONLY
Irrigation/Fertigation/Foliar Applications	Cannot exceed 126 MPN, Most Probable Number, generic <i>E. coli</i> (or Colony Forming Unit, CFU)/100 mL (rolling geometric mean n=5) and <235MPN generic <i>E. coli</i> for any single sample.



WATER USAGE (PAGE 57)

2. Water sources must be tested at the required frequency for generic *E. coli*.

Source	Test	Testing Frequency
Municipal / District	Generic <i>E. coli</i>	At least once a year.*
Wells	Generic <i>E. coli</i>	At least once a year.*
Ponds	Generic <i>E. coli</i>	At least once a year.*
Reservoirs	Generic <i>E. coli</i>	At least once a year.*
Canals, Rivers, Ditches	Generic <i>E. coli</i>	At least once a year.*

*Depending on your own risk assessment/analysis, or in particular circumstances, you may have to test these water sources more frequently.

3. Laboratory used for performing microbial analysis must be licensed/accredited (e.g. ISO 17025 or equivalent).
Documentation must be obtained from laboratory showing compliance.





CROP PROTECTION MATERIALS (PAGE 59)

- If material is regulated. Pesticide Use Reports must have points below:

Records
available for
ALL
applications,
know the
PHI

- Month, day and year of application
- Crop
- Commodity
- Location pesticide was applied
- Product Trade Name
- Active Ingredient
- Total Amount of Applied
- Size of treatment area



HAND WASHING (PAGES 64-65)



- Potable water is available to all employees to drink and wash hands
- Employees must wash hands with soap and water at the beginning of the workday, after using the toilet, after eating, and after breaks
- Water testing records must be available



RESTROOMS (PAGE 65)



- Employees must use a proper restroom facility every time – NO EXCEPTIONS
- Restroom placed within a quarter mile or five minute walking distance of workers
- Cleaned at least monthly
- Maintenance log (page 69)



ILLNESS (PAGE 73)



- Employees must report incidences of illness or bleeding
- Ill or injured workers should be kept out of the production area
- First-aid kits and emergency numbers should be available



WORKER TRAINING (PAGES 73-76)

Culture of Food Safety

- New employees must be trained before they enter the grove
- Continued training – quarterly
- Connection between microorganisms and food handling, importance of illness reporting
- Personal hygiene – toilet use, hand washing (failure to use is grounds for dismissal)
- Supervisors should be aware of food borne illness symptoms – fever, diarrhea, vomiting



CERTIFICATE OF PARTICIPATION

FOOD SAFETY TRAINING
BY THE CALIFORNIA AVOCADO COMMISSION

THIS IS TO CERTIFY THAT

Has participated in the above Food Safety Training/Educational Program and
has earned 2.0 Educational Hours

Ken Melban

Ken Melban, Vice President Industry Affairs

Date of Training

**THANK YOU
QUESTIONS?**





FSMA AGRICULTURAL WATER CRITERIA

- Water directly applied to produce must meet certain criteria
- The geometric mean of samples must be 126 or less Colony Forming Units (CFU) of generic *E. coli* per 100 mL of water
- The statistical threshold (STV) of samples is 410 CFU or less of generic *E. coli* in 100 mL of water



FSMA AGRICULTURAL WATER CRITERIA

- FSMA requires water meet potable standards – no detectable generic E. coli – when it is reasonably likely that potentially dangerous microbes, if present, would be transferred to produce through direct or indirect contact (e.g. water used for washing hands during and after harvest and water used on food-contact surfaces like clipper blades)
- FSMA prohibits use of untreated surface water for any of these purposes



FSMA AGRICULTURAL WATER CRITERIA

- Geometric mean (GM) is an average and is intended to determine the average amount of *E. coli* in water source
- Statistical threshold (STV) reflects the amount of variability in the water quality (indicating *E. coli* levels when adverse conditions come into play – like rainfall or high river stage that can wash waste into rivers or canals)
 - Best described as 90% of samples are below the value



FSMA AGRICULTURAL WATER TESTING REQUIREMENTS

- **Surface Water** (ponds, reservoirs, canals, rivers ditches):
 - **Initial survey, minimum of 20 samples**, over the course of 2-4 years
 - Findings are used to calculate the GM and STV = “microbial water quality profile”
 - After initial survey, **annual survey of 5 samples per year**
 - Added to most recent 15 samples
 - Creates a rolling dataset of 20 samples to confirm quality by recalculating GM and STV



FSMA AGRICULTURAL WATER TESTING REQUIREMENTS

- **Untreated ground water (wells)**: when it is directly applied to growing produce (e.g. irrigation, fertigation, foliar applications)
 - **Initial survey, minimum of 4 samples**, as close as practical to harvest, during the growing season or over 1 year
 - Findings are used to calculate the GM and STV = “microbial water quality profile”
 - After initial survey, **annual survey of 1 sample per year**
 - Added to most recent 3 samples
 - Creates a rolling dataset of 4 samples to confirm quality by recalculating GM and STV



FSMA AGRICULTURAL WATER TESTING REQUIREMENTS

- **Untreated ground water (wells)**: when it is used for purposes for which no detectable *E. coli* is allowed (e.g. washing hands, cleaning equipment)
 - **Initial survey, minimum of 4 samples** during the growing season or over 1 year
 - If the 4 samples **meet the no detectable generic *E. coli*** criterion, testing can be done **once per year thereafter**
 - If a test fail, resume testing 4 times per growing season until all have no detectable generic *E. Coli*

What are the requirements related to water directly applied during growing activities?

