

Food Safety Plan. Part 3

Assessing practices during the growing season.

In this section we will cover:

Field history and adjacent land use

Use of chemicals and plant protection materials

Cleaners, sanitizers and disinfectants

Water use

Wildlife, domesticated animals and pest control

Soil amendments

Field History & Assessment

F-1.1 Land Use History & Adjacent Land Use Risk Assessment

The farm completes an annual Land Use History & Adjacent Land Use Risk Assessment, which includes equipment and structures on the farm.

Describe history of land and adjacent land here and complete assessment in next page.

F-1.2 Indoor Growing and Field Storage

If operating a greenhouse, high tunnel or building for indoor growing, structures and surfaces are constructed in a manner that facilitates cleaning and sanitation and does not serve as harborage for contaminants or pests. Water from refrigeration drip pans is drained and disposed of away from product and product contact surfaces.

Briefly describe the condition of any structures being used to grow produce.

F-1.3 Sewage & Septic

These systems are maintained as to not become a source of contamination. After a significant event (i.e., flooding or an earthquake), appropriate actions are taken to ensure sewage or septic system is functioning properly and will not contaminate produce, food contact surfaces, areas used for produce handling, water sources, or water distribution systems.

Identify septic systems at the farm in the farm map used in part 1. Briefly describe any issues with septic or sewage and how these were resolved from preventing contamination to produce.

F-1.1 Land Use History & Adjacent Land Use Risk Assessment

(Conduct at the beginning of the season. Re-perform at least annually for environmental conditions or risk awareness that has changed since the last assessment)							
If your answer to a question indicates a risk of a food safety hazard, then further understanding, conducting a risk assessment and/or Preventive or Corrective Action(s) are needed to minimize possible contamination.							
Area of Potential Risk with Land Use History and Adjacent Land Use?	Yes	No	NA	What is the potential risk identified?	Likelihood (Circle One)	What Preventive/Corrective Action(s) will you use to minimize the risk?	Date/Initials
Do you have a written record of current and past land use?					Low Medium High		
Are crops grown on land that has a history of flooding or recently experienced a flood?					Low Medium High		
Is produce grown in fields that might receive runoff from neighboring fields, pastures or barnyards?					Low Medium High		
Are produce fields located near municipal/commercial sewage treatment facilities or waste material landfills?					Low Medium High		
Are produce fields located within 30 feet of a septic system leach field?					Low Medium High		
Are produce fields located within 1 mile of a large-					Low		

scale animal operation or feedlot?					Medium High		
Are grazing lands and domestic animals (including hobby farms and non-commercial livestock) located within 30 feet of produce fields?					Low Medium High		
Are there any potential physical contamination concerns not mentioned above?					Low Medium High		
Are there any potential chemical contamination concerns not mentioned above?					Low Medium High		
Are there any potential contamination concerns not mentioned above?					Low Medium High		

F-2 Agricultural Chemicals

This section ensures that all agricultural chemicals, plant protection products and soil amendments used in our operation are handled in a manner to minimize cross-contamination risks. This applies to all pre-and post-harvest operations.

Food Safety Manager is responsible for providing training and other resources to carry out these procedures.

F-2.1 Follow Label Instructions

Agricultural chemicals, including post-harvest chemicals such as biocides, waxes and plant protection products, must be registered for such use as required by prevailing regulation, **used in accordance with label instructions** including application rates, worker protection standards, personal protection equipment, container disposal, storage, and all requirements specified for the chemical compound.

Keep labels on electronic file. Safety Data Sheets are needed for GAP certifications. These can be requested from pesticide dealer or downloaded from the web.

F-2.3 Licensed Personnel

Only trained, licensed or certified application personnel, as required by prevailing regulation, will apply agricultural chemicals that require a license.

F-2. 4 Water Used with Agricultural Chemicals

Water used with agricultural chemicals will be potable.

F-2.5 Disposal of Agricultural Chemicals

- Waste agricultural chemicals and products used for cleaning of application equipment will be disposed on in a manner that protects against contamination of product and growing areas.
- Sprayer tank clean-out is done each time chemical are sprayed and between crops or between products to avoid crop injury due to contamination, dilute the active ingredient below damaging concentrations, and deactivating herbicide, or removing the herbicide from the sprayer system.
- Chlorine bleach will never be mixed with ammonia.

F-2.1 Pesticide and Chemical applications. Include pre and post-harvest treatments.

Application date	Field/ location	Chemical used	Application rate	Method	Preharvest interval

Cleaning Agents (Cleaners, sanitizers for food contact surfaces and disinfectants for non-food contact surfaces)

Cleaning: Physical removal of soil (e.g., plant debris) from surfaces which can include the use of water and detergent

Sanitizing: Treating a cleaned surface to effectively destroy microorganisms of public health significance, short period of time at a specific concentration.

Disinfecting: While sanitizing reduces microorganisms to a safe level, sterilizing removes all microorganisms from an item. Sterilizing is not often performed in food contact surfaces or commercial kitchen environment, but is used in places like hospital operating rooms.

All chemicals used for cleaning and sanitizing of food contact surfaces (equipment, tools, utensils, containers) shall be approved for that use according to the label. Products will be used following the label instructions (for example, diluting to target concentration and used for the amount of time indicated in the surface).

Chemicals will be stored away from produce and food contact surfaces in a dry place.

SDS sheets must be on file, if farm is undergoing GAP certification.

Disinfectants will not be used in food contact surfaces unless these are part of a decontamination process of bodily fluids. The area shall be cleaned, disinfected and sanitized.

F-4. Water System Description

Describe the water system at your farm by using a map. The water system shall be inspected annually and maintained. There should never be cross connections with human or animal waste systems.

F-4.1 Water System Risk Assessment

This assessment is conducted seasonally and any time there is a change made to the system or a situation occurs that could introduce an opportunity to contaminate the system.

If your answer to a question indicates a risk of a food safety hazard, then further understanding, conducting a risk assessment and/or Preventive or Corrective Action(s) are needed to minimize possible contamination.							
Area of Potential Risk with Water System and Use	Yes	No	NA	What is the potential risk identified?	Likelihood (Circle One)	What Preventive/Corrective Action(s) will you use to minimize the risk?	Date/Initials
Is the source of water used for irrigation clearly identified?					Low Medium High		
Is the potable water source clearly identified with laboratory testing to support no detectable levels of generic <i>E.coli</i> ?					Low Medium High		
Are water distribution systems monitored and maintained and currently in working order?					Low Medium High		
Is the method of water used in irrigation and fertigation identified?					Low Medium High		

Is the quality of water used in the application of plant protection products (PPPs) considered?					Low Medium High		
Is the quality of water used in any other pre-harvest treatment such as sun damage mitigation, frost protection and misting considered?					Low Medium High		
Is the quality of water used during harvest considered?					Low Medium High		
Is the quality of water used during the transportation of the product being considered? (e.g., water transfer systems, dump tanks)					Low Medium High		
Is the quality of water used during hydro-cooling, sorting or washing of the product considered?					Low Medium High		
Is a sanitizer added to the wash water?					Low Medium High		
Is the quality of ice or water used in production of ice used to top produce considered?					Low Medium High		
Is the quality of water used in facility and equipment cleaning procedures considered?					Low Medium		

					High		
Are human and animal waste water systems separate from the irrigation water system?					Low Medium High		
In the case where a gas engine is used to pump water, a drip plan is used to prevent irrigation water contamination					Low Medium High		
Municipal Water Only: Most recent water test results requested from municipality and on file?					Low Medium High		
Surface Water Only: Uncontrolled wildlife access					Low Medium High		
Surface Water Only: Surface run-off during times of heavy rain or melting snow					Low Medium High		
Surface Water Only: Irrigation water is applied by overhead coming into direct contact with the edible portions of the crop					Low Medium High		
Surface Water Only: Sanitary condition of the irrigation water holding/storage tank is addressed					Low Medium		

					High		
Surface Water Only: In the case where a gas engine is used to pump water, a drip plan is used to prevent irrigation water contamination					Low Medium High		
Surface Water Only: Sanitary condition of the irrigation hoses is addressed					Low Medium High		
Surface Water Only: Acceptable irrigation water test results on file? (\leq 235 MPN - Direct Contact with Edible Portions of Crop; \leq 576 MPN – No Direct Contact)					Low Medium High		
Surface Water Only: At least three (3) acceptable water test results/year on file if you are renewing your GAP certification (yearly), for previous years?					Low Medium High		
Surface Water Only: Are historical surface water test results on file?					Low Medium High		
Well Water Only: Well is in good order with no cracks or damage?					Low Medium High		
Well Water Only: Is there potential for agricultural runoff based on well location?					Low Medium High		

Well Water Only: If the septic system located close to the well?					Low Medium High		
Well Water Only: Are procedures in place to ensure sanitary conditions of the well water holding/storage tank are addressed?					Low Medium High		
Well Water Only: Is a backflow prevention device installed and properly functioning?					Low Medium High		
Well Water Only: Well is in good order with no cracks or damage					Low Medium High		
Are there any potential physical contamination concerns not mentioned above?					Low Medium High		
Are there any potential chemical contamination concerns not mentioned above?					Low Medium High		
Are there any potential biological contamination concerns not mentioned above?					Low Medium High		

F-4.1 Issues identified from the water system risk assessment that need to be addressed

F-5.1 Water Management Plan

When does water touch the edible portion of the crop during the growing season?

Does water touch the edible portion of the crop after it is harvested?

The water sources at the farm are:

Water Source	Source at farm, location	Risk	Does water touch the edible portion of the crop? Yes or No	Document or testing requirement	Set dates to sample water
Municipal water		Low		Certificate or report from the water treatment plant	
Ground water (wells)		Medium		1 sample per year	
Surface water (ponds, rivers, creeks)		High		3 samples per year	

Attach water test results or city water report to this section.

The collection of water samples is conducted following the guidelines provided by the laboratory. Only laboratories that are certified are used and the U.S. Recreational water standards are used for water used during the growing season and U.S. Drinking Water Standards are used for water used in post-harvest.

Instructions from the Laboratory are attached as well as water test results.

Wildlife, domesticated animals and pest control

F-6 Animal & Pest Control

This operation has the following policies in place to prevent pest infestation issues, and to reduce the risk of animal feces contamination from wildlife, domesticated animals, and pests. The Food Safety Manager is responsible for setting routine monitoring schedule, making sure records are appropriately kept, and providing resources for an effective wildlife, domesticated animal, and pest control program.

F-6.1-6.3 Animal Control

- An annual animal risk assessment is conducted annually. Our preventive actions for the types of animals and wildlife we encounter at this operation can be found below in the “Preventive Action Chart.”
- Employees routinely monitor for animal activity in and around the growing area during the growing season. Employees are instructed to make supervisor aware of the presence of animals, pests or feces. Prior to harvest, the Food Safety Manager inspects for any animal activity in the growing area, including the presence of fecal matter, animal tracks, or other indicators that the crop may be contaminated as part of the Pre-Harvest Risk Assessment.

Corrective Action Were Feces to be Found in the Field –/ Other actions can be taken – write down your plan

- The area shall be flagged or taped off in a 3x3 ft. radius around the affected site and be immediately reported to the Food Safety Manager if she/he is not yet aware.
- Product that has been contaminated by feces, or come into close proximity (3 feet buffer zone) of the feces, will not be harvested without the authorization of the Food Safety Manager.
- The feces will be removed once evaluated by the Food Safety Manager by shoveling the feces into a trash bag and disposing of it in a lidded waste container that is located in an area to not be a source of potential contamination.
- Employees will wash their hands immediately after handling any feces. Any tools used to clean the field will be washed and sanitized as soon as is practical.
- A NUOCA Form will be completed to document the event and determine if any further preventative action needs to be taken.

Preventive Action for Animals & Pests

<u>Type of Animal</u>	<u>Source of Risk</u>	<u>Potential Risk</u>	<u>Preventive Action</u>
Domestic	Dog or cat	Fecal matter, bringing in other contamination on paws, allergens	No domestic pets are allowed in the production area or packing house. Visitors are made aware of this policy.
	Livestock: chickens, cattle, goat, sheep, etc..	Manure run-off, contamination transfer from employee footwear or clothing	Have at least a 30-50' buffer between livestock pens and produce fields, never keep livestock uphill from produce fields, train employees on proper clothing and footwear etiquette.
Wildlife	Deer	Fecal contamination	Deer fence, pie pans, scarecrow other deterrents. Any preventive measures and corrective actions regarding animal control shall comply with all local, state, and federal regulations on natural resource conservation (i.e., depredation permits and rules).
	Owls, geese, hawks, songbirds, other birds	High risk of <i>E. coli</i> and <i>Salmonella</i> from fecal matter	Bird netting in open-air sheds or pack houses so birds cannot roost, never placing harvested vegetables under trees for shade
Pests	Mice in enclosed packing shed	Fecal contamination of end-product.	Non-poison, non-baited pest traps are set and routinely checked in storage areas for harvest bins and containers. Any trapped pests will be disposed of immediately and in a manner that does not contaminate fields or product. All outbuildings will be maintained in a neat and orderly manner so as not to create a harborage for pests: grass will be mowed around the perimeter of the buildings, and all wood/equipment/tools stored on the exterior of buildings will be done in a way that allows for inspection for pests.
	Moles/mice in field	Fecal contamination of field, equipment or harvest containers.	Deploy traps as needed in and around greenhouses.

F-6.1-6.3 Animal Control
Animal control risk assessment

Animal Control Risk Assessment (Conduct Seasonally and any time there is a change made to the system or a situation occurs that could introduce an opportunity to contaminate the system)							
If your answer to a question indicates a risk of a food safety hazard, then further understanding, conducting a risk assessment and/or Preventive or Corrective Action(s) are needed to minimize possible contamination.							
Area of Potential Risk with Animals	Yes	No	NA	What is the potential risk identified?	Likelihood (Circle One)	What Preventive/Corrective Action(s) will you use to minimize the risk?	Date/Initials
Do livestock have access to surface water sources used for irrigation, including uncontrolled and domestic animals used in farming operations?					Low Medium High		
Has fecal contamination or damage to crops by wildlife or domestic animals been an issue in the past year?					Low Medium High		
Do you currently have a policy in place for domestic animals not being allowed to enter production and handling areas?					Low Medium High		
Do you conduct a preharvest risk assessment to inspect produce for any type of animal fecal matter or signs of intrusion?					Low Medium High		
Do you dispose of all produce that show any signs of contamination in the field?					Low Medium High		

What tools or equipment do you need to dispose, bury or address fecal contamination? Do employees know where these tools are and how to clean them after use?

F-7 Soil Amendments SOP

Soil amendments that contain animal waste are called **Biological Soil Amendments of Animal Origin (BSAAO)** and pose a risk of biological contamination to produce. To combat this, this farm follows the National Organic Program guidelines, and/or takes steps to use only BSAAOs that have been properly **treated** to sufficiently reduce the load of pathogens harmful to humans. The Food Safety Manager is responsible for **maintaining records** of soil amendment application, **sourcing soil amendments** that meet food safety standards, and **proper storage** of BSAAOs so that they do not become a source of contamination.

F-7.1 Animal-Based Soil Amendments Risk, Processing, Use and Storage

A Soil amendment risk assessment is conducted annually.

If BSAAO's are used the following information is available:

1. Treatment/Composting records or certificates are available.
2. Application Records: These records include the date of application and can be cross-referenced to the date of harvest.
3. Storage:
 - All treated soil amendments are stored so that they cannot cross-contaminate one another. All soil amendments will be applied based on the needs of the soil and per the label instructions.
 - There are cull piles in use at this operation, used for vegetable parts that need to be disposed of. The compost is not used in production, and is stored in a manner that will not contaminate production fields. The compost pile is inspected at least weekly for evidence of animal activity.

F-7.1 & F-7.2 Food Safety Requirements for Various Types of Soil Amendments – Identify materials used at the farm

Type of Soil Amendment	Food Safety Requirement	Soil Amendments in Use
Vegetative (e.g., leaf mulch, kitchen scrap compost, mycorrhizal inoculation) synthetic or mineral based fertilizer	None required, as there are no animal ingredients or waste in this product.	
Animal ingredient (e.g., bone meal, blood meal, feather meal)	<p><i>If produced on-farm:</i> records of composting, dates of treatment, methods utilized and application dates must be documented.</p> <p><i>If purchased commercially:</i> get records that serve as evidence of adequate processing to eliminate pathogens of human concern, such as a letter of guarantee, certificate of analysis or any test results or verification data (time and temperature) demonstrating compliance with process or microbial standards.</p>	
Raw Animal Waste (e.g., vermicompost, raw manure, improperly or undocumented composted manure)	Must follow the 90/120 rule: Allow a 120-day application interval (time lapse between application & harvest) for crops that grow in contact with the ground (e.g., root crops and leafy greens) OR allow a 90-day application interval for crops that DO NOT grow in contact with the ground (e.g., vine crops). Human waste is prohibited.	
Treated Animal Waste (e.g., properly composted manure, pelletized chicken litter) or biosolids.	<p><i>If produced on-farm:</i> records of composition, dates of treatment, methods utilized and application dates must be documented.</p> <p><i>If purchased commercially:</i> get records that serve as evidence of adequate processing to eliminate pathogens of human concern, such as a letter of guarantee, certificate of analysis or any test results or verification data (time and temperature) demonstrating compliance with process or microbial standards.</p>	

F-7.1 Animal-Based Soil Amendments Risk Assessment

(Conduct Seasonally and any time there is a change made to the system or a situation occurs that could introduce an opportunity to contaminate the system)							
If your answer to a question indicates a risk of a food safety hazard, then further understanding, conducting a risk assessment and/or Preventive or Corrective Action(s) are needed to minimize possible contamination.							
Area of Potential Risk with BSAAO's	Yes	No	NA	What is the potential risk identified?	Likelihood (Circle One)	What Preventive/Corrective Action(s) will you use to minimize the risk?	Date/Initials
Is raw, untreated manure located within 400 feet of produce fields?					Low Medium High		
Is raw untreated manure located within 200 feet of well heads?					Low Medium High		
Is raw untreated manure located near surface water sources used during the production of fresh fruits and vegetables?					Low Medium High		
Do you currently have a procedure in place for raw manure applications to include the 90/120-day National Organic Program rule?					Low Medium High		
Do you wait a 2-week period after application and incorporation of raw manure prior to planting?					Low Medium High		
For On-Farm Treated Compost: Do you keep records of passive and static compost treatment processes, including time/temperature requirements?					Low Medium High		

F-7.1 Soil amendment application record

Date	Field name/ Crop	Days to harvest	Soil amendment used	Rate applied per acre	Is this a treated or a raw material?	Comments