

Part 4 — Storage and Transportation

Container and Pallets

This section describes how containers not being used are stored and protected from contamination by pests, bird droppings, dirt and water. Wherever containers are stored, inside or outside, they must be covered for protection. The auditor will want to see the storage area.

All pallets and containers **used for ready-to-eat fresh produce must be cleaned and sanitized**. The containers must be protected from exposure to soil and manure in the field. A system to repair, clean and/or disinfect containers and pallets should be in place (See *Harvesting container sanitization*). When not producing ready-to-eat product, equipment, pallets and containers should be clean, maintained and free of foreign material as practical as possible.

If the products are stored in bulk (i.e. potatoes and onions) a log should be used to inspect the storage prior to loading (See *Packing house & storage cleaning recommendations*, *Packing house and storage facilities-daily-inspection*, *Packinghouse and storage facilities-monthly-inspection* and *Packinghouse and storage facilities-quarterly-inspection*).

Pest Control

Establish proactive procedures to exclude pests and animals. Screens, wind curtains, bird deterrent tape and traps should be utilized to reduce problems with pests. Dogs and cats should not be allowed to roam the packinghouse. A pest control log should be maintained indicating dates of inspections, inspection reports and steps taken to eliminate any problems (See *Bait station control log*). Each trap should be numbered and marked on a map indicating bait station location. All bait traps containing poison must be located outside the packinghouse or storage area. Only non-poison methods can be used in the packing and storage areas. The pest control program should be

written down and included along with a copy of the log in the Grower Food Safety Manual.

The auditor will look over the packing and storage areas to see if they are well maintained. This includes whether there are major cracks and crevices in the walls, doors, ceiling and floors where pests may hide. All areas where pests may enter should be sealed to the extent possible. Insulation in the ceiling and walls should not be loose. This is an ideal location for birds and other pests to hide.

The presence or evidence of rodents, birds, other mammal type pests, pets, excessive amounts of insects or feces in the production or storage area will result in an immediate failure of the audit.

Ice

Water used to produce ice or used during hydro cooling should be potable in order to reduce the risk of food contamination. If purchasing ice obtain a copy of the water test from that location or if from a farm well have it tested at least twice a year (See *Water source testing log*).

Ice making facilities must be sanitized on a regular schedule. This includes the production and storage area and any conveyors, bins or augurs used to transport the ice. Obtain a copy of the sanitization log from the icemaker. The schedule should be documented in the Grower Food Safety Manual. All ice hauled to a separate location must be transported in a closed truck or the bins covered. No ice should be transported in wood containers since the wood can get into the ice then into the produce.

Storage/Temperature Control

The storage facility should be cleaned on a regular schedule or as required to minimize free-floating dust and other airborne contaminants (See *Packing house & storage cleaning recommendations, Packing house and storage facilities-daily-inspection, Packing house and storage facilities-monthly-inspection* and *Packing house and storage*

facilities-quarterly-inspection). All visible debris and unnecessary items should be removed in a timely manner.

Refrigeration systems must be maintained regularly and kept in good operating condition. Storage temperature logs will help auditors verify the rooms are maintaining proper temperatures (*See Storage temperature log*). It is suggested that the temperature be checked before starting work for the day. This will give the most accurate reading in the storage. Thermometers should be checked on a regular schedule for accuracy and those checks should be documented (*See Thermometer log*). Thermometers only need to be checked for accuracy monthly. The easiest method is to place an adjustable thermometer in a jar with crushed ice and water. The temperature of the solution will be 32°F after a short time. Adjust the thermometer to 32°F as needed then use that thermometer to check the storage. Even if an automated system is in place, thermometers should be manually checked monthly.

A Note on calibration of your thermometer

This information on thermometer calibration is brought from “Food Store Sanitation”, 1988, Sixth Edition, Gravani, Robert B., Rishoi, Don C., Cornell University Food Industry Management Distance Education Program, Lebhar-Friedman Books, Chain Store Publishing Corp.

Melting Point of ice method

1. Place ice in a container and let it melt.
2. Stir to make sure that the temperature in the ice/water mixture is uniform throughout the container.
3. When the ice is partially melted and the container is filled with a 50/50 ice and water solution, insert the thermometer and wait until the needle indicator stabilizes. The thermometer should be 32°F (0°C).
4. If the thermometer is not reading 32°F (0°C), it should be adjusted by holding the head of the thermometer firmly and using a small wrench to turn the calibration (hex) nut under the head until the indicator read 32°F (0°C).

An important item to remember as you are calibrating your thermometer using the melting point of ice method is to never add tap water to ice because this will **not** be 32°F (0°C) but will be at a higher temperature. The calibration will be much more accurate if you use melting ice.

Transportation/Loading

Employees should make every effort to ensure that trucks and trailers are clean, free of objectionable odors and generally are in good condition. Refrigeration units should be calibrated on a regular schedule and produce items should be shipped only with produce items. Canvas shoots on refrigeration units should be in good shape with no rips or holes and securely fastened to the unit and trailer. A log must be maintained to show that trucks were checked prior to loading (See *Carrier monitoring log*). Produce temperature requirements during shipment should be recorded on the manifest. The trailer should be at the proper temperature prior to loading. The refrigeration units are not designed to lower temperatures, but to maintain cold temperatures. If shipping straight loads of produce, consider placing a temperature recorder in the trailer to document air temperatures.

A company policy must be included in the Grower Food Safety Manual explaining how trucks are loaded to minimize produce damage. Following is an example:

Procedure to minimize produce damage

Produce is palletized with glue strips on the top of each carton, hand stacked and wrapped with plastic to secure cartons to the pallet. Pallets are secured with load braces after loading the truck.