

# **Mesa Top Farm Food Safety Manual**

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on January 17, 2012

# SECTION 1: General Requirements

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## 1.1 Food Safety Policy

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### 1.1.1

Mesa Top Farm's written food safety policy is attached to the appendix of this section.

## 1.2 Accountability

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### 1.2.1

The following employees have accountability for food safety at Mesa Top Farm:

**Farmer John**

24-hour contact information in the event of a food safety emergency is as follows:

**555-555-1234**

### Best Practice Information

#### Accountability

- *Accountability can be with one person or a number of individuals with designated responsibilities.*
- *Personnel with food safety responsibilities should receive training sufficient to their responsibilities (e.g. completed at least one formal food safety course/workshop or by job experience) and demonstrate a knowledge of food safety principles<sup>1</sup>. This person(s) should exhibit good food safety practices and encourage crew supervisors to set a good example.*
- *All farm employees need to be made aware of who is responsible/accountable for food safety onsite.*

## 1.3 Documentation

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### 1.3.1

Mesa Top Farm is aware that documentation is required to demonstrate that our food safety plan is being followed.

### Best Practice Information

#### DOCUMENTATION

- *Documents, records of procedures, (SOPs - standard operating procedures) and policies should be included your Food Safety Plan.*
- *All documents need to be readily accessible for review/inspection and kept up to date. They may be maintained on-site or at an off-site location, or accessible electronically (e.g., MSDS) and must be kept for a minimum of 2 years or as required by prevailing regulation.*
- *A self-audit of your food safety manual should be performed annually. The person reviewing the plan should have a knowledge of food safety requirements and should*

- document that the review was performed and record any corrective actions required.*
- *If your food safety manual review reveals that changes need to be made, just log into the online tool and complete the relevant section to generate an updated section of your plan.*

## **1.4 Traceback**

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### **1.4.1**

Mesa Top Farm has systems and records in place to enable one step forward (with the exception of direct to consumer sales) and one step back traceability of products. The traceback procedure used is attached to the appendix.

A traceback audit exercise is conducted annually to ensure records and procedures at Mesa Top Farm are sufficient to allow traceback of products.

### **Best Practice Information**

#### **TRACEBACK**

- *Records to help enable traceability of product may include date of harvest, identification of who harvested and/or packed product, quantities, farm identification (field or block) and transporter. Additional information may also be included such as lot numbers.*
- *A trace back and trace forward exercise should achieve accurate traceability within 4 hrs or as required by applicable regulations, and should achieve 99-100% accuracy.*
- *It is helpful to ask someone not familiar with your system to undertake the trace back check. This will allow your system to be reviewed by a new set of eyes to assess availability, legibility and interpretability of your traceback system, similar to what a third party purchaser/inspector/auditor might experience.*

## **1.5 Recall**

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### **1.5.1**

The recall procedure used at Mesa Top Farm is attached to the appendix.

The recall system is tested annually.

### **Best Practice Information**

#### **RECALL**

*A recall is terminated when both regulating bodies (eg FDA) and the recalling producer/packer agree that the recalled product has been removed from the supply chain and that the proper disposition and/or corrective action(s) have been completed. Please refer to the FDA website for additional recall requirements*

*<http://www.fda.gov/Safety/Recalls/IndustryGuidance/ucm129259.htm>.*

## 1.6 Corrective Action Procedure

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### 1.6.1

Mesa Top Farm's documented corrective action procedure is attached to the appendix.

## 1.7 Record Keeping

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### 1.7.1

Please see the appendix of Mesa Top Farm's food safety plan for training records for designated employees on:

- traceback procedures
- recall procedures
- corrective action procedures

## SECTION 2: Worker Health and Hygiene

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### 2.1 Toilet Facilities

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#### 2.1.1

All personal hygiene facilities (portable or fixed facilities) and hand washing stations at Mesa Top Farm are kept clean, well supplied with toilet paper, water, soap, single use paper towels and a towel disposal container.

Mesa Top Farm cleans and maintains these facilities at the following frequency:

**weekly**

#### Best Practice Information

##### TOILET AND HAND WASHING FACILITIES

- *Toilet facilities must be maintained in a sanitary condition and cleaned as often as necessary, preferably daily. The frequency of cleaning required will depend on the level of usage. The key point is to ensure that they are cleaned frequently enough to ensure suitable for use. Facilities should be well stocked and clean at all times.*

##### **Toilet facilities**

- *The Federal Code of Regulations<sup>19</sup> requires that toilet facilities be adequately ventilated, appropriately screened and have self-closing doors that can be locked from inside to ensure privacy. Toilet and handwashing facilities must also be located in close proximity to each other.*
- *Toilet paper must be held on a toilet paper holder or dispenser to keep it from being set on the floor or another place where it could become contaminated<sup>2</sup>.*
- *Where necessary, racks and storage containers for protective clothing and tools shall be provided so these items can be removed and properly stored prior to entering toilet facilities.*
- *Toilet facilities should not be located near an irrigation water source, or in a location where heavy rains could cause sewage to run into fields.*

- The doors of a toilet facility should not open into a room or area where food is exposed.

### **Hand washing facilities**

- Hand washing stations can be provided inside or adjacent to portable or fixed toilet facilities.

#### **All hand washing stations (portable or fixed)<sup>2</sup>**

- Must use potable water.
- Shall provide soap and single-use hand towels. Soap should be dispensed from a dispenser rather than a soap bar. Paper towels or a similar single-use-drying towel should be available from a dispenser for hand-drying.
- Shall provide signage in applicable languages and/or pictures adjacent to hand wash basins requiring people to wash their hands after each toilet visit.

#### **For portable handwashing facilities<sup>2</sup>:**

- Containers used to store and transport water for hand washing should be emptied, cleaned, sanitized and refilled with clean water routinely.
- Containers should have a minimum capacity of 15 gallons of water.
- There should be a mechanism for collecting and proper disposal of dirty water from hand washing, rather than letting it fall on the ground e.g. a tank that captures used water.

### **2.1.2**

Mesa Top Farm has toilet and hand washing facilities that are easily accessible to employees.

Mesa Top Farm has the following personal hygiene and hand washing facilities available for employees:

**there are toilet and hand wash facilities in the farm building that is adjacent to the fields.**

### **Best Practice Information**

#### **ACCESSIBILITY TO TOILET FACILITIES**

##### **What is an adequate number of toilet facilities?**

- The Code of Federal Regulations (CFR)<sup>19</sup> stipulates that there must be 1 toilet facility and 1 hand-washing facility for every 20 workers of each sex, or any fraction of 20. For example, for 30 workers, the grower would be required to supply two toilet facilities. Urinals may be installed in rooms used only by men, but the number of toilets cannot be less than  $\frac{2}{3}$  the minimum number<sup>2</sup>.
- Hand-washing facilities should exist in the same quantity as toilets.
- Some states have other requirements, eg in California Cal-OSHA states that where there are less than five employees, separate toilet rooms for each sex are not required<sup>2</sup>. **Please consult your local [OSHA regulations](#) for further information.**
- According to the CFR<sup>1</sup>, toilet and handwashing facilities are not required for employees who perform field work for a period of three (3) hours or less (including transportation time to and from the field) during the day.

### **What are the accessibility requirements<sup>2</sup>?**

*The placement of sanitary facilities is important both to employee access and for preventing field contamination.*

- *The toilet facilities should be within 1/4 mile from each workers' place in the field.*
- *Where, due to terrain, it is not feasible to locate facilities as required above, the facilities shall be located at the point of closest vehicle access<sup>1</sup>.*
- *It is imperative that employees be able to use the toilet facilities whenever they need it, rather than only during breaks. This will decrease the likelihood of employees relieving themselves in or near the fields, which can lead to contamination of the food product.*

### **Best Practice Information**

#### **CHOOSING A GOOD LOCATION FOR TOILET FACILITIES**

- *Field/portable toilets must be located away from growing fields, packing/storage house(s) and any areas where there is food or food contact surfaces.*
- *Toilet facilities and hand washing stations need to be accessible for servicing/cleaning to ensure they are appropriately maintained.*

## **2.2 Sewage and Septic Systems**

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### **2.2.1**

Mesa Top Farm maintains all sewage and septic systems to prevent contamination to fields or produce. Sewage and septic inspections are performed at the following frequency:

**monthly**

### **2.2.2**

Mesa Top Farm's plan for immediate control of spills from sewage/waste is attached the appendix of this section.

### **Best Practice Information**

#### **SEWAGE CONTAMINATION TREATMENT PLAN**

*Any sewage spills must be dealt with immediately in a manner that minimizes the risk of contaminating the produce. In the case of a sanitation unit spilling or any other septic leakage occurring in or near field boundaries, the following cleanup steps will be performed:*

- *Any affected produce is immediately disposed of in a covered waste bin.*
- *The contaminated area will be marked off with caution tape or string.*
- *Signs in appropriate languages will be posted at the perimeter prohibiting entry to the contaminated area.*
- *People and animals will be kept out until the area is sufficiently decontaminated.*
- *Any solid waste still resting on the surface will be collected, shoveled up, and removed to the waste bin.*
- *Any affected permanent structures will be hosed off and disinfected with a dilute bleach solution.*
- *If a sanitation unit has caused the contamination, it will be cleaned up and replaced by*

*the company providing the units and maintenance services.*

*The spillage event and corrective actions should be written down on sanitation logs and kept in your records.*

## **2.3 Hand Washing**

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### **2.3.1**

All employees at Mesa Top Farm have been trained in best practices for hand washing as outlined below and are aware they need to wash hands before starting work, after using the toilet, after each break, after using a handkerchief/tissue and at any other times when their hands might become a source of contamination.

#### **Best Practice Information**

##### **PROPER HAND WASHING TECHNIQUE**

*All employees handling produce for processing or sale must use proper hand washing techniques before beginning work and after returning to work after taking breaks, going to the restroom, eating, smoking, or otherwise potentially contaminate their hands.*

*Proper hand-washing technique includes the following:*

- 1. Wet hands with clean water (warm is preferred if available), apply soap, and work up a lather.*
  - 2. Rub hands together for at least 20 seconds.*
  - 3. Clean under the nails and between the fingers.*
  - 4. Rub fingertips of each hand in suds on palm of opposite hand.*
  - 5. Rinse under clean, running water.*
  - 6. Dry hands with a single-use towel.*
- It is important to remember to wash hands after touching any potentially unsanitary surface.*
  - When possible, turn off the faucet with the single-use towel instead of directly with the hand (when using a sink and faucet).*
  - Do NOT use a paper towel more than once or share towels with others.*

***Use of Hand Sanitizers:*** *Current research indicates that proper hand washing with soap and water is the most effective method at removing potential pathogens from the hands. Soil and dirt on hands may actually decrease the effectiveness of sanitizers. Frequent use of hand sanitizers can also strip the outer layer of oil from hands, leading to cracking and dryness, which can trap germs and bacteria. Hand sanitizers can be used in addition to good hand washing, but not as a substitute.*

## **2.4 Proper Use of Toilet Facilities**

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### **2.4.1**

All employees at Mesa Top Farm have been trained in best practices for the proper use of toilet facilities as outlined below.

## Best Practice Information

### PROPER USE OF TOILET FACILITIES

- Used toilet tissue **must** be flushed down the toilet. It **must not** be disposed of on the floor, in trash receptacles, or in boxes.
- Urinating and defecating in fields is **absolutely prohibited**.
- Any feminine hygiene products should be disposed of in trash receptacles provided. Feminine hygiene products should not be flushed as these products will block pipework and sewage systems.

## 2.5 Worker Health and Hygiene Policies

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### 2.5.1

Mesa Top Farm's policies for protective clothing, hair coverings, jewelry, artificial nails and storage of loose items such as cell phones in clothing are attached to the appendix of this section.

## Best Practice Information

### PROTECTIVE CLOTHING REQUIREMENTS

- It is recommended that employees wear hair coverings while performing activities in production fields and during produce packing activities. Hats or caps are acceptable hair coverings.
- It is recommended that bracelets, large chains and necklaces not be allowed in the packinghouse or in the field for safety and hygiene reasons<sup>2</sup>. Items that may be allowed, depending on your requirements, are<sup>2</sup>:
  - Watches, wedding rings or other fairly simple rings
  - Necklaces that stay covered by clothing
  - Unobtrusive earrings that stay near the head and pose no risk to falling out
  - Other concealed or covered jewelry
- It is recommended that cell phones be kept secure. Cell phones or other items should not be kept in pockets if there is risk of them falling out.

## 2.6 Designated Break Areas

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### 2.6.1

**a building next to the field includes an employee kitchen with refrigerator, wash station, stove, and potable water source**

## Best Practice Information

### BREAK AREAS AND DRINKING WATER STATIONS

- A designated area does not need to be a specifically built area. It just needs to be an area where workers can eat, drink, smoke etc. away from where produce is being



*handled/harvested/packed.*

- *The area may also include places to store employees' personal belongings so they are away from crops and field equipment.*
- *Break areas should be near hand washing facilities so staff can easily wash hands before returning to work.*
- *The break areas should be marked on your farm map.*
- *These areas should be well maintained. For example, regularly cleaned so that contamination risk is minimized and rodents and other pests are not attracted to the area.*
- *You may develop house rules for employees or have someone accountable for ensuring these areas are kept clean. Your policy should include cleaning activities and it is good practice to have these activities documented.*

### **Field based drinking water stations<sup>1</sup>**

- *Potable drinking water must be available (and easily accessible) to field employees.*
- *Stations with single-use cups and a trash receptacle are recommended. Fountains may be used but the use of common drinking cups or dippers is prohibited.*
- *Water should be suitably cool and in sufficient amounts, taking into account the air temperature, humidity and the nature of the work performed, to meet the needs of all employees.*
- *Drinking water containers should be constructed of materials that maintain water quality, shall be refilled daily or more often as necessary, kept covered and be regularly cleaned.*
- *Employers must notify each employee of the location of toilet, handwashing and drinking water facilities.*
- *Employees must allow each employee reasonable opportunities during the workday to use them. Each employee should also be informed of the importance of : (i) water and facilities provided for drinking, handwashing and bathroom activities; (ii) drinking water frequently and especially on hot days; (iii) urinating as frequently as necessary; (iv) washing hands both before and after using the toilet; and (v) washing hands before eating and smoking to minimize employee exposure to the hazards of heat, communicable diseases, retention of urine and agrichemical residues.*

#### **2.6.2**

All employees and visitors to Mesa Top Farm are made aware that eating, drinking (other than potable water for field employees), spitting, chewing gum and using tobacco is only allowed in clearly designated break areas.

### **Best Practice Information**

#### **EMPLOYEE BREAK AREAS**

*Eating, drinking (other than potable water for field employees), spitting, chewing gum and using tobacco are only allowed in clearly designated break areas. These areas must be located away from production fields and packing house areas.*

## **2.7 Worker Illness and Injury**

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### **2.7.1**

All employees and visitors to Mesa Top Farm are made aware that if they show signs of

illness they need to restrict their direct contact with produce or food-contact surfaces. Mesa Top Farm employees are also aware that they must report signs of illness to the supervisor before beginning work.

### **Best Practice Information**

#### **WORKER ILLNESS REPORTING**

- *Employees must restrict their direct contact with produce or food-contact surfaces if showing signs of illness.*
- *Employees must report signs of illness to the supervisor before beginning work*
- *Employees who have slight illnesses, but are healthy enough to work, shall be assigned to work in non-food areas, such as transporting closed boxes.*
- *Examples of illnesses include: vomiting, jaundice, diarrhea, persistent coughs or sneezing, a runny nose, or discharge from the eyes, nose, or mouth.*

#### **2.7.2**

All Mesa Top Farm employees have been trained and are aware that they need to restrict their direct contact with produce or food-contact surfaces if they have an open sore or lesion that cannot be effectively covered.

### **Best Practice Information**

#### **OPEN CUTS AND SORES**

- *Methods to effectively cover an open cut or sore on the hand include using an impermeable bandage and a clean, single-use glove over the bandage.*
- *Employees who have cuts which cannot be covered, but are healthy enough to work, can be assigned work in non-food areas, such as transporting closed boxes.*

#### **2.7.3**

All employees (and visitors) to Mesa Top Farm are made aware that they need to seek prompt treatment for cuts, abrasions and other injuries.

### **Best Practice Information**

#### **ACCIDENTS, INJURIES AND FIRST AID KITS**

- *If an accident/injury has occurred, an accident/injury form should be completed.*
- *You should also consider ways/implement corrective actions so such accidents/injuries can be avoided in the future.*

#### **First Aid Kits**

- *First aid kits should be present at all permanent sites and in the vicinity of field work, with the supplies checked and updated on a regular basis.*
- *Everyone should be aware of the exact location(s) of first aid kit(s) which shall also be kept in a sanitary condition.*
- *Any cut, abrasion, or other injury which occurs while working should be dealt with immediately to preserve the health and well-being of the employee and to minimize the risk of contamination to produce.*

## 2.7.4

Mesa Top Farm's policy outlining handling/disposal of food or food contact surfaces that have been in contact with blood or other bodily fluids is attached the appendix of this section.

## 2.8 Record Keeping

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### 2.8.1

Please see the appendix of this section for documented training records for all employees on:

- Proper hand washing techniques
- Proper use of toilet facilities
- Glove use policy
- Protective clothing, hair coverings, artificial nails, jewelry policy, other items stored in/on clothing policies
- Use of designated break areas policy
- A written accident/injury form

## SECTION 3: Previous Land Use and Site Selection

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### 3.1 Risk Assessment

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#### 3.1.1

A written record of the initial risk assessment for previous land use history at Mesa Top Farm is attached to the appendix of this section.

#### Best Practice Information

##### PREVIOUS LAND USE RISK ASSESSMENT

Your **initial** risk assessment should consider: Record a physical description of the soil type in each field, the crop history and soil amendment history. Examples of records include: planting schedules, pesticide or fertilizer applications etc.

**Septic leach fields:** If located within 100 ft of growing fields, a risk based assessment should be performed. Consider the topography of land, ground sloped or graded away from growing field, and physical barriers as these influence the potential for contamination<sup>15</sup>.

**Previous land use:** Do not plant in a field that does not have a well-documented land history. Begin site assessment with land history documentation. Fields should not have been used previously as feedlots, landfills or toxic waste sites (e.g. a disposal site for chemicals)<sup>15</sup>. Persistent heavy metals such as mercury and lead may result from such previous land use.

Growers should make sure that their land has not been previously used for biosolid disposal or as a livestock site, or have soil tested for persistent pathogen populations. If the land has been used for animal husbandry, which is the practice of raising and breeding livestock, it is recommended that a buffer time of 3 years is allowed before using the field for edible crop cultivation, since most serious pathogenic microorganisms cannot survive in the soil for longer than this amount of time<sup>3</sup>.

*If another person or operation previously has managed the production site, a Previous Land Use declaration or affidavit, filled out by the previous owner/manager, can be used to document land history. These declarations/affidavits are commonly used by new farm owners/managers wishing to gain USDA National Organic Program (NOP) certification.*

*If previous land history is unknown, soil testing for pathogens can help assess food safety risks. If land history is unknown, consult your clients/food safety auditing company for their requirements.*

***Adjacent Land Use:*** *Topographical features such as strong slopes can encourage contamination from adjacent fields and water sources by rain or flooding. If the ground slopes toward the crop, it may be necessary to erect physical barriers like trenches, fences, diversion berms or ditches<sup>3</sup>. Also consider wind patterns and run-off seepage patterns for the possibility of movement from adjacent fields.*

*If manure must be applied to nearby fields, it should be covered while stored, and applied on a schedule that does not interfere with the produce-growing schedule. Maintain these coverings, containers and barriers regularly<sup>3</sup>. The field should not be near animal feedlots or other points where the movement of animal waste (run-off, wind dispersal) off-site, by any means, will contaminate the field<sup>3</sup>.*

***Flooding:*** *An assessment of potential contamination should be done following any significant flood event. This may include soil testing to determine if there is contamination<sup>7</sup>. Fresh produce that has been in contact with flood waters must be discarded from the human food supply due to potential exposure to sewage, animal waste and pathogens.*

***Organic Certification:*** *For farms wishing to be certified organic by the USDA, you will need to ensure the land to be certified also meets the requirements of the USDA National Organic Program (NOP) Standard. For further information on these requirements for previous land use please see “NOP Regulations” on the USDA AMS National Organic Program website: [www.ams.usda.gov/AMSv1.0/nop](http://www.ams.usda.gov/AMSv1.0/nop). Areas to consider during your **annual** land use risk assessment <sup>2</sup>:*

*Check that every production site selected has no:*

- *Unusually high levels of animal and bird activity (e.g., migratory paths, nesting or feeding areas)*
- *And no adjacent areas where:*
  - *livestock waste, dust, aerosols or feathers may drift or leach*
  - *crop production inputs may drift or leach (e.g., agricultural chemicals, soil amendments, fertilizers, pulp sludge)*
  - *non-agricultural activities contribute to air, water or soil pollution [e.g., industrial activities, roadside debris, foreign objects (e.g., glass bottles, etc.)]*

### **3.1.2**

Written records for preventive and/or corrective measures performed as a result of land use risk assessment(s) are attached to the appendix of this section.

## **Best Practice Information**

## **PREVIOUS LAND USE CORRECTIVE AND PREVENTIVE ACTIONS**

*Example corrective/preventive actions for risks associated with site selection/previous land use<sup>2</sup>:*

- *Testing soil--If land history indicates a recent possible source of contaminants (e.g., from dairy operations, feedlots, or other waste or flooding), the soil should be tested for microbial contaminants.*
- *Avoiding growing an edible crop.*
- *Incorporating manure into the soil in adjacent fields.*
- *Constructing and maintaining barriers (e.g., fences, ditches, storage pits, buffer zones).*
- *Seeking and following expert advice.*
- *Using animal/bird scaring devices (e.g., bangers, wailers).*

## **SECTION 4: Agricultural Water**

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### **4.1 Water System Description**

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#### **4.1.1**

Mesa Top Farm uses water for field use.

A description of the water source(s) and distribution system used at Mesa Top Farm is attached to the appendix.

### **4.2 Water System Assessment**

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#### **4.2.1**

The water distribution system in use at Mesa Top Farm is constructed so that human or animal waste systems are not cross-connected with agricultural water systems.

#### **Best Practice Information**

### **WATER DISTRIBUTION SYSTEMS AND POTENTIAL PATHOGENS**

*Animal and human waste can carry pathogenic organisms that can readily survive in water<sup>2</sup>. These organisms can pose a serious risk to food safety and human health:*

- *Bacteria (e.g., E. coli, Salmonella)*
- *Parasites (e.g., Cryptosporidium spp., Giardia spp.)*
- *Viruses (e.g., Hepatitis A, Norovirus) which can readily survive in water<sup>2</sup>.*

*It is important to ensure that there are no cross-connections between agricultural water sources and contaminated sources such as water systems intended to convey untreated human or animal waste. Eliminating cross-connections will prevent back-siphonage, which can cause contamination of one water source by another.*

#### 4.2.2

An initial risk assessment of Mesa Top Farm's water distribution system and all its water sources has been performed. Written risk assessment(s) and any associated documents are attached to the appendix.

Mesa Top Farm uses well water for agricultural purposes.

#### Best Practice Information

##### WELL WATER RISK ASSESSMENT

*Areas to consider during your risk assessment include (but are not limited to):*

- *Runoff or spills from agricultural chemicals, oil, fuel, manure, etc. Ensure that wells are designed and maintained to prevent surface run-off and soil infiltration from contaminating the water supply. Locate wells in an elevated area that is upslope of potential sources of contamination if possible<sup>3</sup>.*
- *Growers should consider the risks of the potential contaminants when deciding how far away a well should be situated from a potential source of contamination. Sources such as an animal feedlot or animal waste storage facility carry a very high risk, whereas the risk of a storage facility for treated compost is much lower<sup>3</sup>.*
- *Wells should be covered to prevent contamination with bird/animal feces<sup>4</sup>.*
- *Working condition of the well (e.g., seals and well casings fit tightly, pump functioning)<sup>4</sup>.*
- *Well casings should be inspected regularly and repaired as needed. The casing should extend to the water level in the well, and have a grout seal<sup>3</sup>.*
- *Unused or inadequately maintained wells can provide a direct path for contaminants to enter ground water sources. Hire a licensed, registered well driller or pump installer to retire wells that are not being used<sup>3</sup>.*
- *Also consider the condition of older or shallow wells – they may be more easily influenced by surface water sources (thinner or corroded casing is more likely to leak lubrication oils<sup>3</sup>).*
- *Leaching of sunken wells by overland flooding<sup>2</sup>. A sanitary well sleeve may be installed to protect against flood contamination.*
- *Preventing backflow into the well. Use antibackflow devices when filling pesticide sprayer tanks, as well as on faucets with hose connections<sup>3</sup>.*
- *Store irrigation pipes so they don't become contaminated by manure, pests or agricultural chemicals<sup>2</sup>.*
- *Your water source should be tested prior to initial use to determine adequacy for its intended use. For water already in use, water sampling should be conducted and a testing schedule established.*
- *Water testing requirements will be discussed in more detail later.*

Mesa Top Farm uses spring and/or rainwater fed pond/reservoir/dugout water for agricultural purposes.

#### Best Practice Information

##### SPRING AND/OR RAINWATER RISK ASSESSMENT

*Areas to consider during your risk assessment include (but are not limited to):*

- *Unusually high levels of wild animal and bird activity (e.g., migratory paths, nesting or*

- watering areas) near surface water*
- *Access by livestock, domestic animals and birds.*
  - *Recreational use (e.g., swimming area).*
  - *Runoff or spills from agricultural chemicals, oil, fuel, manure, etc. Study water movements on land to make sure that livestock waste from nearby barnyards/fields cannot enter water sources via runoff or drift<sup>4</sup>.*
  - *Store irrigation pipes so they do not become contaminated by manure, pests or agricultural chemicals<sup>2</sup>.*
  - *Any historical testing results of the water source, the characteristics of the crop, the stage of the crop, and the method of irrigation.*
  - *Your water source should be tested prior to initial use to determine adequacy for its intended use. For water already in use, water sampling should be conducted and a testing schedule established.*
  - *Water testing requirements will be discussed later.*

## **4.3 Water Management Plan**

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### **4.3.1**

Information is attached to the appendix which describes Mesa Top Farm's ongoing water management plan to protect water source(s) and their distribution system from contamination.

### **4.3.2**

The written procedure for the ongoing water testing program at Mesa Top Farm is attached to the appendix.

Mesa Top Farm uses well water for agricultural purposes.

### **Best Practice Information**

#### **WELL WATER TESTING**

##### ***Frequency and When to Test Well Water (used for irrigation purposes)<sup>2</sup>***

- *The frequency of testing required and the location of water sampling needs to be determined based on the water source, its particular history and your risk assessment. If prior test results are available, they can be used to establish the baseline.*
- *It is recommended that farm well water be tested at least twice each year and treated if fecal coliform bacteria are present<sup>8</sup>. The best time to sample your well water is when the probability of contamination is greatest. This is likely to be in early spring just after the thaw, after an extended dry spell, following heavy rains or after lengthy periods of non-use. In addition to regular testing, test well water after any repairs such as a pump repair or replacement and if there has been a change in water appearance, color or odor<sup>8</sup>. Note: Current industry standards or prevailing regulations for specific commodities being grown may necessitate additional testing<sup>1</sup>.*
- *When contamination is suspected, testing frequencies and locations of testing within the water distribution system may need to increase until adequacy of water quality for intended use has been shown.*

##### **Testing Requirements**

- The laboratory chosen for water testing must have, at minimum, passed a Good Laboratory Practices (GLP) audit or participates in a Proficiency Testing program, and utilize BAM, US EPA, FDA or AOAC International testing methods for analysis of each target organism<sup>1</sup>. Labs which use PCR based or immunochemistry based detection methods with a sensitivity of 1 organism per 25 gram sample,  $\leq 10\%$  false positive rate and  $\leq 2\%$  false negative rate are recommended<sup>22</sup>.
- The microbiological quality of your water is determined by looking for the presence of bacteria indicative of fecal (sewage) contamination – namely *E. coli*. *E. coli* are present only in the gut of humans and animals. Their presence in well water therefore indicates definite fecal (sewage) pollution<sup>2</sup> possibly as a result of surface water infiltration or seepage from a septic system.
- It is therefore recommended that your agricultural water should be tested for Generic *Escherichia coli* (*E. coli*), *E. coli* 0157-H7, Enterohemorrhagic *E. coli* (EHEC) and *Salmonella* spp (which can also exist in water sources). All tests must include a count of the number of *E. coli* units, and not just its presence or absence<sup>8</sup>.
- Some localities may also require testing for fecal coliforms.

### **Procedure for Sampling Well Water**

- Once you have chosen a laboratory, call first to arrange shipping and analysis. They also may have a sampling procedure for you to follow. If so, please attach a copy to the appendix of your food safety plan. If not, the following procedure (reproduced from Canada GAP)<sup>2</sup> provides the key points for taking a sample.
  - Get a proper, sterile sample bottle from the accredited laboratory. Make sure you read and follow the instructions included with the bottle. Do not use any other container to collect the sample because it will not yield meaningful results and will not be accepted by the laboratory.
  - Plan to sample your well water when you're sure you can deliver it to the designated location within 24 hours. Do not let your water sample sit for a long period of time as this can lead to inaccurate results.
  - Ideally the sample should be pulled from the well head if possible. Samples should be taken by trained sample collectors (this procedure can be used to train your employees). If this is not possible, take a sample from an inside tap with no aerator, such as the sink. If there is an aerator, screen or other attachments, remove them from the faucet prior to sampling. Taking a sample from an outside faucet or the garden hose is not recommended<sup>2</sup>.
  - Disinfect the end of the faucet spout with an alcohol swab or dilute bleach solution (1 part household bleach to 10 parts water) before running water to remove debris or bacteria. Disinfecting the tap with a flame is not recommended because this can damage the faucet.
  - Turn on cold water and let it run for three to four minutes to remove standing water from your plumbing system.
  - Remove the sample bottle lid. **DON'T TOUCH THE INSIDE OF THE LID. • DON'T PUT THE LID DOWN. • DON'T RINSE OUT THE BOTTLE.**
  - Fill the bottle to the level that is marked, as described in the enclosed instructions, and close the lid firmly.
  - Make sure to fill out the enclosed paperwork completely and accurately or you may not get your results back<sup>2</sup>. The water source should be identified on sample submittal forms<sup>5</sup>.
  - Keep the sample refrigerated (but not frozen) until it's returned to the drop-off location. Again, deliver the sample within 24 hours or it may not be processed. Remember that proper handling will help to make sure that your test results are



accurate! Use a cooler with ice packs to keep the sample cold until it can be refrigerated and while transporting it to the lab.

## **Interpreting the Test Results<sup>22</sup>**

### **Acceptance criteria**

- *E. coli* 0157-H7, Enterohemorrhagic *E. coli* (EHEC) and *Salmonella* spp results must be negative<sup>22</sup> (0 per 100 mL of water).
- Generic *E. coli* results must lie between  $\leq 126$ MPN (or CFU)/100mL and  $\leq 235$ MPN/100mL for any single sample where edible portions of the crop **ARE** contacted by water<sup>22</sup>.
- If testing has been performed for fecal coliforms then the limit is less than 2.2 fecal coliforms/100 mL of water. The Environmental Protection Agency (EPA) established this standard for reclaimed water (treated effluent) used on nonprocessed fresh produce. This 2.2 fecal coliforms/100 mL limit is considered free of pathogens for nonpotable agricultural purposes by the EPA. If higher densities of fecal coliforms are detected, it is suggested that growers do not use overhead irrigation<sup>4</sup>.
- It is recommended that you check your local/state guidelines before interpreting any results<sup>2</sup>. The laboratory who undertook the test, local EPA office and your local Agricultural Extension agent may also be able to help.
- Please note: the above limits outlined are for use for agricultural irrigation water. If you are also using your well water source for drinking then the limits should meet EPA drinking water standards. Please consult <http://water.epa.gov/drink/contaminants/index.cfm> (EPA web site) for further information on the requirements for safe drinking water. **Note: Water containing *E. coli* is not safe to drink.**

### **What to do when test results are out of limits - corrective action**

- If results are found to exceed the acceptable limits, **corrective action should be taken immediately.**
- Corrective actions for adverse water tests generally include three steps<sup>2</sup>:
  - Identify and correct the source of contamination (e.g., working condition of the well; overland flooding due to improper location of well casing or land grading; drifting or leaching of manure due to improper storage; problems with septic or sewage systems).
  - If a well is contaminated, it can be chemically treated to reduce fecal coliform counts. (e.g. shock chlorination of wells; batch treatment of cisterns or tanks; installing a permanent treatment system).
  - Re-test water.
    - Water that tests out of specified limits for microbial contamination should not be used for crop production<sup>5</sup>. Mitigation measures should be taken or an alternative water source used.

Click [here](#) for further information on shock chlorination methods for well water. For additional information, visit the [Resources](#) section.

### **Documentation**

- Tests, their results and actions taken must be documented<sup>1</sup>.

Mesa Top Farm uses surface water sources for agricultural purposes.

## Best Practice Information

### SURFACE WATER TESTING

#### **Frequency and When to Test Surface Water**

- *The frequency of testing required and the location of water sampling needs to be determined based on the water source, its particular history and your risk assessment.*
- *Surface water quality varies with both time and location. Sampling is only a small snapshot of the big picture; therefore, it is difficult to establish sample frequencies<sup>2</sup>. However, a baseline can be established by sampling at least once a month for one season to determine what would be normal for your water source<sup>22</sup>. If prior test results are available, they can be used to establish the baseline.*
- *Thereafter, it is recommended that surface water be tested quarterly in warm climates such as California, Florida, Texas and other southern states. In northern climates, such as New York, Pennsylvania, and Michigan it is recommended that surface water is tested three times during the growing season – first at planting, second at peak use, third at or near harvest<sup>4</sup>. Testing should be performed more often if historical data indicates a need<sup>5</sup>.*
- *Note: Current industry standards or prevailing regulations for specific commodities being grown may necessitate additional testing<sup>1</sup>.*
- *When contamination is suspected, testing frequencies and locations of testing within the water distribution system may need to increase until adequacy of water quality for intended use has been shown.*

#### **Testing Requirements**

- *The laboratory chosen for water testing must have, at minimum, passed a Good Laboratory Practices (GLP) audit or participates in a Proficiency Testing program, and utilize BAM, US EPA, FDA or AOAC International testing methods for analysis of each target organism<sup>1,22</sup>. Labs which use PCR based or immunochemistry based detection methods with a sensitivity of 1 organism per 25 gram sample,  $\leq 10\%$  false positive rate and  $\leq 2\%$  false negative rate are recommended<sup>22</sup>.*
- *The microbiological quality of your water is determined by looking for the presence of bacteria indicative of fecal (sewage) contamination – namely *E. coli*. *E. coli* are present only in the gut of humans and animals. Their presence therefore indicates definite fecal (sewage) pollution<sup>2</sup> possibly as a result of surface water infiltration or seepage from a septic system.*
- *It is therefore recommended that your agricultural water should therefore be tested for Generic *Escherichia coli* (*E. coli*), *E. coli* 0157-H7, Enterohemorrhagic *E. coli* (EHEC) and *Salmonella* spp (which can also exist in water sources). All tests must include a count of the number of *E. coli* units, and not just its presence or absence<sup>3</sup>.*
- *Some localities may also require testing for fecal coliforms*

#### **Procedure for Sampling Surface Water**

- *Once you have chosen a laboratory, call first to arrange shipping and analysis. They also may have a sampling procedure for you to follow. If so, please attach a copy to the appendix of your food safety plan. If not, the following procedure (reproduced from Canada GAP)<sup>2</sup> provides the key points for taking a sample.*
  - *Water should be sampled from the source point of entry into the field for surface water, as close to the point of foliar contact for distributions systems, and at fill location for pesticide mixing, frost protection, dust control, and cleaning of equipment by trained sample collectors (this procedure can be used to train your*

- employees). The water source should be identified on sample submittal forms<sup>5</sup>.
- Use a sterile bottle or container with a tight fitting lid. Most laboratories will be able to provide you with bottles and detailed instructions. Be sure to read and follow the instructions closely.
- Do not touch the inside of the bottle, cup or the lid. Do not set the lid down and do not rinse out the bottle.
- When sampling surface water, use a clean, dry weighted pail or a sampling cup mounted on a long handle. Collect the water sample from well below the surface. Alternatively, take the sample at the end of the irrigation line; from the sprinkler or open drip tape.
- Refrigerate the sample immediately after collection and have it transported, under refrigerated conditions (e.g., in a cooler with ice packs), to a lab within 24 hours.

## **Interpreting the Test Results<sup>22</sup>**

### **Acceptance Criteria**

- *E. coli* 0157-H7, Enterohemorrhagic *E. coli* (EHEC) and *Salmonella* spp results must be negative<sup>22</sup> (0 per 100 mL of water).
- Generic *E. Coli* results must lie between  $\leq 126\text{MPN}$  (or CFU)/100mL and  $\leq 235\text{MPN}/100\text{mL}$  for any single sample where edible portions of the crop **ARE** contacted by water<sup>22</sup>.
- If testing has been performed for fecal coliforms then the limit is less than 2.2 fecal coliforms/100 mL of water. The Environmental Protection Agency (EPA) established this standard for reclaimed water (treated effluent) used on nonprocessed fresh produce. This 2.2 fecal coliforms/100 mL limit is considered free of pathogens for nonpotable agricultural purposes by the EPA. If higher densities of fecal coliforms are detected, it is suggested that growers do not use overhead irrigation<sup>4</sup>.
- It is recommended that you check your local/state guidelines before interpreting any results<sup>2</sup>. The laboratory who undertook the test, local EPA office and your local Agricultural Extension agent may also be able to help.
- Please Note: The above limits outlined are for use for agricultural irrigation water. If you are using your surface water source for drinking also then the limits should meet EPA drinking water standards. Please consult <http://water.epa.gov/drink/contaminants/index.cfm> (EPA web site) for further information on the requirements for safe drinking water.
- **Note: Water containing *E. coli* is not safe to drink.**

### **What to do when test results are out of limits - corrective action**

- If results are found to exceed the acceptable limits, **corrective action should be taken immediately.**
- Corrective actions for adverse water tests generally include three steps<sup>2</sup>:
  - Identify and correct the source of contamination. If you have consistent problems with agricultural water quality, the best solution is to try and identify and correct the source of the problem. Look for upstream contamination sources such as livestock operations or campsites, or on-site contamination sources such as domestic and wild animals, improper manure or chemical storage and faulty sewage or septic systems. Vegetative buffer zones around ponds and along streams can help by filtering water and slowing down run-off. Ponds can be protected from significant and persistent problems with wildlife by building fences and/or creating steep sides or rocky berms to discourage the nesting of birds. For serious and persistent water quality problems, site-specific remediation may be possible. Seek advice to avoid

- harming your crop, your workers or the environment<sup>2</sup>.*
- *If water test results indicate the presence of fecal coliforms, filtering the water or using settling ponds can reduce these counts in surface water systems<sup>4</sup>.*
- *Re-test water.*
  - *Water that tests out of specified limits for microbial contamination should not be used for crop production<sup>5</sup>. Mitigation measures should be taken or an alternative water source used.*

### **Documentation**

- *Tests, their results and actions taken must be documented<sup>1</sup>.*

## **4.4 Record Keeping**

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### **4.4.1**

Please see the appendix for training records and other documentation required as part of Mesa Top Farm's Water Management Plan.

## **SECTION 5: Agricultural Chemicals**

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### **5.1 Usage**

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#### **5.1.1**

All agricultural chemicals used at Mesa Top Farm are used in accordance with label directions and any prevailing regulations.

#### **Best Practice Information**

##### **PROPER CHEMICAL USAGE AND STORAGE**

- *If product is intended for export, you will need to consider the agricultural chemical requirements of the destination country<sup>1</sup>. You will also need procedures, such as pre-harvest interval and application rates, which meet the entry requirements of the country(ies) where your product will be traded, if known during production<sup>1</sup>.*
- *Cleaning chemicals should be stored away from a high traffic area and at moderate temperatures and humidity. The area should be kept locked, if possible<sup>3</sup>.*
- *Chemicals should be stored on pallets or racks, not on the bare floor or shelf<sup>3</sup>.*
- *Chemical hazards should be indicated to employees by signs, pictures and/or labels in the chemical storage area, cabinet or other place that is effective<sup>3</sup>.*
- *Information on what to do in the case of a chemical spill (including gas and petroleum spills or leaks) can be found by contacting the "Pollution Control Agency" in your state.*

### **5.2 Agricultural Chemical Policy**

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#### **5.2.1**

Mesa Top Farm's policy for cleaning application equipment and for disposal of waste agricultural chemicals is attached the appendix of this section.

## Best Practice Information

### CHEMICAL APPLICATION EQUIPMENT

- *Agricultural chemical application equipment must NOT be cleaned, used for mixing, maintained, rinsed or flushed where water source(s) or the production site may become contaminated<sup>2</sup>.*

## 5.3 Record Keeping

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### 5.3.1

All personnel who are involved with chemical application at Mesa Top Farm are suitably trained/licensed in chemical use.

## Best Practice Information

### CHEMICAL APPLICATION TRAINING

- *Personnel responsible for chemical applications must be trained and/or licensed, or supervised by licensed personnel, in compliance with current regulations<sup>1</sup>.*
- *Records demonstrating training or licenses should be kept<sup>1</sup>.*
- *Training should include procedures for disposal of waste agricultural chemicals and for cleaning of application equipment that protects against contamination of product and growing areas<sup>1</sup>.*

### 5.3.2

Please see the appendix of this section for documented chemical use records.

## SECTION 6: Animals and Pest Control

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### 6.1 Animal Control - Fields

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#### 6.1.1

Risk assessment records for animal activity in production fields at Mesa Top Farm are attached to the appendix of this section.

Risk assessments are performed at the following frequency:

**annually**

Preventive or corrective measures for animal activity in production fields at Mesa Top Farm are attached to the appendix of this section.

Records are attached to the appendix documenting preventive and/or corrective measures taken as a result of animal activity risk assessment(s) in production fields.

## Best Practice Information

### CORRECTIVE ACTIONS

*Corrective actions for animal intrusions should be developed and implemented if these intrusions are likely to contaminate produce in the field<sup>1</sup>.*

*Some examples of corrective/protective actions include:*

- *Your waste management practices should include minimizing weeds and other potential pest harborage areas (e.g., outside garbage receptacles/dumpsters are closed, and the area around such sites is reasonably clean)<sup>1</sup>.*
- *Non-crop areas next to growing fields are reasonably free of litter (such as cull piles), debris and standing water that may attract or harbor pests.*
- *Where present, removes all feces, wash contaminated equipment as necessary and dispose of any product or packaging materials that may be contaminated.*
- *Develop and implement a pest control program and/or hire a third party pest control company.*
- *Re-evaluate and revise your existing pest control program to better meet your needs. If necessary seek expert advice.*
- *Maintain structures and equipment within or adjacent to fields to minimize harborage of pests and wildlife<sup>6</sup>.*
- *If large numbers of wildlife are seen in the growing area, install or fix fencing.*

### **Best Practice Information**

#### **ANIMAL AND PEST CONTROL RISK ASSESSMENT**

*It is not possible, or may not be allowable, to eliminate all animal influences from production fields. All the same, you need to determine what steps you can take to minimize their presence or activities<sup>6</sup>.*

*Any corrective actions taken for animal control must follow all applicable local, state and federal regulations<sup>7</sup>. To learn more about animal control and any necessary permits or licenses, it is recommended that you contact your state's Department of Natural Resources or the US Fish and Wildlife permits, [www.fws.gov/permits](http://www.fws.gov/permits).*

- *A written assessment of potential contamination risks from animals needs to be done for all your production areas.*
- *The assessment of risk from animals needs to take into consideration the crop characteristics, type and number of animals, pathogens of concern, nearness to the growing field, conservation practices used to reduce indirect spread of pathogens, deterrents and proximity to harvest<sup>7</sup>.*

#### **Pathogens of Concern**

- *[E. coli O157H:7](#) and [Salmonella](#).<sup>9</sup>*

#### **Crop Characteristics**

- *If a crop is destined to be cooked, such as bunched kale or artichokes, then that process kills bacteria, and a less stringent set of food safety practices may apply.*
- *If water is used to rinse or wash a harvested freshly eaten crop, it has the potential to spread pathogens, so animal presence should be assessed more closely.*
- *If a crop has a thin protective skin or will most likely be eaten raw, such as carrots or lettuce, it has the potential to spread pathogens if not thoroughly washed; therefore, animal presence and the link to contaminated water should be carefully assessed.*

## **Type and Number of Animals**

- *Domestic animals (including pets and poultry) should be excluded from fields during the growing season especially close to harvest time<sup>4,6</sup>. Your operation should have risk-appropriate actions to prevent or minimize the potential for contamination of produce with pathogens from animal feces, including from domestic animals used in farming operations. Keep a written record of any preventative or corrective actions used.*
- *If you use domestic animals as part of your farming operation, have measures in place to prevent or minimize the potential for contamination of produce with pathogens from animal urine and feces especially when produce is close to harvest<sup>7</sup>.*
- *In general, some types of wildlife are known to carry low levels of E. coli O157:H7 and Salmonella. Research studies that document the risk from wildlife are scarce and incomplete<sup>10</sup>.*
- *High concentrations of wildlife in the growing and harvesting environment increase risk. When there is a large number of anything with a small risk, the risk increases.*
- *Cattle are a main carrier of E. coli O157:H7 and therefore pose an increased food safety risk. Herds in feedlots and large confined dairy operations have higher percentages of this pathogen than those out on pasture, although pastured cattle may also be infected with this deadly bacteria.*
- *Animals associated with human activities and contaminated areas (including but not limited to non-field rodents and some birds), can be sources of pathogens. Potential sources of contamination include use of untreated or improperly treated manure; nearby composting or manure storage areas, livestock, or poultry operations; nearby municipal wastewater or biosolids storage, treatment, or disposal areas, urban areas, and garbage dumps.*

## **Nearness to the Growing Field**

- *If animals that pose an increased risk are near or in the field, the risk of crop contamination increases.*
- *Livestock should not have access to fields until the crop has been harvested, and depending on the lay of the land, physical barriers may be required to prevent run off from grazing areas.*

## **Conservation Practices Used to Reduce Indirect Spread of Pathogens**

*Indirect spread of pathogens through water, soil, air and dust can be lessened by conservation practices:*

- *Hedgerows and windbreaks reduce the occurrence of airborne pathogens contaminating the crop.*
- *Grasses and wetlands filter pathogens in water.*

## **Deterrent examples**

- *Minimize the presence of animal attractants (such as cull piles) within a production field<sup>6</sup>.*
- *Maintain structures and equipment within or adjacent to fields to minimize harborage of pests and wildlife.*
- *Fencing*

## **Proximity to Harvest**

- Any part of the crop contaminated with excrement should *not* be harvested.
- In addition to not harvesting the contaminated crop(s), a radius of 5' around the specified crop(s) should not be harvested.
- The crop should be further surveyed to determine if other contamination is present is present.

### 6.1.2

Written records for routine monitoring for animal activity in Mesa Top Farm production fields are attached to the appendix.

Information about the type of routine monitoring performed is outlined below

**walk the fields and observe evidence of animal activity daily and act accordingly**

Routine monitoring is performed at the following frequency:

**daily**

### Best Practice Information

#### ANIMAL AND PEST CONTROL MONITORING

*Farm operations are inevitably subject to animal and pest infiltration. You must do your best to keep problems under control<sup>8</sup>:*

- *Scheduled monitoring of growing fields and adjacent land for evidence of animal activity (such as field, fence inspections, etc.) is required on an ongoing basis.*
- *It is recommended that in addition to noting any signs of animal activity while carrying out everyday farming activities, that a walk through or around the fields be performed daily.*
- *Fencing is not required, but if fencing is used, it is recommended that fence lines be inspected at least every two weeks<sup>8</sup>.*
- *Inspection of fences and fields should include the following<sup>8</sup>:*
  - *walk the fence line and observe any places where the fence may be compromised or in need of repair.*
  - *make sure there are no weaknesses or places where animals are clearly entering and exiting the fields.*
  - *check to see if any part of the fence needs to be re-baited for deer (if applicable and allowable in your state).*
  - *visually inspect the fields from the outside to see if there are any noticeable signs of animal presence. Look out for signs of animals passing through or feeding in the fields<sup>8</sup> and evidence of pest infestation such as presence of rodents, animal feces, nests or nesting materials<sup>2</sup>.*
  - *make notes and take action on these and any other needs that arise in keeping wild or domesticated animals out of the fields.*
- *Traps and other methods of control must be inspected on a regular basis, preferably daily.*
- *Shot is allowed in the field only if there is no risk that it will contaminate produce (e.g., should only be used prior to cupping in lettuce/cabbages etc to avoid trapping shot in the finished head.*



- *If you need to hire an exterminator<sup>8</sup>:*
- *they should monitor your operation on a monthly basis.*
- *all traps must be checked and documented daily by the farm manager/person responsible.*
- *a service report from the exterminating company should be provided or updated monthly.*
- *if a change in conditions develops, the monitoring company should be contacted immediately.*
- *depending on regulations in your area, the exterminator may require a license.*
- *If pesticides are used it is recommended that:*
- *a licensed pest control advisor be used to provide advice on pesticide recommendations.*
- *all pesticides be securely stored and labeled according to all federal, state and local regulations.*
- *pesticide applications be made by certified/fully trained applicators.*
- *only approved pesticides are used according to the label and in compliance with US federal, state and local regulations.*
- *applicators be in compliance with application restrictions and worker safety guidelines.*
- *application services are subject to state, county and private audits.*
- *measures be taken to avoid pesticide application drift from adjacent fields.*
- *pesticide application records be kept on file for two years.*
- *water used for pesticide applications be from a known/identified source and tested where necessary to ensure fields are not contaminated with pathogens of concern. Please consult section 4 of this tool (Agricultural Water) for additional information on testing requirements.*

## 6.2 Animal Control Buildings

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### 6.2.1

Written pest control procedures used at Mesa Top Farm are attached to the appendix.

Risk assessment records for animal activity in production buildings are also attached to the appendix.

Mesa Top Farm will perform a risk assessment at the following frequency:

**daily**

Preventive and/or corrective measures performed as a result of risk assessment(s) are attached to the appendix.

Routine monitoring activities for animals in production buildings are outlined below:

**walk perimeter, look around inside, looking for evidence of rodent or other pest activity**

These activities are performed at the following frequency:

**daily**

Please see the appendix for records documenting these routine monitoring activities.

A map(s) of all pest traps locations outside and inside production buildings is given in the appendix.

Documentation outlining training and/or license requirements for the pest control operator are attached to the appendix.

Mesa Top Farm uses farm personnel to perform its pest control program.

Documentation outlining training of farm personnel in the pest control program and application guidelines is attached to the appendix.

### **Best Practice Information**

#### **PEST CONTROL MANAGEMENT**

*Employees must be diligent in reporting any signs of pest infestation in processing, packaging, cooling and storage areas.*

**Things to consider:**

- *For buildings where food is handled, equipment structures and equipment/building surfaces (floors, walls, ceilings, doors, frames, hatches, etc.) should be constructed to allow easy cleaning and sanitation<sup>1</sup>.*
- *If cracks and holes in buildings become a route for pests, they will need to be fixed<sup>2</sup>.*
- *Adequate space shall be maintained between rows of stored materials to allow cleaning and inspection<sup>1</sup>. Materials should be stored away from walls and ceilings<sup>1</sup>.*
- *Chill and cold storage loading dock areas need to be appropriately sealed, drained and graded to prevent pest intrusion<sup>1</sup>.*
- *Nesting of birds on the interior and exterior of buildings should be prevented (e.g., netting overopenings to prevent entry). It is illegal to remove nests once eggs have been laid<sup>2</sup>.*
- *Domestic animals shall be prohibited from packing house, cooling and storage facilities unless procedures are in place for their safe presence<sup>1</sup>.*
- *Procedures are in place to exclude wild and feral animals to the extent practical<sup>1</sup>.*
- *Where present, remove all feces, nesting materials rodents or animals, chewed boxes or packaging. Wash contaminated equipment and building areas as necessary and dispose of any product or packaging materials that may be contaminated.*
- *Maintain structures and equipment (both within buildings and equipment stored outside) to minimize harborage of pests and wildlife<sup>6</sup>.*
- *Dispose of any product that has come in to contact with bait or other pest control products<sup>2</sup>.*
- *Washing any equipment that has come into contact with pest control products or pests<sup>2</sup>.*
- *Re-evaluate and revise your existing pest control program to better meet your needs. Seek expert advice if necessary.*
- *Equipment stored outside is stored away from the building perimeter. Equipment is not to accumulate near the building<sup>1</sup>.*
- *Boneyards, which are places where unused machinery is stored, should be located away from the building<sup>1</sup>.*

### **If traps are used, ensure that<sup>2</sup>:**

- only non-toxic traps and pest control devices should be used inside the packing house, chilling or storage areas<sup>1</sup>.
- traps and other methods of control must be inspected on a regular basis, preferably daily with inspection activities documented.
- they are flush against the wall.
- bait used inside buildings is in a trap from which rodents cannot escape (e.g., tin cat, iron cat, ketch-all).
- they are set, at a minimum, on the inside of each entrance (doorways) on both sides (i.e., two traps per door).
- each trap and area controlled is identified and actions taken (if applicable) recorded.
- all baits are secure within traps. Remove all bait that is not secured in a trap.
- devices (including rodent traps and electrical flying insect devices) should be located so they do not contaminate produce or food handling surfaces<sup>1</sup>.

### **If you need to hire an exterminator<sup>2</sup>:**

- they should monitor your operation on a monthly basis.
- all traps must be checked and documented daily by the farm manager/ person responsible.
- a service report from the exterminating company should be provided or updated monthly.
- the monitoring company should be contacted immediately if a change in conditions develops.
- depending on regulations in your area, the exterminator may require a license.

### **Pesticide Use (e.g., insecticides, rodenticides, baited traps)**

- Applications of pesticides must be performed in compliance with local, state, and federal regulations<sup>1</sup>.
- Only pesticides approved for use in the US should be used.
- Persons applying pesticides should be certified/trained and comply with application restrictions and worker safety guidelines.
- All pesticides should be securely stored and labeled according to all federal, state and local regulations.
- Consider that application services are subject to state, county and private audits.
- Pesticide application records should be on file for two years.

### **Waste Management<sup>1</sup>**

- Waste containers and compactors should be located away from produce handling areas, remain closed or have lids (except for waste collection/cull trailers in active use and emptied on a scheduled or as needed basis).
- Outside garbage receptacles/dumpsters should also be closed and be located away from entrances of buildings used for food packaging, storage, cooling etc.
- Your operation should have procedures to maintain the grounds surrounding the building as well as all waste containers to minimize sources of contamination, such as litter, vegetation, debris and standing water that may be pest attractants or harborage. **Note:** Vegetation that does not serve as an attractant or harborage is permitted.

## SECTION 7: Soil Amendments and Manure

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### 7.2 Soil Amendments That Do NOT Contain Raw or Partially Treated Manure

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#### 7.2.1

Mesa Top Farm uses the following soil amendments (which do not contain raw or partially treated manure):

**kelp powder, peat moss**

#### Best Practice Information

##### SOIL AMENDMENT MANAGEMENT

- *All soil amendments must be produced and applied in accordance with applicable federal, state, and/or local regulations<sup>1</sup>.*
- *It is important for you to assess the risk of soil amendments to your fields and have documentation verifying that material treatments or process have minimized pathogen risk.*
- *When water is used for distributing soil amendments to the field, it is important that the water be free of pathogens. If you are using potentially contaminated water for this purpose, contact with the edible portion of the crop must be avoided<sup>3</sup>. Please consult section 4 of this tool (Agricultural Water) for additional information.*

#### 7.2.2

Mesa Top Farm uses the following method of composting:

**build wind rows of spent bedding, straw, and animal manure. Keep a long probe soil thermometer in the pile. Leave to sit until the temp has peaked and returned to under 100 degrees. Turn again. Only use compost when it is 6 months old or more, and after turning temp does not rise above 90 degrees**

Temperature of compost is monitored at Mesa Top Farm as follows:

**long probe thermometer used to test pile in several locations. temps notes. tested dailt**

Time and temperature monitoring records are attached to the appendix.

Testing/analysis is not performed on compost/compost tea produced at Mesa Top Farm.

**we follow time/withrdawal guidance for raw manure even though we compost. This allows us to be more lenient and less preoccupied with compost records and data**

#### 7.2.3

Mesa Top Farm does not use animal based soil amendments which do not contain raw or partially treated manure.

#### Best Practice Information

##### SOIL AMENDMENTS WHICH DO NOT CONTAIN RAW OR PARTIALLY TREATED MANURE

- *If animal-based soil amendments or biosolids are used, records of composition, dates of treatment, methods utilized and application dates must be documented and maintained<sup>1</sup>.*
- *Maximize the time between application of compost to production areas and harvest.*
- *Some standards recommend that composted manure be used only as a pre-planting or pre-season soil amendment. One standard suggests that it is applied at least 45 days before the expected date of harvest and is incorporated into the soil immediately after application<sup>17</sup>.*
- *Compost and composted manure applications should be performed so as to prevent drifting of material onto edible portions of adjoining food crops<sup>17</sup>.*
- *Each compost application should be documented (with supplier information including lot number if supplier manufactured product used)<sup>3</sup>.*
- *When purchasing or selecting treated manure or other by-products from a supplier (e.g., company, self, neighbor), the supplier should be aware of the type/composition (e.g., cattle, horse or hog manure; vegetable culls; seafood waste) and the origin, whether it be from a municipal source that is at a higher risk of contamination or an organic source, which would be a lower risk for contamination. Other considerations are whether it is produced under conditions that are not a source of biological (e.g., pathogens), chemical (e.g., heavy metals) or physical (e.g., glass) contamination<sup>2</sup>.*

### **Best Practice Information**

#### **PROPER SOIL AMENDMENT HANDLING**

*It is important to handle compost in a controlled manner so that it does not contaminate other fields, water supplies, harvested produce, etc.*

- *All soil amendments/fertilizers should be securely stored according to all federal, state and local regulations with labels intact and readable (as applicable).*
- *Some standards recommend compost storage/operations be at least 400 feet, depending on topography, away from fields. If compost storage is closer than 400 feet, then a risk assessment of the area should be performed <sup>11</sup>.*
- *Manure and compost piles should be covered (e.g. with a plastic tarp), and stored in a clean and dry location that does not encourage run-off to other areas. Run-off/drift/leaching from piles can be controlled with the use of physical barriers such as flood-gates, fences, diversion berms, lagoons, etc..*
- *Treated compost should be stored away from untreated compost.*
- *Manure, compost/compost tea and other by-products should be stored separate from each other, product, market ready packaging materials, packing operations, fuels, oils, chemicals and cleaning agents <sup>2,3</sup>. They should also be stored in a manner that maintains the integrity of the material and its container.*
- *Manure and other by-products should be stored away from water sources<sup>2</sup>.*
- *If storing compost prior to application, the pile should be covered to reduce the chance of runoff, leaching, wind spread, or recontamination<sup>1</sup>.*

## **SECTION 8: Field Harvesting**

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### **8.1 Risk Assessment-Pre-harvest**

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#### **8.1.1**

Pre-harvest risk assessment record(s) for Mesa Top Farm are attached to the appendix of

this section.

### Best Practice Information

#### FIELD RISK ASSESSMENT

- *The scope and nature of your evaluation will vary depending on what is being harvested and how complex your operation is.*
- *Your risk assessment process could be as simple as an entry into your daily harvest activity notebook or a formal inspection log. However, you should include the following general information in your evaluation:*
  - *Field Location*
  - *Risks whether they be biological (e.g., pathogens), chemical or physical (e.g., broken glass).*
  - *Corrective and/or Preventive Actions*

## 8.2 Vehicles, Equipment, Tools and Utensils

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### 8.2.1

The list of equipment used at Mesa Top Farm is attached to the appendix of the food safety manual.

### 8.2.2

Mesa Top Farm's written policy outlining what to do in the event of leaks and spills (e.g. fuel, oil, hydraulic fluids) from vehicle(s)/production equipment in the field is attached to the appendix.

### 8.2.3

Mesa Top Farms written policy regarding foreign objects in harvesting operations is attached to the appendix. The policy includes what to do if there is glass/plastic breakage during harvesting and how to properly dispose of broken glass as applicable.

**we inspect at time of use and note problems and actions taken ONLY. we do not note "no trouble found. We use an "incident / repair report" when something happens rather than keeping a log.**

Inspection records are attached to the appendix of this section.

### Best Practice Information

#### DEBRIS AND OTHER FIELD CONTAMINATION MANAGEMENT

- *Take measures to inspect for and remove foreign objects such as glass, metal, rocks, or other dangerous/toxic items during harvest activities<sup>1</sup>.*
- *All vehicles/equipment should be inspected prior to entering fields to ensure there are no broken or cracked plastic or glass windows, fixtures, covers, or other parts that may contaminate produce<sup>1</sup>.*
- *Foreign objects such as glass, plastic, metal or other debris should be excluded from production equipment wherever possible. If not possible to exclude, light bulbs and glass on production equipment and in the growing area should be protected so they do not contaminate produce or fields in case of breakage<sup>1</sup> and/or be made of*

shatterproof material<sup>2</sup>.

- *If foreign objects (glass, plastic, metal or other debris) come in contact with the field or produce:*
  - *It should be immediately dealt with by whoever finds the contamination. If that person is not able to immediately deal with the contamination, that person must mark the area and immediately notify a supervisor who will take appropriate action.*
  - *The debris should be removed with a shovel or gloved hands (which protect them from injuries such as cuts if debris is sharp) and placed in a secure trash can.*
  - *Affected product should be evaluated for potential contamination and disposal if necessary (due to food safety risk)<sup>1</sup>.*
  - *Broken glass and sharp objects should be placed in a cardboard box that is then sealed, and placed in a secure trash can<sup>3</sup>.*

#### **8.2.4**

Procedures used at Mesa Top Farm to reduce/control potential contamination during harvest such as scheduled repairs, cleaning/sanitizing frequencies, storage and handling procedures for food contact surfaces are attached to the appendix.

Records for maintenance, cleaning and sanitation activities for field vehicles and equipment are also attached to the appendix.

### **Best Practice Information**

#### **FIELD EQUIPMENT INSPECTION PROCEDURES**

- *Your operation should develop, implement, and schedule repair, cleaning, sanitizing, storage and handling procedures of all food contact surfaces to reduce and control the potential for contamination<sup>1</sup>.*
- *Vehicles and equipment shall be properly calibrated, operated, maintained, and used as intended as necessary for food safety<sup>1</sup>.*
- *Your procedures should also cover equipment and vehicles that are in the field infrequently<sup>1</sup>.*
- *Product contact tools, utensils and equipment should be made of materials that can be cleaned and sanitized<sup>1</sup> e.g. are made of non-porous surfaces (e.g., metal, stainless steel, puckerboard, rubber)<sup>2</sup>.*
- *It is recommended that hand-held cutting and trimming tools be inspected and cleaned daily and this activity recorded weekly<sup>2</sup>.*
- *It is recommended that an inspection be conducted at least weekly for other equipment in direct contact with product (e.g., cutting blades, brushes, packing lines, conveyors, belts) or that may have an impact on food safety (e.g., chlorinator, sprayer) (when in use)<sup>2</sup>.*
- *Check for leaks, broken, loose, corroded or damaged parts, soil, mud, build-up, etc. and perform any cleaning, maintenance and calibration needed. Washing, grading, sorting, and packing lines used in the field (if applicable) should be cleaned and sanitized, at least daily when in use<sup>7</sup>.*
- *Tools and equipment should be easily accessible for cleaning and maintenance<sup>2</sup>.*
- *Harvest tools, utensils and knives should be stored in a way that minimizes contamination.*
- *Equipment traffic flow should be prevented from traveling through untreated manure area(s) into the harvesting field(s)<sup>1</sup>.*

## 8.3 Containers, Bins and Packaging Materials

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### 8.3.1

Mesa Top Farm has a written policy regarding containers, bins and packaging materials used for harvesting, including storage, inspection, acceptable harvesting containers and acceptable usage practices attached to the appendix of this section.

Information about the types of containers, bins and any packaging materials used for harvesting activities at Mesa Top Farm is outlined below:

**we harvest into wheelbarrows and buckets and sometimes crates. always using clean water or plastic liners. For packing (product for delivery) we use waxed boxes, often recycled, and use new food grade plastic bags and liners or containers so that product does not directly contact the boxes**

## 8.4 Water and Ice (which contacts food contact surfaces during harvesting)

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### 8.4.1

Mesa Top Farms procedure to ensure quality of the water/ice that contacts product or food contact surfaces during harvesting activities is attached to the appendix.

**we use potable water for washing produce**

A procedure is attached to the appendix addressing the condition and maintenance activities for the water-delivery system used during harvesting activities at Mesa Top Farm.

Maintenance activity records are also attached to the appendix.

Produce types which are known to be susceptible to microbial infiltration, are washed during harvest activities at Mesa Top Farm.

A written procedure addressing control of wash water temperature is attached to the appendix.

Water temperature measurement records are also attached to the appendix.

### Best Practice Information

#### WATER AND ICE QUALITY

- *If water or ice directly contacts the harvested crop or is used on food-contact surfaces, such as in the field, as the final wash step prior to consumer packaging, or as a cooling aid in a consumer package, then you should have a procedure that requires that this water or ice meets the microbial standards for drinking water<sup>1</sup>.*
- *Any sanitizing chemicals used to ensure water meets drinking water standards must comply with all requirements of EPA registration and federal, state, and local regulations<sup>7</sup>.*
- *Protective measures should be in place in areas where iced down product is stored over like or dissimilar items in order to prevent melting ice from contaminating product below<sup>7</sup>.*



- *Ice and water used at your operation must be sourced/manufactured, transported, and stored (as applicable) under sanitary conditions<sup>1</sup>. This needs to be considered for ice produced on-site or if it is purchased in from an external source<sup>7</sup>.*
- *If you use re-circulated water, then your procedures should outline the use of an approved antimicrobial to treat re-circulated water to prevent it from becoming a source of contamination, according to prevailing regulation or industry specific standards for your commodity(ies)<sup>1</sup>.*
- *Your water-delivery system should be maintained so it does not become a source of contamination of produce, water supplies or equipment with pathogens, or to create an unsanitary condition. There should be procedures place to address condition and maintenance of the water-delivery system, with records of maintenance kept<sup>1</sup>.*
- *It has been shown that pathogens can become internalized into produce tissue for some commodities when wash water is more than 10 degrees lower than produce temperature<sup>7</sup>. For produce demonstrated as being susceptible to microbial infiltration from wash water, wash water temperature differences during immersion should be considered. If applicable to your specific commodity, your water use procedures should address control of wash water temperature, with monitoring records documented<sup>1</sup>.*

## 8.5 Field Handling

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### 8.5.1

The procedure(s) used at Mesa Top Farm to minimize contamination risk to harvested produce (from damaged or decayed produce) is attached to the appendix.

The practices followed at Mesa Top Farm to prevent cross-contamination of produce with cloths, towels, or other cleaning materials during harvesting are outlined below:

**if we wipe produce that is could be consumed fresh we use "use once" (paper towels). For produce items that are cooked we use towels and wash them as needed so that they do not make the produce dirty.**

### Best Practice Information

#### PRODUCE HARVESTING PROCEDURES

- *Your operation should have a policy that only sound produce appropriate for its intended use is harvested, and that produce that has been damaged to an extent that it may be a microbial food safety hazard is not harvested or is culled<sup>1</sup>. All relevant employees should be trained in your procedures.*
- *Produce which shows significant decay, is damaged, has fallen to the ground (unless the product normally grows in contact with the ground) or where there is evidence of contact with animal feces may be contaminated<sup>7</sup>. It is recommended that this produce not be harvested<sup>1</sup>.*
- *You should have written policies developed regarding produce that comes in contact with the soil (e.g., drops) and your policy should be consistent with industry standards or prevailing regulations for the commodities harvested<sup>1</sup>.*
- *Any part of the crop contaminated with excrement should not be harvested. Besides not harvesting the specific crop plants found with feces, a radius of 5' around the contamination should not be harvested<sup>12</sup>. The crop should be further surveyed to determine if other contamination is present is present.*
- *As much dirt, mud and debris as practicable should be removed from the produce*

before it leaves the field<sup>1</sup>.

- If you wipe produce with cloths, towels, or other cleaning materials during harvesting you need to have a written procedure on how you prevent cross-contamination<sup>1</sup>.

## 8.6 Field Packaging

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### 8.6.1

Documentation demonstrating suitability and safety of packaging materials for the commodities being harvested at Mesa Top Farm (if applicable) is attached to the appendix.

Packaging materials for field use at Mesa Top Farm are stored to minimize contamination as follows:

**we use new/ food grade plastic bags or liners or paper whenever we field pack**

Mesa Top Farm's policy on direct contact of packaging materials with soil is outlined below.

**we do not need this policy because even though the box contacts the soil, the contents are not loose in the box.**

### Best Practice Information

#### PROPER PRODUCE PACKAGING USAGE AND STORAGE

- Product contact packaging must be appropriate to the commodity being harvested and suited for its intended purpose. Information from supplier, customer specification, industry standards and/or prevailing regulation can be used to determine if packaging creates an unsafe condition<sup>1</sup>.
- Packaging storage should be designed so packaging is maintained in a dry, clean state and is free from dirt or residues so it remains fit for the purpose. Particular care should be taken to prevent packaging from becoming a harborage for rodents and other pests<sup>1</sup>.
- Packaging should be stored away from areas where rodent/bird droppings might contaminate their surfaces and/or covered to prevent this occurring<sup>1</sup>.
- Packaging should also be stored separately from hazardous chemicals, toxic substances and other sources of contamination<sup>1</sup>.
- You should have a written policy regarding placement of packing materials directly on the soil, or whether a physical buffer (e.g., buffer bin, slip sheet, placed on pallet of clean cardboard) is required. Your policy should be consistent with industry standards<sup>1</sup>.

## 8.7 Post-Harvest Handling

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### 8.7.1

Mesa Top Farm's written policy regarding produce handling and storage postharvest is attached to the appendix.

### Best Practice Information

#### PRODUCE HANDLING AND POSTHARVEST STORAGE

- *Your handling practices should comply with current industry practices or regulatory requirements for the commodities you grow<sup>1</sup>.*
- *Your postharvest policies should consider the potential contamination risks of handling, walking, stepping, or lying on harvested produce, food contact surfaces or packaging materials<sup>1</sup>.*
- *Harvested produce should be stored separately from chemicals which may pose a food safety hazard. Chemicals, including cleaning and maintenance compounds, should be stored in a separate area<sup>1</sup>.*
- *Materials (pallets, produce bins, totes, etc.) that come in contact with produce during postharvest and subsequent transport activities (if applicable) should be clean and in good repair to ensure that contamination risks are minimized.*
- *Where temperature control is important for food safety, steps should be taken to minimize temperature increases and the time between harvest and destination<sup>7</sup>.*

## **8.8 Record Keeping**

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### **8.8.1**

Please see the appendix of Mesa Top Farm's food safety plan for documented training records for relevant employees on:

- Scheduled repair, cleaning, sanitizing, storage and handling procedures associated with food contact surfaces
- Cleaning of water tanks, e.g. used for dust control (if applicable)
- Vehicle and equipment leaks and spills policy (if applicable)
- Foreign object contamination in the field and glass breakage policy
- Storage, inspection and acceptable use of containers, bins and packaging materials policy
- Procedures for ensuring quality of water/ice that contacts product or food contact surfaces during harvesting activities (if applicable)
- Policy covering selective harvest of only sound produce to minimize contamination risks
- Policy of storage of packaging materials for field packing (if applicable)
- Policy covering produce handling and storage postharvest

## **SECTION 9: Transportation (field to packinghouse)**

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### **9.1 Produce Transportation from Field to Packinghouse**

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#### **9.1.1**

Mesa Top Farm has a policy to verify cleanliness and suitability of vehicle cargo bays/shipping units used to transport produce. This written policy is attached to the appendix of this section.

The record(s)/checklist for inspections addressing cleanliness and suitability are also attached to the appendix.

#### **9.1.2**

Mesa Top Farm's policy on loading and unloading produce and any associated equipment cleaning/maintenance requirements are attached to the appendix.

A written record of cleaning and maintenance of loading and unloading equipment is also attached to the appendix.

### **Best Practice Information**

- *Personnel responsible for the loading and unloading of produce should take steps to minimize the potential of physical damage to produce, which can introduce and/or promote the growth of pathogens.*
- *Loading/unloading equipment should be clean and well maintained and of suitable type to avoid contamination of produce<sup>1</sup>. You should consider all vehicle types that come into contact with produce (cars, trucks, pallet jacks, carts, trolleys and forklifts).*
- *Potential sources of contamination include soil, dirt, organic fertilizer, spills, trash, animals, raw animal products, pallet covers and other materials that come in contact with produce.*

## **9.2 Record Keeping**

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### **9.2.1**

Please see the appendix of this section for training records for relevant employees on loading/unloading procedures used at Mesa Top Farm and the vehicle policy (if applicable).

## **SECTION 10: Packinghouse Activities**

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### **10.1 Material Sourcing (Raw Materials)**

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#### **10.1.1**

An approved supplier list is attached to the appendix of the food safety manual.

The procedure used at Mesa Top Farm to approve suppliers, including the process for accepting materials from alternate sources, is attached to the appendix.

### **10.2 Non-Product Material Storage**

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#### **10.2.1**

Mesa Top Farm properly maintains non-product/packaging material storage areas in order to minimize contamination risks.

Chemicals are stored in a separate AND secure area.

### **Best Practice Information**

#### **PROPER STORAGE OF PACKAGING MATERIALS**

- *Materials and packaging materials must be protected from contaminants<sup>1</sup>.*
- *Materials stored in uncovered areas shall be protected from condensation, sewage, dust, dirt, chemicals, allergens or other contamination<sup>1</sup>.*
- *Materials should be stored off the floor/ground on pallets, slip-sheets or stands and*

- covered where applicable<sup>1</sup>.*
- *Storage areas must be maintained so as not to be a source of product contamination. Areas designated to store materials, whether indoors or out, shall be clean, well ventilated, and designed to protect materials and produce from contaminants<sup>1</sup>.*
  - *All chemicals should be properly labeled and stored in a secure separate area<sup>1</sup>.*
  - *Chemicals, including cleaning and maintenance compounds and lubricants, when not being used, are stored away from product handling areas and in a manner that inhibits unauthorized access<sup>1</sup>.*
  - *Food-grade and non food-grade lubricants are kept separate from each other<sup>1</sup>.*

## **10.3 Containers and Bins**

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### **10.3.1**

Mesa Top Farm's written policy regarding storage, inspection, handling and proper use of food contact containers and bins for packinghouse activities is attached to the appendix.

#### **Best Practice Information**

##### **PROPER PRODUCT CONTAINER MAINTENANCE**

*Containers should be sufficiently maintained so as not to become a source of contamination.*

- *Product-contact containers (e.g., harvest bins, totes, crates, sacks, buckets, finished product clam shells, bags or packaging films), should be stored, or handled (e.g., cleaned prior to post-storage use), so they do not become a source of contamination.*
- *Food-contact totes, bins, packing materials, other harvest containers, and pallets should be visually inspected, clean, intact and free of any foreign materials prior to use.*
- *The types and construction of product-contact containers and packing materials should be appropriate to the commodity being handled and suited to their intended purpose.*
- *Produce should only be stored in clean and sanitary containers.*
- *Food-contact totes, bins and other packing containers and equipment designated for packing activities shall only be used for packing activities unless you have a policy or procedure that clearly outlines approved non-product contact uses and how the containers are to be marked or labeled for that purpose.*
- *Food-contact totes, bins and other packing containers and equipment that are no longer cleanable should be retired or disposed of. Note: Those which are not disposed of need to be clearly marked or labeled for non-food use only to prevent accidental use in food contact activities<sup>u</sup>.*
- *If pallets are used, you should inspect them prior to use for conditions that may be a source of produce contamination. Pallets that can no longer be cleaned should be removed from use.*
- *Pallets and other wooden surfaces should be properly dried after being washed.*
- *If produce does not normally contact the ground during production, you should*

*have a policy regarding whether product-contact containers are allowed to directly contact the ground, or whether a physical buffer is required (e.g., buffer bin or slip sheet or use of containers constructed to prevent contact of the produce with the ground). Your policy should be consistent with industry standards.*

## **10.4 Packinghouse Design**

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### **10.4.1**

Mesa Top Farm's packinghouse is designed in a way to help minimize contamination risks.

The following features of packinghouse design at Mesa Top Farm help minimize contamination risks to produce.

**sloped cement floor, easy to wash down**

### **10.4.2**

The sewage disposal system at Mesa Top Farm is adequate for packinghouse processes and is maintained to prevent direct or indirect product contamination.

Written records for maintenance activities are attached to the appendix.

### **Best Practice Information**

#### **SEWAGE DISPOSAL SYSTEM ADEQUACY**

- *Your human waste and gray water sewage system should have sufficient capacity to handle the operation's peak flows and not cause direct or indirect product contamination.*
- *Cross-connections between the sewage disposal system and product contact water systems are prohibited.*

## **10.5 Packinghouse Protocols**

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### **10.5.1**

Mesa Top Farm's preventive maintenance and/or cleaning and sanitation covering **all food and non-food contact surfaces** in the packinghouse is attached to the appendix.

Procedures for cleaning and sanitation activities for food contact surfaces tools and equipment and equipment used for cooling in the packinghouse are attached to the appendix.

Written records for preventative maintenance are also attached to the appendix.

Mesa Top Farm's procedure to ensure that temporary repairs do not create a potential contamination source/food safety risk and that permanent repairs are implemented in a timely manner is attached to the appendix.

### 10.5.2

Equipment and tools used for cleaning the packinghouse at Mesa Top Farm are kept clean, in good working order and stored properly away from product handling areas.

Cleaning agents and/or sanitizers used on food contact surfaces in the packinghouse are approved for use on food contact surfaces according to the chemical manufacturer and all federal, state and local requirements.

Any information used to verify compliance (e.g. purchasing practices, use procedures, MSDS sheetsetc) are attached to the appendix.

### Best Practice Information

#### PACKINGHOUSE EQUIPMENT AND TOOL MAINTENANCE

- *Equipment, utensils and tools used for cleaning or sanitizing, including food contact and non-food contact surfaces, must be maintained so they do not become a source of produce contamination. They should be stored away from product handling areas<sup>1</sup>.*
- *All chemicals used for cleaning or sanitizing food contact equipment, tools, utensils, containers and other food contact surfaces must be approved for that use, according to the chemical manufacturer or supplier and all federal, state and local requirements. These chemicals should only be used in a manner consistent with the approved use<sup>1</sup>.*

### 10.5.3

All food-contact equipment, tools and utensils used in the packinghouse at Mesa Top Farm are designed and made of materials that are easily cleaned and maintained.

## 10.6 Water and Ice

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### 10.6.1

Mesa Top Farms procedure to ensure quality of the water/ice that contacts product or food contact surfaces during packinghouse activities is attached to the appendix.

Antimicrobial treatments for water (other than re-circulated water) are monitored sufficiently to ensure continuous effectiveness and that drinking water standards have been met. Records for water treatment monitoring are attached to the appendix.

The procedures addressing control of water temperature for commodities susceptible to microbial infiltration from immersion water is attached to the appendix. Records of water temperature measurements are also attached to the appendix.

### Best Practice Information

#### PACKINGHOUSE WATER AND ICE QUALITY

- *If water or ice directly contacts the harvested crop or is used on food-contact surfaces, the operation should have a procedure/SOP (standard operating procedure) which requires that water or ice meets the microbial standards for drinking water, as defined by prevailing regulation or the country in which the product will be traded, whichever*

*is more strict*<sup>1</sup>.

- *Contamination may occur through dirt and soil build up or cross contamination of "clean" fruit with those carrying pathogens, if water is not maintained in a sanitary condition through added sanitizers and/or frequent water changes*<sup>1</sup>.
- *Water may be treated (e.g., with chlorine) to achieve the microbial standards or to prevent cross-contamination*<sup>1</sup>.
- *Ice and water shall be sourced/manufactured, transported, and stored under sanitary conditions*<sup>1</sup>.

## 10.7 Wash Protocols

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### 10.7.1

Please find attached to the appendix the risk assessment performed for washing process(es) at Mesa Top Farm.

A procedure outlining that debris and damaged produce should be removed from wash areas/dump tanks to the extent possible is attached to the appendix.

### 10.7.2

Antimicrobial chemicals are used in wash water at Mesa Top Farm.

Documents showing regulatory approval for the wash water antimicrobials in use at Mesa Top Farm are attached to the appendix.

The procedure used at Mesa Top Farm to control, monitor and record use of wash water antimicrobials (including corrective actions if minimum limits are not met) is attached to the appendix.

Records for water treatment monitoring of wash water are attached to the appendix.

## 10.8 Monitoring Equipment

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### 10.8.1

Mesa Top Farm used the following types of instruments to monitor variables that impact food safety.

**test strips**

## 10.11 Packaging

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### 10.11.1

The register of packaging specifications (for packaging that could impact finished product safety and quality) and label approvals (if applicable) is attached to the appendix.

Methods and responsibilities for developing and approving specifications and labels for packaging at Mesa Top Farm are attached to the appendix.

## Best Practice Information



## **PACKAGING SPECIFICATIONS AND LABEL APPROVALS**

- *Specifications for all packaging materials that have an impact on finished product safety and quality should be available and comply with prevailing regulations<sup>1</sup>.*
- *The methods and responsibility for developing and approving detailed specifications and labels for all packaging should be documented<sup>1</sup>.*
- *A register of packaging specifications and label approvals should be maintained and kept current<sup>1</sup>.*

### **10.13 Record Keeping**

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#### **10.13.1**

Please see the appendix of Mesa Top Farm's food safety plan for documented training records for applicable employees on:

- Procedure for approving raw material suppliers, including accepting materials from alternate sources
- Policy regarding storage, inspection, handling and proper use of food contact containers and bins
- Glass and brittle plastic control policy, including when/why these materials need to be used
- Procedures for ensuring the quality of water/ice that contacts product or food contact surfaces (e.g. treating water with antimicrobial chemicals, water re-use policies, control of wash/immersion water temperature, water delivery system maintenance procedures, debris removal and water change frequencies etc (as applicable)
- Allergen Control Policy (if applicable)
- Policy for microbial testing requirements (if applicable)
- Procedures associated with your Preventive Maintenance and/or Master Cleaning Schedule

## **SECTION 11: Final Product Transport**

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### **11.1 Produce Transportation from Packinghouse to Customer**

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#### **11.1.1**

Mesa Top Farm has a policy to verify cleanliness and suitability of vehicle cargo bays/shipping units used to transport produce. This written policy is attached to the appendix of this section.

The record(s)/checklist for inspections addressing cleanliness and suitability are also attached to the appendix.

Mesa Top Farm has a responsible person signing off the completed checklist/inspection report.

#### **Best Practice Information**

##### **SUITABILITY OF VEHICLES USED TO TRANSPORT PRODUCE**

- *Personnel responsible for loading of produce should be trained to inspect the cargo areas of vehicles used to transport produce from the field.*
- *Vehicles used to transport produce should be clean, functional and free of*

*objectionable odors before loading, in compliance with current industry practices or regulatory requirements for that commodity<sup>1</sup>.*

- *Refrigeration units, if used, must be in working order<sup>1</sup>.*
- *Unless vehicles are dedicated to transport of produce, procedure requires review of transport history for immediate past 3 loads, or that trailer must first be sufficiently cleaned to prevent produce contamination<sup>1</sup>.*
- *Procedures should include prohibition of raw animal or animal product transport, or other materials that may be a source of contamination with pathogens<sup>1</sup>.*
- *Trash should not come in contact with produce. Trash removed from field packing operations should be handled and transported out of the field in a manner that does not pose a hazard of contamination of produce<sup>1</sup>.*
- *Cargo areas and containers that have been used to transport trash, animals, raw animal products or other items that may be a source of contamination with pathogens must first be cleaned and sanitized to ensure that contamination of produce does not occur<sup>7</sup>.*

### **11.1.2**

Mesa Top Farm's policy on loading and unloading produce and any associated equipment cleaning/maintenance requirements are attached to the appendix.

A written record of cleaning and maintenance of loading and unloading equipment is also attached to the appendix.

## **11.3 Record Keeping**

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### **11.3.1**

Please see the appendix of this section for training records for assigned employees on loading/unloading procedures used at Mesa Top Farm and vehicle and refrigerated transport policies (as applicable).