



Food Safety/Health Requirements

Customers come to Farmers' Markets with the expectation of purchasing fresh, quality produce. Unfortunately, improper practices in the production, preparation, transportation, storage, or handling of the produce can contaminate what should be a healthy product. It is up to the vendor to ensure that the product(s) the customer purchases are truly safe to eat. The produce must be kept safe "from farm to fork."

Types of Hazards:

Biological hazards are bacteria, viruses, parasites, or toxins that cause foodborne illnesses. *Salmonella*, *E. coli* 0157:H7, *Campylobacter*, and *Giardia* are just a few of the microorganisms that can cause serious foodborne illness. Hepatitis A is a serious viral disease that can be transmitted from a farm worker through contaminated produce, even when the infected worker has no symptom of illness.

Physical hazards are foreign objects such as wood splinters, glass shards, rocks, and metal pieces that can be accidentally mixed into the produce. These objects can cause injury themselves or they may be a means of introducing biological contaminants.

Chemical hazards include agricultural chemicals used in the production of fruits and vegetables such as pesticides and fertilizers. Heavy metals from the soil, contaminated organic fertilizers, and those chemicals used in cleaning and sanitizing are also chemical hazards to be aware of.

Food safety begins on the farm and should be carried through to the point of the customer serving the food. The vendor has no control over handling practices after the sale, but the vendor is responsible for the safety of the produce right up to the point of sale.

"Food Safety Begins on the Farm: A Grower's Guide" is a good resource for all farmers. This

document can be viewed at: <http://dnr.alaska.gov/ag/FMM/024APPWFoodSafetyonFarm.pdf>

Food Safety in the Field

The production fields need to be clean and free from physical hazards and contaminated soils. Equipment should be in proper working condition to eliminate the possibility of dropping parts or leaking fluids onto the production area.

Animal feces and human contamination are two of the main sources of biological hazards in food. Proper hand washing is one of the single most important factors in food safety, and it is easily controllable. Train your employees in proper hand-washing technique, and be sure that they do it often.

Individuals with open, uncovered wounds and those experiencing vomiting and/or diarrhea symptoms should be reassigned to duties that do not allow them to contact produce or harvesting equipment.

Garbage, discarded produce and trimmings, and other wildlife attractants should be removed from fields. Trash areas should be located away from growing and processing areas, and trash containers must be tightly covered to minimize potential for contamination from pests.

Only enclosed-type rodent traps should be used in growing, processing, and storage areas. Bait-type traps present chemical contamination hazards, and traps that allow dead rodents to remain in place attract scavengers.

Measures should be taken to prevent birds from roosting in the field or on equipment, as their droppings are a known cause of *Campylobacter* infection in produce.

Chemicals, including fertilizers, pesticides, paints, cleaning supplies, etc. should not be stored in close proximity to growing areas or harvested product.



Water quality is important to food safety, both in the field and in produce processing areas. Water used for sprinkler irrigation of crops close to harvest time should be from a clean drinking water source that has been tested for fecal coliform bacteria. Water collected from roof runoff is often contaminated with waste from roosting birds, and should not be used for sprinkler irrigation close to harvest unless it is treated and/or tested first.

Aged manure or incompletely composted materials should not be applied to the produce fields until after harvest. Do not apply manure to a harvested area if other crops that have not been harvested are in close proximity, because rain, runoff and wind can spread pathogens to adjacent areas.

Compost must be properly treated before it can be applied to produce fields prior to harvest. In order for compost to be properly treated, it must be brought up to a temperature between 131°F and 170°F throughout the pile. This temperature must be maintained for anywhere from 3 days (for compost piles/vessels) to 15 days (for windrows) in order to kill dangerous pathogens. Only compost that is properly heat-treated can be used on fields prior to harvest. Properly treated compost should only be applied up to 90 days prior to harvest (for non-soil contact crops) or 120 days prior to harvest (for crops in contact with soil).

Contact Barb Hanson for more information:
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Harvest, Handling and Transportation Process

Harvest knives and bins should be clean and in good condition. All workers must wash their hands before handling produce. Produce workers and handlers must also

wash their hands under running water with soap after using the toilet, eating, smoking, applying chemicals, or whenever they become dirty or potentially contaminated. Disposable or single-use towels should be provided to workers for hand drying.

On at least a daily basis, all equipment coming into contact with produce should be cleaned with detergent and water, then sanitized with a 50-200 PPM bleach solution. Food contact surfaces such as tables and sorting bins should be made of food-safe materials, and should be properly cleaned with soap and water and then disinfected prior to contact with produce. To make a 200ppm bleach solution, add 1 Tbsp. of regular (non-scented) bleach to 1 gallon of water.

Produce should only be washed with potable water from a source that has tested negative for total coliform bacteria.

Produce that has or may have been contaminated with animal excrement, bird droppings, blood, or contaminants should be disposed of.

Produce handling and storage areas should only be used for those purposes, in order to avoid potential contamination from other sources.

Rapid and proper chilling of harvested produce is important to increase shelf life and hamper growth of microbes.

When transporting produce to market, make sure it is in clean containers, transported in a clean vehicle that is not used for hauling livestock, manure or chemicals, and that produce is covered while being transported.

If you have more questions or request additional information, please contact the Division of Agriculture

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