

AMERICERT INTERNATIONAL
US FARMGAP: Food Safety and Good Agricultural Practices Certification
-Certification Standards-
v.2013

Part A: Standards Applicable to Farm Operations

1. WATER

Water quality is a major risk factor for the safety of crops and produce produced on farm. Following the AMERICERT US FARMGAP standards will ensure that an operation has addressed the most common risk factors related to water quality.

1.1. Microbial Testing of Farm Water

Regular microbial testing of all water used on farm must be conducted. Water sourced from wells must be tested annually at a minimum for generic E.coli. Water sourced from surface water must be tested quarterly at a minimum for generic E.Coli. Such tests results shall be recorded and maintained for no less than 5 years.

1.2. Acceptable Water Quality for Farm Use.

Operations must comply with the following minimum water quality standards:

- a.) Water which has direct contact with the edible portion of the crop, including through irrigation or by mixing with farm inputs before application to crops must be documented through water testing to be free of detectable levels of generic E.Coli.
- b.) Water which has no direct contract with the edible portion of the crop must be documented, through water testing to have no more than 126 MPN or CFU/ 100 ml of generic E.Coli.
- c.) Water used for other purposes, such as hand washing, drinking water for workers, and water used to clean equipment, containers, and other items having direct contact with workers or crops must be documented through water testing to be free of detectable levels of generic E.Coli.
- d) Water used for washing of harvested crops or other post harvest activities where water has contact with produce, crops, or containers used in harvesting or handling must be documented through water testing to be free of detectable levels of generic E.Coli.

1.3. Unique Risk Factors.

Where the operation is exposed to unique risk factors to water quality due to local or regional conditions such as widespread animal operations and other risks to local water sources, the farm must identify such risks and develop and implement protective measures which may include grass/sod waterways, diversion berms, runoff control structures, vegetative buffers, and further restrictions on water use than those mandated by the standard.

2. MUNICIPAL BIOSOLIDS

If the farm uses municipal biosolids on farm, the farm shall develop and implement a Municipal Biosolids Compliance Plan, which explains how the operation complies with the requirements as described in Title 40 of the Code of Federal Regulations, Part 503.

3. GOOD AGRICULTURAL PRACTICES FOR MANURE MANAGEMENT

Farms must follow Good Agricultural Practices in the handling and use of manure to reduce the risk of introducing microbial hazards to crops and produce by appropriate practices and methods, including but not limited to appropriate handling practices and the use of active and passive methods of treatment to reduce pathogen levels.

3.1. Passive Treatments

Farms using passive treatments must ensure that manure is well aged and decomposed prior to use on fields. The holding times shall be consistent with local conditions, including local temperatures and the source and condition of the manure.

3.2. Active Treatments

Farms using active treatments must ensure that manure is treated with pasteurization, heat drying, anaerobic digestion, alkali stabilization, aerobic digestion, or composting. Composting procedures must be approved by AMERICERT.

3.3. Handling and Application of Manure Products

The farm must develop and implement practices intended to reduce the potential for contamination through the use of manure products on the farm. Such practices include the following:

- a) Manure storage and treatment sites must be situated at the furthest practical distance from the fields.
- b) Where contamination from runoff, leaching, or wind spread is a concern, the farm must implement barriers or physical containment to secure manure storage or treatment areas.
- c) The farm must have in place practices to address the potential for contamination from leachate from manure areas resulting from rainfall. Such practices may include covering manure piles or collecting leachate. If leachate is collected it must be disposed of, used, and stored in such a way as to not increase the risk of microbial contamination of crops or produce.
- d) The farm must have in place practices to prevent recontamination of treated manure by birds, rodents and through equipment use. Methods to prevent recontamination of treated manure by birds and rodents may include covered storage and the reduction of harborage such as tall grass and debris. The methods of preventing recontamination of treated manure through equipment use may include cleaning procedures for equipment, and clear guidelines and practices for the flow of traffic through the farm.

3.4. Untreated Manure

If untreated manure is used it shall be applied and incorporated into the soil prior to planting of crops or produce. For perennial crops, untreated manure must be applied at the beginning of the growing season. The farm shall take appropriate steps to ensure that surrounding land use which includes manure applications does not pose a risk to the fields on the farm where crops and produce are grown.

3.5. Treated Manure

The farm must take steps to ensure that manure in the process of being treated does not contaminate crops and produce. The farm must take steps to ensure that on farm treatments of manure are conducted consistently throughout the entire quantity of manure, by ensuring adequate and thorough mixing and even distribution of the treatment parameters (temperature, pH, etc.) throughout the quantity of manure. For treated manure products which are purchased already treated, the farm must maintain documentation from the manufacturer describing the treatment process in sufficient detail to ascertain the effectiveness of the treatment.

3.6. Limitations on Applications of Manure

The farm must have practices and policies in place to ensure that the following limitations on the use of manure are enforced:

- a) Actively treated manure products, as defined in section 3.2, must not be applied to crops less than 30 days prior to harvest.
- b) Passively treated manure, as defined in section 3.1, must not be applied less than 120 days prior to harvest for crops whose edible portions come into contact with the soil.
- c) Passively treated manure, as defined in section 3.1, must not be applied less than 90 days prior to harvest for crops whose edible portions do not come into contact with the soil.
- d) Passively treated manure products, as defined in section 3.1, must not be applied in a foliar fashion less than 120 days prior to harvest.
- e) If untreated manure is used it shall be applied and incorporated into the soil prior to planting of crops. For perennial crops untreated manure shall be applied and incorporated at the beginning of the growing season.

4. ANIMAL FECES

The farm must take appropriate actions in order to reduce the potential for contamination from animal feces; such practices must include at a minimum the following:

- a) Domestic animals must be excluded from growing fields during the growing season.
- b) The farm must implement appropriate buffer zones and physical barriers to reduce the potential for contamination from animal feces on surrounding lands.

c) The farm must monitor wildlife activity and where high concentrations of activity appear to increase risk of microbial contamination, take appropriate steps to address the risk in compliance with local, state, and federal laws and regulations.

5. TOILET FACILITIES AND HANDWASHING STATIONS

5.1. Accessibility and Number

A minimum of one toilet facility and one hand washing station shall be made accessible for every 20 workers. Workers shall have access to the toilet facility and hand washing station at all times and not just during breaks.

5.2. Location

The toilet and hand washing unit shall be located adjacent to each other. The facility shall be located within a one-quarter-mile walk of any hand-laborer's place of work in the field. Where it is not feasible to locate facilities as required above due to terrain, the facilities shall be located at the point of closest vehicular access. Toilet facilities in the field shall not be located near a water source used for irrigation and not located in an area where run off from heavy rains create a potential for contamination of fields or workers. Facilities shall be located and constructed so as to reduce the potential for contamination of soil, water sources, produce, animals, and workers.

5.3. Supply

All toilet facilities and hand washing stations shall be adequately supplied at all times with sufficient toilet paper, water basin, potable water for hand washing, liquid soap, sanitary hand drying equipment or material and a waste container as appropriate.

5.4. Features

Toilet facilities shall have a screened ventilation opening and self-closing doors that can be closed and latched from the inside and shall be constructed to ensure privacy.

5.5. Cleanliness

Toilets and hand washing stations must be cleaned on a regular basis. Containers used to transport or store water for hand washing must be regularly emptied, cleaned thoroughly, sanitized, and refilled with potable water. Sewage must be disposed of in a manner that is consistent with local laws and regulations and which does not contribute to risks to human health, food safety, or the environment.

5.6. Sewage Disposal

Systems and practices must be in place to ensure safe management and disposal of waste from permanently installed or portable toilets to prevent drainage into fields or create risks to soil, water, crops, or produce. The farm must have a plan in place to protect food safety in case of leakage or spillage of effluent into a field.

6. PERSONAL HEALTH AND HYGIENE

6.1. Required Practices

The farm must implement practices to reduce the risk of contamination of crops through personal health and hygiene practices. At a minimum such practices must include:

- a) Requiring that when a worker shows symptoms of infectious disease or illness that worker is excluded from work assignments that involve direct or indirect contact with produce or crops including working on packing, sorting, or equipment used for the same;
- b) Requiring that workers report signs and symptoms of active disease or illness to the supervisor at the earliest possible time;
- c) Requiring that open lesions, including wounds with pus or which are draining, shall be covered. If the lesion cannot be effectively covered, the worker shall be excluded from any work having direct or indirect contact with produce or crops, including working on packing, sorting, or equipment used for the same;
- d) Requiring that workers use only the approved toilet and hand washing facilities;
- e) Requiring hand washing prior to reporting to work, after breaks, and when returning from the rest room;
- f) Requiring that workers remove all unsecured jewelry and other objects that might fall into food, equipment, or containers, and removing hand jewelry that cannot be adequately sanitized during periods in which food is manipulated by hand. If such hand jewelry cannot be removed, it may be covered by material which can be maintained in an intact, clean, and sanitary condition and which effectively protects against the contamination by these objects of the food, food-contact surfaces, or food-packaging materials;
- g) Requiring that gloves, if they are used in crop handling, are maintained in an intact, clean, and sanitary condition. The gloves should be of an impermeable material;
- h) Requiring the storage of clothing or other personal belongings in areas other than where crops are exposed or where equipment or utensils are washed;
- i) Confining the following to areas other than where crops may be exposed or where equipment or utensils are washed: eating food, chewing gum, drinking beverages, or using tobacco;
- j) Ensuring that protective clothing and equipment is stored and cleaned appropriately on a regular basis, and;
- k) Taking any other necessary precautions to protect against contamination of food, food-contact surfaces, or food-packaging materials with microorganisms or foreign substances including, but not limited to, perspiration, hair, cosmetics, tobacco, chemicals, and medicines applied to the skin.

l) Requiring that should product or product handling surfaces come into contact with blood or other bodily fluids, that workers shall cease work immediately and shall not resume work until the contaminated product handling surfaces are cleaned and sanitized thoroughly and the contaminated products are disposed of through the operation's standard waste disposal process. Every effort must be made to ensure that contaminated products do not enter the food chain.

6.2. Training and Instruction

The farm must implement appropriate training and instruction to ensure that all workers, supervisors, full time and part time personnel have a good working knowledge of basic sanitation and hygiene principles. Such training and instruction must include:

- a) The importance of good hygiene and how poor personal cleanliness and unsanitary practices put workers and food safety at risk;
- b) The importance of hand washing prior to reporting to work, after breaks, and when returning from the rest room;
- c) Proper hand washing techniques, including the use of water, soap, scrubbing, and drying;
- d) The importance of using restroom facilities and using them properly to reduce food safety risks.
- e) Signs and symptoms of common infections disease and illness.

6.3. Visitors

Farms must ensure that visitors are aware of and comply with all sanitation and hygiene practices. A description of the farms personal health and hygiene practices must be prominently displayed where visitors and workers can read prior to entering production fields.

7. RECORDKEEPING

Farms must implement a recordkeeping system which records farm activities, GAP compliance activities, which fully discloses all transactions and is easily understood and auditable for compliance with the standard. Such records must be maintained for no less than 5 years and must be made available to AMERICERT or inspector upon request during normal business hours.

8. TRACEABILITY AND RECALL

The farm must design and implement an effective traceback system which allows for tracing the produce or crop from the field to the last portion of the distribution chain under the control of the farm. The crops or produce delivered to the end buyer must be accompanied by documentation and/or labeling which at a minimum: identifies the farm, the field harvested, the date of harvest, and who delivered to. The farm must consult with the parties in the known distribution chain to determine the

best methods for creating trace back as deep into the distribution chain as is practical. Packing operations must ensure that the packed product is labeled or accompanied by documentation or labels which at a minimum identify the farm, the date of harvest, the packer, the packing date, and the next buyer.

The operation must have a written recall policy and procedure which states the conditions triggering a recall and the steps to be undertaken to activate the recall. A mock recall must be conducted annually to test the steps of the recall and to ensure that the procedure is sufficient.

Part B: Standards Applicable to Harvesting Operations

9. SCOPE AND APPLICABILITY OF PART B STANDARDS

Part B: Standards Applicable to Harvesting Operations applies to the entity responsible for harvest. In many cases this will be the farm, although it may be the packing facility, the buyer, or a contracted harvesting entity. Whoever is responsible for harvesting activities is also responsible for complying with the following provisions of Part A: Standards Applicable to Farm Operations:

- a) Section 5: Toilet Facilities and Hand Washing Stations;
- b) Section 6: Personal Health and Hygiene;
- c) Section 7: Recordkeeping, and;
- d) Section 8: Traceability.

9.1. Certification for Harvesting Entities.

Harvesting entities which are not the farm on which crops are produced nor the packing facility for such crops may apply for and obtain certification as an AMERICERT U.S. FARMGAP Harvester by applying for certification, demonstrating compliance with all applicable provisions of the standard and being successfully inspected for compliance. Farms and packing facilities will who engage in harvesting activities will have their harvesting activities assessed under Part B as a part of their grower or packing certification and if compliant with Part B standards will receive the addition Harvester designation.

9.2. General Harvest Considerations

9.2.1. Harvest Storage

All harvest storage facilities must be cleaned, disinfected, and inspected for the presence of pests including rodents, birds, and insects prior to harvest.

9.2.2. Damaged Containers

Prior to harvest all harvest containers and packaging must be inspected, and containers and packaging discarded when damaged or no longer able to be cleaned sufficiently.

9.2.3. Clean Containers

All containers used to transport ready-to-eat produce should be cleaned and sanitized regularly.

9.2.4. Field Activities

When produce or crops are washed, cooled, or packed in the field the harvesting entity must have in place practices, policies, and procedures to ensure that produce or crops are not contaminated in the process through contact with manure or bio-solids, non-potable water, workers with poor hygiene, and unclean packaging and containers.

9.2.5. Soil and Mud

The harvesting entity must ensure that to the extent practical that as much dirt and mud as possible is removed from crops or produce in the field prior to transport. Where mud or dirt is not removable in the field, appropriate steps for removal must take place prior to packing, sorting, or grading.

9.2.6. Water Used in Harvesting Activities

All water used in harvesting activities must comply with Part A: Section 1.2. Acceptable Water Quality for Farm Use.

9.3. Equipment Maintenance

9.3.1. Harvest and Packing Equipment Cleaning

Any equipment used to haul garbage, manure, or other debris must not be used to haul fresh produce or crops or have contact with containers, packaging, or pallets used for fresh produce or crops unless they are first cleaned thoroughly and sanitized.

9.3.2. Cleaning of Harvest Containers

Harvest containers used repeatedly during a harvest should be cleaned after each load and prior to re-use. Containers which are stored outside must be cleaned and sanitized prior to use.

9.3.3. Responsible Personnel

The harvesting entity must designate a person responsible for ensuring that containers and equipment are used in accordance with these policies and that cleaning takes place as required.

9.4 General Transport Considerations

9.4.1. Inspection of Transport Units

Each transport unit must be inspected prior to loading to ensure that the unit is clean, free of odors, dirt and debris prior to loading. The operator must be aware of the prior uses of the transport unit and must not use the unit if it has recently been used to transport animals or animal products unless it has been thoroughly cleaned.

9.4.2. Temperature

Operators must work with transporters to ensure adequate control of transport temperatures from the loading dock to the receiving dock. Transporters must be made aware of produce or crops being transported. Operators must ensure that produce and crops being hauled for delivery do not consist of mixed loads with incompatible refrigeration requirements.

9.4.3. Loading

All produce and crops must be carefully loaded in trucks and cartons in a manner designed to minimize physical damage and reduce the potential for contamination during transport. Produce must be loaded so as to allow proper refrigerated air circulation.

Part C: Standards Applicable to Packing Facilities

10. SCOPE AND APPLICABILITY OF PART C STANDARDS

Part C: Standards Applicable to Harvesting Operations applies to the entity responsible for final wholesale or retail packing. In many cases this will be a different entity than the farm, although it may be the farm itself in some cases. Whoever is responsible for packing activities is also responsible for complying with the following provisions of Part A: Standards Applicable to Farm Operations:

- a) Section 5: Toilet Facilities and Hand Washing Stations;
- b) Section 6: Personal Health and Hygiene;
- c) Section 7: Recordkeeping, and;
- d) Section 8: Traceability.

Additionally, the packing entity is responsible for complying with the following provisions of Part B: Standards Applicable to Harvesting Operations:

- e) Section 9.2: General Harvest Considerations;
- f) Section 9.3: Equipment Maintenance, and;
- g) Section 9.4: General Transport Considerations.

10.1. Certification of Packing Operations

Packing entities which are not the farm on which crops are produced may apply for and obtain certification as a AMERICERT US FARMGAP Packing Facility by applying for certification, demonstrating compliance with all applicable provisions of the standard and being successfully inspected for compliance. Farms and harvesters who engage in harvesting activities will have their packing activities assessed under Part C as a part of their grower or harvesting certification and if compliant with Part C standards will receive the Packer designation.

11. PROCESSING WATER

In addition to the requirements for water described in Part A: Section 1.2. Acceptable Water Quality for Farm Use, packers must comply with the following requirements for water:

11.1. Microbial Testing and Water Quality

Water used for drinking, hand washing, having direct contact with crops or food contact surfaces must be tested on for generic E.Coli on an annual basis if sourced from a well or local municipal water source and quarterly if sourced from any other source. The facility must document through water testing that the water is free of detectable levels of generic E.Coli.

11.2. Water Flow

Where water is used in a series of processes, the water flow must be counter to the product flow, such that water is used first in the final rinse and then recycled through earlier uses such as a dump tank.

11.3. Supply, Temperature, and Pressure

Packing facilities must ensure that the water supply shall be sufficient for the operations intended and shall be derived from an adequate source. Running water at a suitable temperature, and under pressure as needed, shall be provided in all areas where required for the processing of food, the cleaning of equipment, utensils, and food-packaging materials, and for employee sanitary facilities.

11.4. Required Practices and Policies

Packing facilities which engage in post-harvest washing or processing of crops must implement practices that ensure and maintain water quality, including, but not limited to:

- a) Standard Operating Procedures addressing water change schedules;
- b) Standard Operation Procedures addressing sanitation and cleaning of food contact surfaces and water contact surfaces;
- c) Installation of backflow devices and air gaps as necessary to prevent contamination of clean water with potentially contaminated water, and;
- d) Standard Operating Procedures addressing the routine inspection and maintenance of equipment designed to assist in the maintenance of water quality such as chlorine injectors, water filtration systems, and backflow devices to ensure efficient operation.

11.5. Wash Water

The use of wash water on fresh produce and crops shall be appropriate to the product and the goal of reducing microbial contamination. The wash water usage shall take into account the nature of the produce, the potential for contamination, the efficacy of water treatments, the wash temperature of the produce, and alternative methods of cleaning for products which are water sensitive.

12. ANTIMICROBIAL CHEMICALS

The following requirements apply to the use of antimicrobial chemicals used by packing facilities:

- a) All antimicrobial chemicals used in wash water and in contact with food must be used in accordance with any appropriate EPA and FDA regulations;
- b) The use of antimicrobial chemicals must be consistent with manufacturer's directions for mixing to obtain effective concentrations and to minimize hazards;
- c) The use of antimicrobial chemicals must not exceed the recommended levels in wash water;
- d) Antimicrobial chemical levels must be routinely monitored and recorded to ensure that they are maintained at an appropriate level. The facility must develop and implement Standard

Operating Procedures for monitoring all relevant parameters to ensure effective use of antimicrobial chemicals, including, as necessary, pH, temperature, and oxidation reduction potential, and;

e) Any recommendations for post surface treatment water rinses following the use of antimicrobial chemicals must be complied with.

13. COOLING OPERATIONS

Cooling of produce should focus on methods involving air such as vacuum coolers and fans. Where water or ice are used to cool products such practices must be considered a potential source of contamination and the operation must have in place Standard Operating Procedures intended to reduce the risk of contamination from cooling operations, including maintaining appropriate temperatures, regular maintenance and cleaning of cooling equipment and areas, using antimicrobial chemicals in water and ice where appropriate, keeping water and ice clean and sanitary, ensuring that ice is manufactured, stored, and transported in sanitary condition, ensuring that containers, areas, and equipment used in cooling operations is maintained in clean and sanitary condition.

14. RAW MATERIAL INTAKE

Raw materials and other ingredients shall be inspected and segregated or otherwise handled as necessary to ascertain that they are clean and suitable for processing into food and shall be stored under conditions that will protect against contamination and minimize deterioration. Raw materials shall be washed or cleaned as necessary to remove soil or other contamination.

15. GENERAL PACKING FACILITY CONSIDERATIONS

15.1. Soil and Mud

Where mud or dirt is present on produce or crops coming from the field, appropriate steps for removal must take place prior to packing, sorting, or grading. Open packing operations must also be aware of and address any potential for contamination arising from airborne contaminants from any nearby livestock or poultry production, and manure storage or treatment facilities.

15.2. Containers

Containers used in packing operations must be inspected on a regular basis for damage. Damaged containers must be repaired or discarded.

15.3. Cleaning of Pallets, Containers, and Bins

Containers, pallets, and bins used to handle produce and crops must be cleaned and sanitized regularly.

15.4. Protection of Packing Materials and Containers

Packing materials and containers, including pallets and bins, must be stored in a way that protects them from contamination by pests, dirt and water, including water condensing from overhead structures and equipment. If packing containers are stored outside, they must be cleaned and sanitized prior to use.

16 GENERAL CONSIDERATIONS FOR FACILITY MAINTENANCE

16.1. Cleaning of Food Contact Surfaces, Equipment, and Machinery

All sorting, packing, and grading equipment, and all surfaces that come into contact with produce or crops must be cleaned daily. Equipment such as knives, saws, blades, boots, gloves, smocks, and aprons must be cleaned, inspected for defects that make them uncleanable, and replaced as needed.

16.2. Daily Cleaning and Sanitation

All washing, sorting, packing, and grading lines should be cleaned and sanitized as appropriate at the end of each day.

16.3. Cooling System Maintenance

Any cooling equipment must be maintained regularly and inspected daily. Equipment must be cleaned and all debris removed as necessary.

16.4. Storage Areas

All storage areas including in processing storage, final storage, and product storage must be inspected and cleaned on a regular basis to remove debris, soil, dirt and other potential sources of contaminants

17. PEST CONTROL

17.1. Pest Control System

Each packing facility must establish a pest control program to reduce the risk of contamination by rodents or other animals. The program must include regular and frequent monitoring of affected and treated areas to assess the effectiveness of the program.

17.2. Grounds Maintenance

- a) Grounds in the immediate vicinity of all packing areas must be kept clear of waste, litter, and improperly stored garbage. All grass and vegetation in the immediate vicinity must be kept and cut to discourage the breeding, harboring, and feeding of pests, such as rodents and reptiles.
- b) Any unnecessary articles, including old and inoperative equipment that is no longer used, must be removed to eliminate areas that harbor rodents and insects.
- c) Grounds must be cleaned daily to remove product or product remnants that attract pests in and around the packing facility and any other packing facility where product is handled or stored.
- d) Packing areas and the immediate vicinity must maintain adequate surface drainage to reduce breeding places for pests.

17.3. Facility Monitoring and Maintenance

- a) Facilities must be regularly inspected to check for evidence of pest populations or animal contamination and to minimize the availability of food and water to pests.

- b) Dead or trapped birds, insects, rodents, and other pests must be promptly removed to ensure clean and sanitary facilities and to avoid attracting additional pests.
- c) As much as practicable potential nesting or hiding places for pests must be eliminated.
- d) Surfaces soiled by birds or other wildlife must be cleaned immediately upon detection.
- e) Facilities must exclude pests from the facility by blocking holes in walls, floors, vents and doors, and through the use of screens, air curtains, and traps, as appropriate.
- f) Facilities must maintain a pest control log that includes dates of inspection, inspection report, and steps taken to eliminate any problems. Facilities must establish frequent monitoring of affected and treated areas to determine the effectiveness of the treatment applied.

18. PERSONAL HEALTH AND HYGIENE

Packing facilities must comply with all of Part A: Section 6 Personal Health and Hygiene provisions. Additionally, packing facilities must also:

- a) Ensure that workers and personnel wear clothing appropriate to protect food from contamination, including wearing, where appropriate, in an effective manner, hair nets, headbands, caps, beard covers, or other effective hair restraints, and Wearing outer garments suitable to the operation in a manner that protects against the contamination of food, food-contact surfaces, or food-packaging materials, and;
- b.) Ensure that Responsibility for assuring compliance with all personal health and hygiene requirements shall be clearly assigned to competent supervisory personnel.

19. FACILITY CONSTRUCTION AND MAINTENANCE

19.1. Construction

Facilities must be constructed in such a manner that floors, walls, and ceilings may be adequately cleaned and kept clean and kept in good repair; that drip or condensate from fixtures, ducts and pipes does not contaminate food, food-contact surfaces, or food-packaging materials; and that aisles or working spaces are provided between equipment and walls and are adequately unobstructed and of adequate width to permit employees to perform their duties and to protect against contaminating food or food-contact surfaces with clothing or personal contact.

19.2. Lighting

The facility must provide adequate lighting in hand-washing areas, dressing and locker rooms, and toilet rooms and in all areas where food is examined, processed, or stored and where equipment or utensils are cleaned; and provide safety-type light bulbs, fixtures, skylights, or other glass suspended over exposed food in any step of preparation or otherwise protect against food contamination in case of glass breakage.

19.3. Ventilation

Provide adequate ventilation or control equipment to minimize odors and vapors (including steam and noxious fumes) in areas where they may contaminate food; and locate and operate fans and other air-blowing equipment in a manner that minimizes the potential for contaminating food, food-packaging materials, and food-contact surfaces.

20. SANITATION AND CHEMICALS

20.1. Substances Used in Cleaning and Sanitizing

Cleaning compounds and sanitizing agents used in cleaning and sanitizing procedures shall be free from undesirable microorganisms and shall be safe and adequate under the conditions of use. Compliance with this requirement may be verified by any effective means including purchase of these substances under a supplier's guarantee or certification, or examination of these substances for contamination.

Only the following toxic materials may be used or stored in a plant where food is processed or exposed:

- a) Those required to maintain clean and sanitary conditions;
- b) Those necessary for use in laboratory testing procedures;
- c) Those necessary for plant and equipment maintenance and operation, and;
- d) Those necessary for use in the plant's operations.

20.2. Storage of Toxic Materials

Toxic cleaning compounds, sanitizing agents, and pesticide chemicals shall be identified, held, and stored in a manner that protects against contamination of food, food-contact surfaces, or food-packaging materials. All relevant regulations promulgated by other Federal, State, and local government agencies for the application, use, or holding of these products should be followed.

20.3. Sanitation of Food Contact Surfaces

All food-contact surfaces, including utensils and food-contact surfaces of equipment, shall be cleaned as frequently as necessary to protect against contamination of food. Additionally:

- a) Food-contact surfaces used for manufacturing or holding low-moisture food shall be in a dry, sanitary condition at the time of use. When the surfaces are wet-cleaned, they shall, when necessary, be sanitized and thoroughly dried before subsequent use.
- b) In wet processing, when cleaning is necessary to protect against the introduction of microorganisms into food, all food-contact surfaces shall be cleaned and sanitized before use and after any interruption during which the food-contact surfaces may have become contaminated. Where equipment and utensils are used in a continuous production operation, the utensils and food-contact surfaces of the equipment shall be cleaned and sanitized as necessary.
- c) Non-food-contact surfaces of equipment used in the operation of food plants should be cleaned as frequently as necessary to protect against contamination of food.
- d.) Single-service articles (such as utensils intended for one-time use, paper cups, and paper towels) should be stored in appropriate containers and shall be handled, dispensed, used, and disposed of in a manner that protects against contamination of food or food-contact surfaces.

20.4. Sanitizing Agents

Sanitizing agents shall be adequate and safe under conditions of use. Any facility, procedure, or machine is acceptable for cleaning and sanitizing equipment and utensils if it is established that the facility, procedure, or machine will routinely render equipment and utensils clean and provide adequate cleaning and sanitizing treatment.

20.5 Storage and Handling of Cleaned Portable Equipment and Utensils

Cleaned and sanitized portable equipment with food-contact surfaces and utensils should be stored in a location and manner that protects food-contact surfaces from contamination.