

## **Good Manufacturing Practices Applied to the On-Farm Kitchen**

**(For use as guidance only—not regulation, not approved by any regulatory authority)**

### **1. Personnel (FDA cGMPs, 110.10 Personnel.)**

People often introduce microorganisms when not paying attention to personal hygiene. Be sure to take all reasonable measures and precautions to ensure the following:

*(a) Disease control.*

Anyone who is shown to have, or appears to have, an illness, open lesion, including boils, sores, or infected wounds, or any other abnormal source of microbial contamination that could result in a reasonable possibility of food, food contact surfaces, or food-packaging materials becoming contaminated should not be allowed to work in the food processing kitchen until the condition is corrected.

*(b) Cleanliness.*

Everyone working in direct contact with food, food contact surfaces, and food packaging materials shall follow good personal hygienic practices to the extent necessary to protect against contamination of food. The person in charge is responsible for assuring that all people working in the processing kitchen are in compliance with good personal hygiene practices.

The methods for maintaining cleanliness include, but are not limited to:

- (1) Wearing clean clothes to protect against the contamination of food, food-contact surfaces, or food-packaging materials. Clean aprons should be worn. Shoes that are worn throughout the farm should not be worn in the kitchen.
- (2) Coming to work having bathed, with clean hair and fingernails.
- (3) Washing hands thoroughly (and sanitizing if necessary to protect against contamination with undesirable microorganisms) before starting to work in the kitchen, after returning to the kitchen at any time; after handling garbage, after handling raw fruits/vegetables, and at any other time when the hands may have become soiled or contaminated.
- (4) Removing 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 hand jewelry cannot be removed, it may be covered by gloves. Keep pockets, particularly on shirts or coats, empty.
- (5) Maintaining gloves, if they are used in food handling, in an intact, clean, and sanitary condition.
- (6) Wearing, where appropriate, hair nets, headbands, caps, beard covers, or other effective hair restraints.
- (7) Storing clothing or other personal belongings in areas other than where food is exposed or where equipment or utensils are washed.
- (8) Confining the following to areas other than where food may be exposed or where equipment or utensils are washed (while kitchen is being used for processing): eating food, chewing gum, drinking beverages, or using tobacco.
- (9) Storing food ingredients for the food on-farm business separately from household foods.
- (10) 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.

(c) *Education and training.*

Follow CT Department of Consumer Protection requirements regarding training in safe food handling/processing. Person in charge should have the knowledge and skills necessary for production of clean and safe acidified foods. Any employees or others should receive appropriate training in proper food handling techniques and food protection principles and should be informed of the danger of poor personal hygiene and insanitary practices.

## BUILDING AND FACILITIES

### 2. Kitchen, building and grounds (FDA cGMPs, 110.20 Plant and grounds.)

(a) *Grounds.* The grounds around the kitchen shall be kept in a condition that will protect against the contamination of food. The methods for adequate maintenance of grounds include, but are not limited to:

- (1) Properly storing equipment, removing litter and waste, and cutting weeds or grass within the immediate vicinity of the on-farm kitchen building that may be attract or be a breeding place, or harborage for pests.
- (2) Maintaining roads, yards, and parking areas so they are not a source of contamination in areas where food is exposed.
- (3) Adequately draining areas that may contribute contamination to food by seepage, foot-borne filth, or providing a breeding place for pests.
- (4) Sewer and septic systems and garbage disposal areas shall be maintained in an adequate manner.

(b) *Kitchen construction and design.*

Kitchen buildings and structures shall be suitable in size, construction, and design to facilitate maintenance and sanitary operations for food-manufacturing purposes. The kitchen and facilities shall:

- (1) Provide sufficient space for placement of equipment and storage of materials necessary for the maintenance of sanitary operations and the production of safe food.
- (2) Be constructed so that floors, walls, and ceilings may be 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.
- (3) Provide adequate lighting in kitchens, toilet rooms and in all areas where food is processed, or stored and where hands, 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 (or have a plan in place should glass breakage occur).
- (4) 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.
- (5) Provide, where necessary, adequate screening or other protection against pests.

### 3. Sanitary operations (FDA cGMPs, 110.35 Sanitary operations.)

(a) *General maintenance.*

Buildings, fixtures, and other physical facilities of the kitchen shall be maintained in a sanitary condition and shall be kept in repair sufficient to prevent food from becoming adulterated. Cleaning and sanitizing of utensils and equipment shall be conducted in a manner that protects against contamination of food, food contact surfaces, or food-packaging materials.

*(b) Substances used in cleaning and sanitizing; storage of toxic materials.*

- (1) Cleaning compounds and sanitizing agents used in cleaning and sanitizing procedures shall be safe and adequate. Keep purchase records of all chemicals used in the processing kitchen. Keep products in their original, labeled container at all times. If products are mixed in another container, be sure to label it.
- (2) Consider purchasing cleaning and sanitizing chemicals used during processing from a restaurant supply source or other source to assure safety and appropriateness for a food processing operation.
- (3) 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 Federal, State and local regulations for the application, use, or holding of these products should be followed.

*(c) Pest control.*

No pets shall be allowed in the kitchen during processing operations. Guard or guide dogs may be allowed if the presence of the dogs is unlikely to result in contamination of food, food-contact surfaces, or food packaging materials. Effective measures shall be taken to exclude pests from the kitchen areas and to protect against the contamination of food on the premises by pests. The use of insecticides or rodenticides is permitted only under precautions and restrictions that will protect against the contamination of food, food-contact surfaces, and food-packaging materials.

*(d) Sanitation of food-contact surfaces.*

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

- (1) 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 (usually every 4 hours).
- (2) Non-food-contact surfaces of equipment used in the operation of the processing kitchen should be cleaned as frequently as necessary to protect against contamination of food.
- (3) 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.

*(e) 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.

**4. Sanitary facilities and controls (FDA cGMPs, 110.37 Sanitary facilities and controls.)**

Each on-farm kitchen shall be equipped with adequate sanitary facilities and accommodations including, but not limited to:

*(a) Water supply.*

Any water that contacts food or food-contact surfaces shall be safe and of adequate sanitary quality. If water source is a well, testing must be conducted annually prior to processing. Running water at a suitable temperature, and under pressure as needed, shall be provided in all areas where required for the processing of food, for the cleaning of equipment, utensils, and food-packaging materials, or for employee sanitary facilities.

(b) *Plumbing.*

Plumbing shall be of adequate size and design and adequately installed and maintained to:

- (1) Carry sufficient quantities of water to required locations.
- (2) Properly convey sewage and liquid disposable waste.
- (3) Avoid being a source of contamination to food, water supplies, equipment, or utensils or creating an unsanitary condition.
- (4) Provide that there is not backflow from, or cross-connection between, piping systems that discharge waste water or sewage and piping systems that carry water for food or food manufacturing.

(c) *Sewage disposal.*

Sewage disposal shall be made into an adequate sewerage system or disposed of through other adequate means.

(d) *Toilet facilities.* The on-farm kitchen facility shall have adequate, readily accessible toilet facilities. Be sure to:

- (1) Maintain the facilities in a sanitary condition.
- (2) Keep the facilities in good repair at all times.
- (3) Consider location of toilet facilities and the potential to contaminate food processing areas of kitchen—if potential is there, consider using other facilities.

(e) *Hand-washing facilities.*

Hand-washing facilities shall be adequate and convenient and be furnished with running water at a suitable temperature. Compliance with this requirement may be accomplished by providing:

- (1) Hand-washing facilities in the kitchen, soap, paper towels, and garbage can.
- (2) Devices or fixtures, such as water control valves, so designed and constructed to protect against recontamination of clean, sanitized hands (or practices are used that prevent recontamination, such as turning off water with a paper towel).

(f) *Rubbish disposal.*

Rubbish shall be so conveyed, stored, and disposed of as to minimize the development of odor, minimize the potential for the waste becoming an attractant and harborage or breeding place for pests, and protect against contamination of food, food-contact surfaces, water supplies, and ground surfaces.

**5. Equipment and utensils (FDA cGMPs, 110.40 Equipment and utensils.)**

(a) All kitchen equipment and utensils shall be designed and constructed to be cleanable and shall be properly maintained. All equipment should be so installed and maintained as to facilitate the cleaning of the equipment and of all adjacent spaces. Food-contact surfaces shall be corrosion-resistant when in contact with food. They shall be made of nontoxic materials and designed to withstand the environment of their intended use and the action of food, and, if applicable, cleaning compounds and sanitizing agents. Food-contact surfaces shall be maintained to protect food from being contaminated by any source.

(b) Seams on food-contact surfaces shall be smoothly bonded or maintained so as to minimize accumulation of food particles, dirt, and organic matter and thus minimize the opportunity for growth of microorganisms.

(c) Freezers and refrigerators used to store and hold food capable of supporting growth of microorganisms shall have a thermometer installed to accurately indicate the temperature.

(d) Instruments and controls used for measuring, regulating, or recording temperatures, pH, acidity, or other conditions that control or prevent the growth of undesirable microorganisms in food shall be accurate and adequately maintained, and adequate in number for their designated uses.

## **6. Processes and controls (FDA cGMPs, 110.80 Processes and controls.)**

Receiving, transporting, preparing, manufacturing, packaging, and storing of food shall be conducted using effective sanitation principles. The person in charge is responsible for overall sanitation of the kitchen.

### *(a) Raw materials and other ingredients.*

- (1) Raw fruits and vegetables shall be inspected and handled to make sure 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 fruits and vegetables shall be washed or cleaned as necessary to remove soil or other contamination. Water used for washing and rinsing food shall be safe and sanitary. Containers and carriers of fruits and vegetables should be inspected to ensure that their condition has not contributed to the contamination or deterioration of food.
- (2) Raw fruits and vegetables should be produced under a Good Agricultural Practices (GAP) program to minimize levels of microorganisms that may produce food poisoning or other disease in humans.
- (3) Frozen raw materials and other ingredients shall be kept frozen. If thawing is required prior to use, it shall be done in a manner that prevents the raw materials and other ingredients from becoming adulterated.
- (4) All other ingredients shall be stored in a manner that protects against contamination.

### *(b) Processing operations.*

- (1) Equipment and utensils and finished food containers shall be maintained in an acceptable condition through appropriate cleaning and sanitizing, as necessary. If necessary, equipment shall be taken apart for thorough cleaning.
- (2) All food processing, including packaging and storage, shall be conducted under such conditions and controls as are necessary to minimize the potential for the growth of microorganisms, or for the contamination of food.
- (3) One way to comply with this requirement is careful monitoring of physical factors such as time, temperature, pH, and processing operations such as freezing, heat processing, acidification, and refrigeration to ensure that mechanical breakdowns, time delays, temperature fluctuations, and other factors do not contribute to the decomposition or contamination of food.
- (4) Food that can support the rapid growth of undesirable microorganisms shall be held in a manner that prevents the food from becoming adulterated. Compliance with this requirement may be accomplished by any effective means, including:
  - (i) Maintaining refrigerated foods at 41°F (7.2 °C) or below as appropriate for the particular food involved.
  - (ii) Maintaining frozen foods in a frozen state.
  - (iii) Maintaining hot foods at 140 °F (60 °C) or above.
  - (iv) Heat treating acid or acidified foods to destroy microorganisms when those foods are to be held in hermetically sealed containers at ambient (room) temperatures.

- (5) Measures such as sterilizing, freezing, refrigerating, or controlling pH that are taken to destroy or prevent the growth of microorganisms, shall be adequate to prevent food from being adulterated.
- (6) Work-in-process shall be handled in a manner that protects against contamination.
- (7) Effective measures shall be taken to protect finished food from contamination by raw materials, other ingredients, or refuse.
- (8) Equipment, containers, and utensils used to convey, hold, or store raw materials, work-in process, or food shall be constructed, handled, and maintained during processing or storage in a manner that protects against contamination.
- (9) Effective measures shall be taken to protect against the inclusion of metal or other extraneous material in food. A common source of metal is shavings from the use of a can opener. Check any mixers, slicers, or food processors both before and after use to insure metal is intact.
- (10) Food, raw materials, and other ingredients that are adulterated shall be disposed of in a manner that protects against the contamination of other food.
- (11) Heat blanching, when required in the preparation of food, should be effected by heating the food to the required temperature, holding it at this temperature for the required time, and then either rapidly cooling the food or passing it to subsequent manufacturing without delay. Thermophilic growth and contamination in blanchers should be minimized by the use of adequate operating temperatures and by periodic cleaning.
- (12) Filling, assembling, packaging, and other operations shall be performed in such a way that the food is protected against contamination. Compliance with this requirement may be accomplished by any effective means, including:
  - (i) Adequate cleaning and sanitizing of all food-contact surfaces and food containers.
  - (ii) Using materials for food containers and food- packaging materials that are safe and suitable.
  - (iii) Providing physical protection from contamination, particularly airborne contamination.
  - (iv) Using sanitary handling procedures.
- (13) Food such as, but not limited to, acid and acidified food, that relies principally on the control of pH for preventing the growth of undesirable microorganisms shall be monitored and maintained at a pH of 4.6 or below. Compliance with this requirement may be accomplished by any effective means, including employment of one or more of the following practices:
  - (i) Monitoring the pH of raw materials and finished food.
  - (ii) Controlling the amount of acid or acidified food added to low-acid food.
- (14) When ice is used in contact with food, it shall be made from water that is safe and of adequate sanitary quality, and shall be used only if it has been manufactured in accordance with current good manufacturing practice as outlined in this part.

## **7. Warehousing and distribution (FDA cGMPs, 110.93 Warehousing and distribution.)**

Storage and transportation of finished food shall be under conditions that will protect food against physical, chemical, and microbial contamination as well as against deterioration of the food and the container.

Adapted from:

US Food and Drug Administration (FDA)

21 CFR PART 110 - Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Human Food