PRODUCE HANDLING TOOLKIT V2

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*Indicates Hard 7, which represent the primary items of focus for the National Produce Program due in part to their relative high durability, availability, and nutritional value

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i. Intro

The Feeding America network has seen produce as a category (from all sources) grow impressively, from about 600 MM lbs. in FY10 to over 900MM lbs. in FY13. Produce has many attractive benefits, such as being highly nutritious. However, it also presents unique handling requirements that can differ from traditional food bank staple items like canned goods.

As they move increasing amounts of produce, members have articulated a need for more materials to guide them on how to handle produce. This toolkit aims to address that need by providing a set of guidelines and best practices on produce handling for food banks, from receiving to outbound.

Food banks see a wide range of produce crops and quality, everything from excess product that is retail quality to produce that has gone beyond a salvageable state. This toolkit is intended to address the unique produce handling needs of food banks in a way that standard produce industry guides cannot. It incorporates produce industry standards for handling, best practices from members, and Feeding America policies.

Every food bank is different. Not every practice described in this toolkit will fit the needs of every food bank. This document is meant to be a guide, not a rulebook.

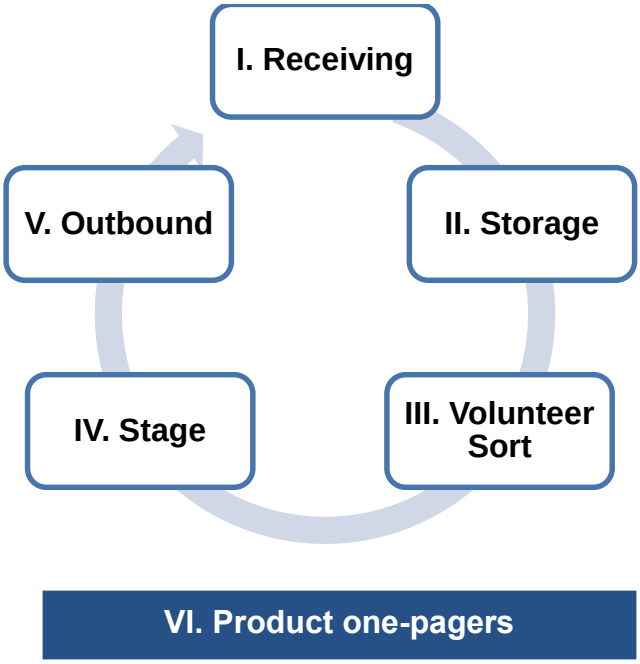
Special thanks to all of the food banks that contributed to this toolkit: Second Harvest Food Bank of Santa Clara and San Mateo Counties, City Harvest, Houston Food Bank, Food Gatherers, Feeding South Dakota, Northeast Iowa Food Bank, Regional Food Bank of Oklahoma, and the California Association of Food Banks.

Finally, this toolkit is a living document. We welcome feedback on its contents as well as suggestions for additions. Feedback will be incorporated as it is provided. Please contact Melody Chan, Produce Engagement Coordinator, at mchan@feedingamerica.org for comments or questions. This document is available on the Produce Resource Center of Hungernet at https://www.hungernet.org/PRC/ops/Documents/Produce%20Handling%20Toolkit.docx.

Framework

The following framework of the produce handling process organizes the contents of this toolkit. It begins when the product is received at the food bank and ends when it is outbound to agencies (or, in some cases, directly to clients).

There is a section in the toolkit with best practices for each of the five steps below. Additionally, for some of the most common crops that the network handles, there is a series of product one-pagers with handling information.



Produce handling guide: From pick-up to outbound

I. Receiving

When produce is received at the food bank, it is usually the first opportunity for food banks to physically examine the product. Unlike other food types like cans or other shelf-stable packaged food, produce requires unique and specific handling. Produce can generally withstand a range of storage/transport temperatures, but going too extreme on either end could cause damage Therefore, going through a thorough inspection process during receiving is crucial to ensuring product quality.

Executing the receiving process well is also an essential part of inventory management. Recording dates, quantities, conditions, etc. is important for any type of food, but is especially important with food types that can go bad in days. Collecting and labeling the appropriate information during the receiving process will help the food bank coordinate inventory well.

The “Receiving” section begins with best practices for pick-up at the donor site and then details a recommended receiving process, including instructions for inspection. There is a recommended inspection form for receiving that is included in the appendix.

Pick-up

Some food banks choose to pick up produce directly from the donor. For these food banks, it is a good idea for drivers to go through the inspection process detailed below at the pick-up site, before loading it onto the truck. That way, the driver can decide whether or not the load is usable before putting in the time and resources to transport it. For instance, farms often may not have cooler facilities at the pick-up site, and produce that has sat out in the sun may be too hot to cool down to the proper transport temperature when loaded, even if the refrigerated truck itself is at the recommended temperature before the truck is loaded.

It is particularly important for the drivers to take photos at pick-up, since there are no other food bank personnel there to help assess on-site. In the event that a load is rejected, photos are necessary evidence of the reasons for rejection.

Receiving process

Executing produce receiving well is important because it helps ensure product quality and good inventory management. The receiving inspection is typically the first opportunity to examine the condition of the produce, while the information documented during receiving is a key input into the overall inventory management system.

The "Inbound Produce Inspection Form" in the appendix is recommended to document the process detailed here.

Inspecting should happen at multiple times throughout the life of the product—not just at receiving, but also while it is stored and before it gets loaded. However, inspection when the produce is first received should be the most thorough.

We recommend the following steps for receiving produce:

1. ***Check the seal (if applicable)***

   For loads ordered from the Feeding America Choice system, there will be a seal on the truck door. If the seal is broken on one of these trucks before arriving at the food bank, contact Feeding America. Also, it is important to verify the actual seal number with the seal number on the Bill of Lading (BOL) to make sure that it is the original seal.

   3rd party trucks may not have a seal to start with due to various reasons (i.e., distributing to multiple food banks). Working with partners that seal their loads is best practice.

2. ***Record truck temperature (if possible)***

   Refrigerated trucks usually have a temperature recorder that shows the truck temperature during its journey. If it is too high, the produce may have begun to decay; if too low, the produce may be frozen or damaged by chill.

   National Produce Program (NPP) trucks are required to have a single use, paper strip temperature recorder. Pull the paper strip from the temperature recorder, review, and attach to BOL for future reference. Please notify NPP manager Mark Thomas (mthomas@feedingamerica.org) if no recorder is found.

   For trucks that are not from the NPP and do not have temperature recorders, it is advisable for food banks to require growers/shippers to use temperature recorders.

3. ***Assess produce appearance (take photos)***

   The inspector should do a visual scan to check for signs of damage, decay, pests, etc. when first opening the door. Then, pull the pallets off and examine quality from pallets located in back, middle, and front of the truck. If possible, taking photographs of the produce from multiple areas of the shipment will provide documentation, particularly if there is a reason to reject the load.

4. ***Check product samples (temperature, condition) from multiple areas of the shipment***

Temperatures need to be taken from inside the product using a pulp thermometer (acceptable temperatures in "Produce Storage/Transport Guidelines"). A pulp thermometer (see picture) is a probe type device that is inserted into the center or core of the product.



Samples should be taken from different pallets in the front, middle, and back of the shipment to be comprehensive. Conditions can vary between different areas of the truck.

In addition to taking the temperature, inspectors should assess the qualitative condition of the samples for signs of decay and damage. If necessary, inspectors should cut into the product samples to examine for rot, discoloration, etc. Keep in mind that donated produce is often a USDA #2 grade with surface blemishes that do not affect its overall quality.

5. ***Set an expiration date based on the temperature and condition assessment***

Inspectors should set a date by which the produce needs to be moved out of the warehouse. This date should be based on temperature and condition at receiving, as well as the typical life span of the product. Identifying an expiration date will help manage inventory efficiently.

Because there are so many factors affecting produce life span, this task is best done by people experienced in produce handling. For some guidance on how to estimate life span, see "Product lifespan estimation" in the appendix.

6. ***Unload and label produce***

Pallets should be labeled with product type, amount, date of arrival, and date of expiration.

In appendix, see "Produce labeling forms" for a suggested template on reusable produce labels. It is meant to be printed and then laminated so that the yellow side is on front (label before volunteer sort) and green on back (label after volunteer sort). Then dry erase markers can be used to fill in the information

7. ***If necessary, follow protocol to reject the load of produce***

In general, make sure to check and photograph any issues with the trailer and/or produce, note damage on bills, and keep the truck on site until the situation is resolved. For Choice loads, see "Choice Bad Load Resolution Process."

II. Storage

Once produce has been received and inspected, the food bank needs to hold it until it can go out again for distribution. Keeping produce in the recommended storage conditions gives it the best chance of getting to the client's hands in good condition. After all, agencies may not be able to distribute produce immediately, and clients may store it after receiving as well. Most produce requires conditioned storage space to maintain its quality. Also, some crops have special storage considerations to take into account (i.e., apples and bananas should not be stored together because the ethylene gas that the apples emit will cause the bananas to ripen too quickly).

This section begins with best practices for storage, followed by handouts that can be printed and used separately for education or reference purposes (e.g., temperature guidelines).

Temperature

Maintaining proper temperatures is key to ensuring quality. Produce should spend as little time as possible outside of its recommended temperature settings. **Use the "Produce storage/transport guidelines" table to determine at what temperature to store each crop**, as well as additional info (on ethylene and odors).

Storage food safety measures

For coolers, adequate air circulation should be provided. Product must be stored at least four inches from walls. Each cooler unit needs an accurate, easily visible and readable thermometer. Cold storage facilities and in particular refrigeration coils, refrigerator drip pans, forced air cooling fans, drain tiles, walls and floors should be cleaned and sanitized on a frequent and regular basis. Avoid placing warm products in coolers with insufficient capacity; the temperature will rise, and as the room cools condensation may drip and contaminate produce.

Products in dry storage must be maintained off the floor by using pallets, shelving or other means, and must be kept 18 inches away from walls. Any surface it comes in contact with should be cleaned and sanitized on a regular basis.

Organizing produce storage

Certain crops should not be kept in close proximity to other products. Ethylene gas and odor are typical culprits. Some crops (like apples) emit ethylene gas, which causes ethylene-sensitive crops (like bananas) to ripen too quickly if exposed. Likewise, some crops (like lemons) have strong odors that affect some sensitive crops (like pineapples). **Refer to "Produce storage/transport groupings" for produce items by ethylene sensitivity/production and odor sensitivity/production.** Produce should never be kept near chemicals, raw poultry, meat, or seafood.

Given that food banks often do not have the luxury of using numerous coolers with different temperature control settings, "Produce storage/transport temperature grouping" categorizes crops into various temperature groupings. These groupings are not the recommended storage temperature for each crop, but rather general guidelines on the temperature range that each crop falls within to aid in produce area organization.

Storage inspections

While in storage, **produce should be checked daily (if not more often) to ensure that there are no new signs of damage, decay, or pest infestation and that it is being held in the proper temperature.** One way to integrate this with other warehouse activities is to check for produce quality while doing inventory level checks. Documenting and coordinating checks will help make operations more efficient. Based on the condition observed, it may be necessary to change the order in which pallets are pulled down for distribution. Also, if any pallets appear damaged or unstable sitting in racks, they may need to be rearranged or replaced.

Produce storage/transport guidelines

PRODUCT	*STORAGE TEMP (°F)*	*ETHYLENE SENSITIVE*	*ETHYLENE PRODUCER*	*ODOR SENSITIVE*	*ODOR PRODUCER*	*SUSCEPTIBLE TO FREEZING*
APPLES	32-34	N	**Y**	**Y**	N	**Y**
BANANAS	56-58; to ripen 60-65	**Y**	N	N	N	**Y**
BEANS, SNAP/GREEN	40-45	N	N	N	N	**Y**
BEANS, LIMA	37-41	**Y**	N	N	N	**Y**
BERRIES, BLACKBERRIES	32-34	N	N	N	N	**Y**
BERRIES, BLUEBERRIES	32-34	N	N	N	N	**Y**
BERRIES, STRAWBERRIES	32-34	N	N	N	N	**Y**
BROCCOLI	32	**Y**	N	N	N	**Y**
CABBAGE	32	**Y**	N	**Y**	N	N
CANTALOUPE	36-41	N	**Y**	N	N	**Y**
CARROTS	33-35	**Y**	N	**Y**	N	N
CAULIFLOWER	32	**Y**	N	N	N	N
CELERY	32-36	N	N	**Y**	N	N
CORN	34-38	N	N	**Y**	N	N
CUCUMBERS	45-50	**Y**	N	N	N	**Y**
MIXED FRUIT, FRESH CUT	33-41	N	N	N	N	**Y**
GRAPES	30-32	N	N	**Y**	**Y**	**Y**
GRAPEFRUIT	CA and AZ: 50-55; FL and TX: 50-60	**Y**	N	N	N	N
HONEYDEW	45-50	N	N	N	**Y**	**Y**
LEMONS	45-48	**Y**	N	N	N	**Y**
LETTUCE WHOLE	34-36	**Y**	N	N	N	**Y**
LETTUCE LEAF	34-36	N	N	N	N	N
NECTARINES	32-36; to ripen 51-77	**Y**	**Y**	N	N	N
OKRA	43-45	**Y**	N	N	N	**Y**
ONIONS, BULB	40-60	**Y**	N	**Y**	**Y**	**Y**
ONIONS, GREEN	32	N	N	N	**Y**	N
ONIONS, SWEET	45-55	N	N	**Y**	**Y**	**Y**
ORANGES	FL: 32-34; CA: 45-48; AZ & TX: 32-48	N	N	N	**Y**	**Y**
PEACHES	In-transit: 32-34; Receiving 57-77	**Y**	**Y**	N	N	**Y**
PEARS	32; To ripen 60-70	N	**Y**	**Y**	**Y**	**Y**
PEPPERS, BELL	45-50	**Y**	N	N	**Y**	**Y**
PINEAPPLES	Green: 50-55; Ripe: 45	N	N	**Y**	N	**Y**
PLUMS	In-transit: 32-34; Receiving 51-77	**Y**	**Y**	N	N	**Y**
POTATOES	45-50	N	N	**Y**	**Y**	**Y**
SALAD MIXES, FRESH CUT	33	N	N	N	N	N
SQUASH	Soft: 41-50; Hard: 50-55	**Y**	N	N	N	**Y**
SWEET POTATOES	55-60	**Y**	N	N	N	**Y**
TOMATOES	62-68; Ripe 55-60	N	N	N	N	**Y**
WATERMELONS	50-60	**Y**	N	N	N	**Y**

Ethylene sensitive products should NOT be stored or transported with ethylene-producers. Similarly, odor sensitive products should NOT be stored or transported with odor producers

Data from *The Guide: Produce Availability & Merchandising Guide*

Produce storage/transport groupings

Ethylene* sensitive

BANANAS
BEANS, SNAP/GREEN
BROCCOLI
CABBAGE
CARROTS
CAULIFLOWER
CUCUMBERS
HONEYDEW MELONS
LETTUCE WHOLE
LETTUCE LEAF
OKRA
ONIONS, BULB
PEACHES
PEARS
PEPPERS, BELL
PLUMS
SQUASH
SWEET POTATOES
WATERMELONS

Ethylene* producers

APPLES
CANTALOUPE
PEACHES
PEARS
PLUMS

Odor sensitive**

APPLES
CABBAGE
CARROTS
CELERY
CORN
GRAPES
ONIONS, BULB
ONIONS, SWEET
PEARS
PINEAPPLES
POTATOES

Odor producers**

GRAPES
LEMONS
ONIONS, BULB
ONIONS, GREEN
ONIONS, SWEET
ORANGES
PEARS
PEPPERS, BELL
POTATOES

***Ethylene is a gas that causes many fruits and vegetables to ripen. Certain crops are particularly sensitive to it, while others produce large quantities of it. Ethylene sensitive crops should never be stored or transported with ethylene producers.**

****Some crops will readily absorb odors from certain other crops with strong odors if kept in the same area. Crops labeled as odor sensitive should never be stored or transported with odor producers.**

Produce storage/transport temperature groupings

Very cold group: 32-38°F	**Cold group: 45-50°F**	**Cool group: 55-65°F**
APPLES	BEANS, SNAP/GREEN	BANANAS
BEANS, LIMA	CUCUMBERS	ONIONS, BULB
BERRIES, BLACKBERRIES	GRAPEFRUIT	SWEET POTATOES
BERRIES, BLUEBERRIES	HONEYDEW MELONS	TOMATOES
BERRIES, STRAWBERRIES	LEMONS	
BROCCOLI	ONIONS, SWEET	
CABBAGE	ORANGES	
CANTALOUPE	OKRA	
CARROTS	PEPPERS, BELL	
CAULIFLOWER	PINEAPPLES	
CELERY	POTATOES	
CORN	SQUASH	
GRAPES	WATERMELONS	
LETTUCE LEAF		
LETTUCE WHOLE		
MIXED FRUIT, FRESH CUT		
NECTARINES		
ONIONS, GREEN		
PEACHES		
PEARS		
PLUMS		
SALAD MIXES, FRESH CUT		

These cooler space groupings are meant to help organize storage for coolers at food banks, not to be taken as an exact indication of recommended storage temperature for each product. For precise temperatures by product, check "Produce storage/transport guidelines."

III. Volunteer Sort

Once the produce has been taken into the food bank, it is often sorted by volunteers. This sorting generally serves one (or both) of these purposes:

1. **Culling**

   Volunteers will sort produce by hand to ensure that moldy or otherwise unusable produce is disposed of. The need for culling depends on how fast the food bank typically distributes produce as well as what percentage of the produce usable is usable when it comes in. For food banks that have extremely fast turnover (same day or next day from receiving), culling is not as important as for food banks that may have to store produce for longer.

2. **Repack**

   The need for repack depends largely on program and agency capacity. Many programs and agencies do not have the capabilities to handle full pallets of produce.

   Programs that distribute to seniors and children, for example, may need their produce to be placed into small packs (i.e., 3 lb. bags). Programs that distribute to families often can handle slightly larger packs. Regardless, programs that involve handing small quantities of produce to individuals or families will generally require repack.

   Small agencies often do not distribute large enough volumes to handle full pallets of produce. For instance, if agencies cannot distribute an entire pallet of cantaloupes at once, it will likely spoil and go to waste before it reaches clients. To deal with this agency capacity issue, volunteers can sort produce into mixed pallets that agencies can use more easily.

The volunteer sort process will differ from food bank to food bank, given different facilities, resources, and product mix. The following handout is a list of tips for volunteer sort that should be widely applicable to most food banks.

Practical tips for volunteer sorting

Sanitary practices

- Make sure anyone sorting is in good health (not sick with a cold or flu-like symptoms)
- Wash hands with soap and warm water for 20 seconds before sorting and when returning from breaks; preferably, dry hands with paper towels
- Put on a hair restraint (hairnet, bandana, or hat) before sorting
- Use disposable food-service grade gloves
- For very dusty crops like potatoes or sweet potatoes, you can use masks and disposable aprons to avoid breathing in dust and dirtying clothes
- After finishing the sort, wash and sanitize all surfaces that were used, especially tabletops
    - Sweep floors and inspect for spills; clean floors with sanitizing solution as necessary
    - Thoroughly wash and sanitize sinks
    - Wash, rinse and sanitize all equipment used

Physical safety tips

- Use safe lifting techniques when carrying heavy objects (i.e., lift with legs and not back)
- Avoid heavy work if you have health issues that will become aggravated
- Stay hydrated and take breaks as needed
- Stay out of the way of potentially dangerous warehouse equipment like fork lifts

Sorting equipment suggestions

- Softer products that have with more delicate skin (i.e., peaches) are better in boxes for repack, while harder products (i.e., apples) can withstand repack in bags
- Of all of the materials to use in the sort process, plastic bins are ideal from a food safety perspective because it can be properly sanitized, while cardboard and wood cannot be
- The ideal packaging for outbound produce includes vents (i.e., perforation in bags or sides of boxes) to encourage ventilation
- Try not to reuse cardboard boxes if possible to avoid cross-contamination

General recommendations

- If you find a moldy item, do not sniff it because of potential respiratory issues; remove and place in scrap receptacle
- Always minimize the time produce spends outside of ideal storage conditions
- Show volunteers acceptable vs. not acceptable blemishes to help understand what produce should be thrown away (see Product one-pagers for some examples to use)
- Using the Produce labeling forms included in the appendix makes it easy to identify what produce has been sorted or not (yellow is unsorted, green is sorted)
- For distribution to small agencies, it may be a good idea for volunteers to sort mixed pallets
- Do not overfill repack containers or bags
- Composting rejected produce is an alternative to discarding it

IV. Stage

Staging is when the food bank is preparing produce for outbound distribution. While the physical act of staging is usually straightforward, deciding which produce goes out when can be trickier. Different crops in different conditions at receiving have different lifespans. Managing produce inventory involves balancing different needs—while certain products may need to be distributed quickly, agencies may not necessarily have the capacity to handle large amounts of it in a short period of time.

While the best practices below focus on produce in the food bank, we want to acknowledge the role of agencies. From an inventory management perspective, a "push" model where the food bank works out a produce distribution schedule with the agencies is better for the food bank than a "pull" model where agencies order specific quantities/types of produce. However, a "push" model will require more planning upfront to forecast produce demand and supply.

FEFO or FIFO

FEFO stands for First Expired, First Out. It is an inventory management practice for perishable goods that will minimize spoilage. Using FEFO means that the produce that will expire the soonest needs to leave the warehouse the soonest. For instance, there could be shipments of potatoes and strawberries received on Monday. However, during the receiving inspection, the strawberries are assigned an expiration date of that Wednesday, while the potatoes are assigned an expiration date of the following Monday. Despite the fact that the potatoes and strawberries came in at the same time, the strawberries should leave earlier because of their shorter life span.

To use FEFO, make sure to assign, label, and document an expiration date for produce when it is first received. The expiration date assessment should be based on the product's typical life span as well as its condition upon receiving.

FIFO stands for First In, First Out. Using this practice, whatever comes in to the warehouse first should leave soonest. **FEFO is highly preferable to FIFO for produce**, due to examples like the one just mentioned above. However, FEFO may also be harder to implement because estimating product life span can be a difficult task. At the very least, produce should be managed using FIFO based on arrival times.

Staging best practices

As with any step in produce handling, keep a continuous cold chain. **Staging should be done in the cooler to maintain proper storage conditions**. In the event that staging cannot be done in the cooler because of space restrictions, make sure to minimize time out of proper storage conditions. Maintain continuous cold chain wherever possible to preserve quality and shelf life.



V. Outbound

Having put so much effort into handling produce through its lifetime at the food bank, it is important to make sure it gets to the agency (or other final destination) in good condition. On its way out the door, the basics of handling produce are the same as they have been throughout the whole handling process. However, there are some tips in this section specific to loading onto transport that will help ensure that the produce stays fresh.

Also, many food banks have expanded produce distribution into a new channel: Mobile Pantry. Although Mobile Pantry comes in many forms, the model that will be discussed here is the one where food banks operate their own truck and distribute directly to clients. This channel helps food banks distribute produce in excess of agency capacity or in areas where there is very little agency activity. Mobile pantry is typically used to target clients that do not have access to nutritious food regularly, “food deserts.” There are some tips for operating Mobile Pantry included in this section as well.

Practical tips for loading

Loading pointers specific to produce:

- Pre-cool the unit to recommended storage/transport temperature before loading begins
    - Road and weather conditions may affect the temperature of the truck—keep them in mind when setting a transport temperature
- Before loading produce, make sure to inspect its condition one last time
    - Catching a quality issue before the produce reaches the agency will save time and fuel
- Load as quickly as possible to minimize time out of optimal storage conditions
- For transport to many small agencies, make sure to organize the load by what will go out to each agency (i.e., don't put all of one type of produce in the front of the trailer when it should be distributed to every agency)

Trucking best practices, as for any type of load:

- Make sure the weight is distributed evenly across the trailer
- Turn unit off while loading to minimize heat and humidity entering the trailer
- to minimize movement during transport
- Make use of strapping, shrink wrap, brace bars, and other stabilizing tools as necessary to minimize shifting and damage during transport
- Allow at least one foot of airspace above the load to ensure proper circulation
- Check that refrigerated unit is operating normally and at the correct temperature before leaving
- Wherever possible, make use of truck strip curtains to help maintain trailer air temp, especially when frequently opening doors

Mobile Pantry tips



Example of mobile pantry truck, re-outfitted beverage truck with multiple panel doors

Mobile Pantry vehicle

- For direct distribution to clients, beverage trucks with side panel doors work well
- Having at least some cooled compartments within truck allows the truck to carry a variety of food types, including produce

Produce planning for Mobile Pantry runs

- Forecasting and planning ahead is especially important for ensuring consistent produce supply on frequent Mobile Pantry runs (i.e., twice a week)
- Sourcing a variety of produce is ideal for relatively small distributions like these—a truck full of onions is probably not appealing to clients
- Mobile Pantry can ensure that produce with a short lifespan gets to clients before it goes bad
- Packing produce in small enough packs for families/individuals facilitates quick distribution

Operating the Mobile Pantry program

- Make sure to market the event well beforehand, especially if the Mobile Pantry does not make consistent visits to the site
- Although volunteers usually help with distribution, using a driver that can drive and oversee program operations can be an efficient use of resources
- If running water is not available at the site, have hand sanitizer available for staff and volunteers
- In adverse weather conditions (especially in areas with harsh winters), Mobile Pantry may need to coordinate with agencies to use an actual facility

VI. Product one-pagers

These one-pagers on common produce crops are designed for produce handling training or ongoing reference. They may be helpful for training volunteers on sorting or for labeling shipments of certain products as they come in. All of the one-pagers include temperature guidelines, inspecting tips, and photographs to help identify what product is acceptable and what is not.

Crops covered in the one-pagers:

1. Apples*
2. Apricots
3. Bananas
4. Bell peppers
5. Berries (black, blue)
6. Broccoli
7. Brussels sprouts
8. Cabbage*
9. Cantaloupe
10. Carrots*
11. Cauliflower
12. Celery
13. Corn, sweet
14. Cucumbers
15. Grapefruit
16. Lemons/limes
17. Lettuce

18. Mushrooms
19. Nectarines
20. Onions (bulb)*
21. Oranges*
22. Peaches
23. Pears
24. Plums
25. Potatoes*
26. Squash, hard-shell
27. Squash, soft-shell
28. Strawberries
29. Sweet potatoes*
30. Tomatoes
31. Watermelon

*Indicates Hard 7, which represent the primary items of focus for the National Produce Program due in part to their relative high durability, availability, and nutritional value

Main sources: The Packer, PMA

Apples

Receiving and inspecting

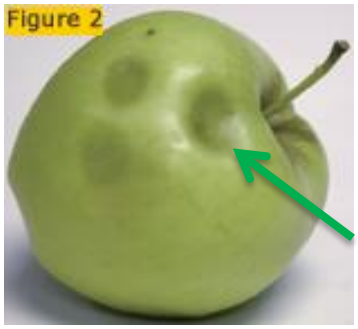
Apples should be firm and have smooth skin.

Storing and handling

Apples should be stored at 32-34°F, at 85-95% relative humidity. Susceptible to freezing; do not store below 29°F.

Sensitive to ethylene: No
Produces ethylene: **Yes**
Odor-sensitive: **Yes**
Odor-producing: No

Acceptable

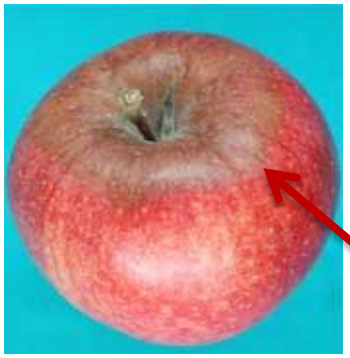


Bruises

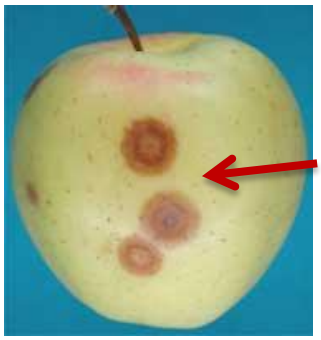

Superficial spot

Not acceptable


Blue mold


Gray mold


Alternaria rot


Bull's eye rot

Apricots

Receiving and inspecting

Apricots should be firm to slightly soft (ripe), but not overripe (mushy).

Storing and handling

Apricots should be stored at 32-36°F, 85-95% humidity. Do not store below 31°F.

Sensitive to ethylene: **Yes** Odor-sensitive: No

Produces ethylene: **Yes** Odor-producing: No

Acceptable



Sunburn or ripe fruit OK.



Surface scarring, mechanical damage OK

Not acceptable



Rot-mushy and discolored



Split skin

Bananas

Receiving and inspecting

Avoid fruit with damaged skins.

Storing and handling

Bananas should be stored at 56-58°F, at 85-95% relative humidity. To ripen green bananas, store at 60-65°F. Bananas bruise easily; handle with care.

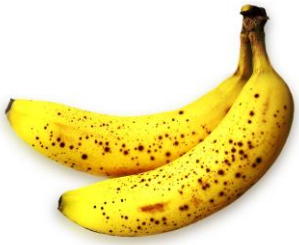
Sensitive to ethylene: **Yes** Odor-sensitive: No

Produces ethylene: No Odor-producing: No

Acceptable



A few bruises



Slight speckling

Not acceptable



Chill damage



Overripe



Also overripe

Bell peppers

Receiving and inspecting

Bell peppers should be firm in texture.

Storing and handling

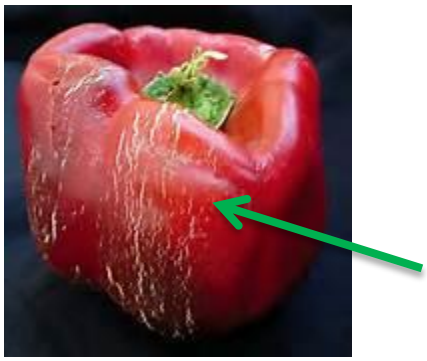
Bell peppers should be stored at 45-50°F, at 85-95% relative humidity. Avoid storing below 42°F to avoid chill injury.

Sensitive to ethylene: **Yes**
Produces ethylene: No
Odor-sensitive: No
Odor-producing: **Yes**

Acceptable



Variations in colors



Surface cracks, blemishes, slight puckering

Not acceptable



Decay, heavy puckering or rotting



Mold

Berries (black, blue)

Receiving and inspecting

Berries should be firm and fairly dry. Berries do not ripen after harvest; discard any green berries.

Storing and handling

Blueberries and blackberries should be stored at 32-34°F at 90-98% relative humidity. Do not store below 30°F, as blackberries are very susceptible to freeze damage. Blackberries in particular are very perishable, so handle with care and use soon after receiving.

Sensitive to ethylene: No
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable



Should not be green or underripe



Check that cartons are not oozing, slight moistness ok

Not acceptable



Mushy and discolored fruit



Mold

Broccoli

Receiving and inspecting

Broccoli should be firm and not limp. Some yellow is ok.

Storing and handling

Broccoli should be stored at 32°F, at 90-98% relative humidity. Handle with care to avoid damage to bud clusters.

Sensitive to ethylene: **Yes**
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable



Some yellowing



Multi-colored varieties

Not acceptable



Bacterial soft rot on broccoli

Discoloration from rot (soft, dark spots)



Moldy

Brussels sprouts

Receiving and inspecting

Brussels sprouts should be firm, green, and have compact leaves.

Storing and handling

Plums should be stored at 32-36°F, at 90-98% relative humidity. Do not store below 31°F.

Sensitive to ethylene: **Yes** Odor-sensitive: No

Produces ethylene: No Odor-producing: No

Acceptable



Firm, green, some surface spots OK

Not acceptable



Yellowing due to age or ethylene exposure



Rot, large black spots

Cabbage

Receiving and inspecting

Cabbages should be fairly even colored and heavy for its size.

Storing and handling

Cabbages should be stored at 32-36°F, at 90-98% relative humidity.

Sensitive to ethylene: **Yes** Odor-sensitive: **Yes**

Produces ethylene: No Odor-producing: No

Acceptable



Small spots on outer leaves

Not acceptable



Black rot



White rot



Downy mildew

Cantaloupe

Receiving and inspecting

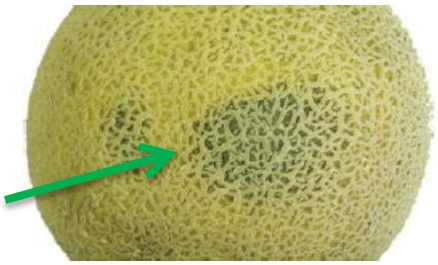
Cantaloupes should be round with good netting or webbing over creamy-colored rind. They have a distinctive aroma and the blossom end will yield to gentle pressure when ripe.

Storing and handling

Cantaloupes should be stored at 36-41°F, at 90-98% relative humidity. Susceptible to freezing; to prevent chill injury, do not store below 30°F.

Sensitive to ethylene: No
Produces ethylene: **Yes**
Odor-sensitive: No
Odor-producing: No

Acceptable

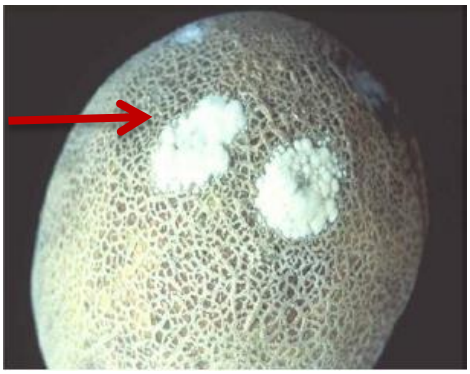


Slight discoloration



Variations in shape (e.g., oval)

Not acceptable



Mold



Decay



Anthracnose

Carrots

Receiving and inspecting

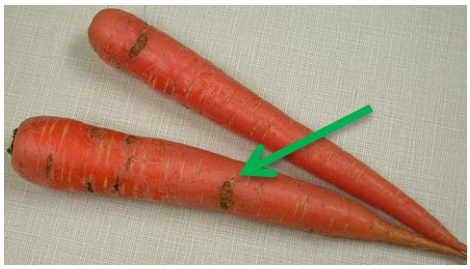
Carrots should have firm, smooth exteriors (i.e., should snap when bent far enough). Color should be vibrant orange to orange-red.

Storing and handling

Carrots should be stored at 33-35°F, at 90-98% relative humidity. Do not store below 30°F.

Sensitive to ethylene: **Yes**
Produces ethylene: No
Odor-sensitive: **Yes**
Odor-producing: No

Acceptable



Spots on outer surface



Odd shapes

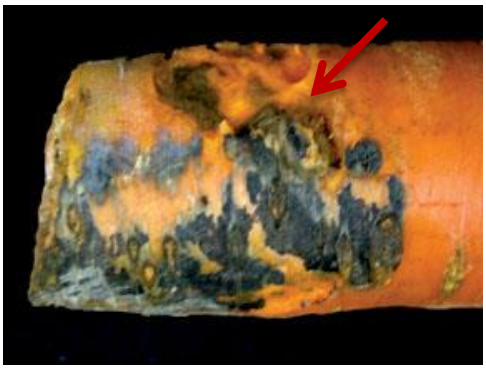
Not acceptable



Rot



Mold



More rot

Cauliflower

Receiving and inspecting

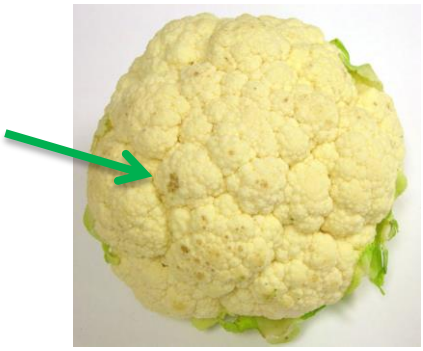
Cauliflower should be firm in texture. Most are white, though there are other color varieties as well.

Storing and handling

Cauliflower should be stored at 32°F at 90-98% relative humidity. Do not store below 31°F to avoid freeze injury. Cauliflower is susceptible to bruising; handle with care and do not drop shipping containers on the floor.

Sensitive to ethylene: **Yes**
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable



Light brown spots are fine as long as cauliflower is still firm



Color variations

Not acceptable



Rot – soft/mushy, discolored or moldy

Celery

Receiving and inspecting

Celery should be firm in texture and not too limp; ribs should snap crisply when bent. Color is green but some yellow is ok.

Storing and handling

Celery should be stored at 32-36°F, 90-98% humidity. Do not store below 30°F.

Sensitive to ethylene: No
Produces ethylene: No
Odor-sensitive: **Yes**
Odor-producing: No

Acceptable



Some yellow is ok



Some brown at base is ok

Not acceptable



Soft and slimy



Moldy

Corn, sweet

Receiving and inspecting

Sweet corn should be firm but kernels not hard and dry like feed corn. Color varies white to deep yellow. It should have fresh green husks with silk ends that are free of decay or worms.

Storing and handling

Corn should be stored at 34-38°F at 95% relative humidity. Do not store below 32°F.

Sensitive to ethylene: No
Produces ethylene: No
Odor-sensitive: **Yes**
Odor-producing: No

Acceptable



Varied colors and odd shaped or missing kernels



Dark silks can be ok (check kernels for moisture)

Not acceptable



Corn worm





Corn smut mold

Cucumbers

Receiving and inspecting

Cucumbers should be firm in texture. Color should be green (or mostly green).

Storing and handling

Cucumbers should be stored at 45-50°F at 85-95% relative humidity. To avoid chill injury, avoid storing below 45°F.

Sensitive to ethylene: **Yes**
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable



Outer blemishes



Slight yellowing

Not acceptable



Rot-puckered and soft (especially common after chill injury)



Moldy

Grapefruit

Receiving and inspecting

Grapefruit should be firm and heavy for its size. Grapefruit may exhibit some regreening of the skin, but that does not affect the internal fruit quality.

Storing and handling

Optimal storage temperature varies by type. CA and AZ: 50-55°F; FL and TX: 50-60°F, 85-95% relative humidity.

Sensitive to ethylene: **Yes**
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable



Slight greenish skin



Some surface blemishes

Not acceptable



Rot



Mold

Lemons/Limes

Receiving and inspecting

Lemons and limes should be firm in texture.

Storing and handling

Lemons and limes should be stored at 45-48°F, 85-95% relative humidity.

Sensitive to ethylene: **Yes** Odor-sensitive: No

Produces ethylene: No Odor-producing: No

Acceptable



Variations in colors are ok



Some surface blemishes are ok

Not acceptable



Diseases or rotting



Moldy

Lettuce

Receiving and inspecting

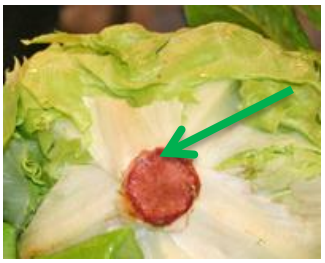
In general, avoid wilted and discolored leaves. For iceberg lettuce, some browning of the core end is natural and occurs from oxidation after lettuce has been harvested and trimmed.

Storing and handling

Lettuce should be stored at 34-36°F, at 90-98% relative humidity. Keep lettuce away from drafts to avoid dehydration.

Sensitive to ethylene: **Yes**
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable



Brown core

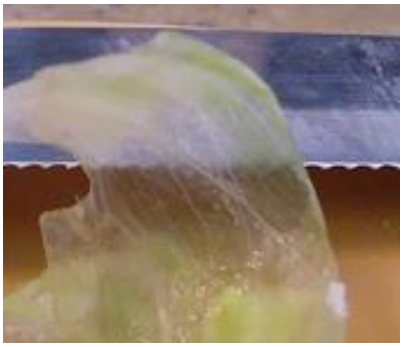


Tear/slight bruising

Not acceptable



Wilted leaves



Translucent leaves (freeze damage)



White mold

Mushrooms

Receiving and inspecting

Mushrooms should have a firm texture and be free of spots. Open veils are not a sign of poor quality, size and color do not affect quality. Some common types are portabella, cremini, white, and oyster.

Storing and handling

Mushrooms should be stored at 32-36°F, at 90-98% relative humidity.

Sensitive to ethylene: No
Produces ethylene: No
Odor-sensitive: **Yes**
Odor-producing: No

Acceptable



Irregular shapes or dirt

Not acceptable



Sliminess or dark spots



Shrivelled or dehydrated

Nectarines

Receiving and inspecting

Nectarines should be firm to slightly soft (ripe), but not overripe (mushy).

Storing and handling

Nectarines should be stored at 32-36°F, 90-98% relative humidity. Do not store below 31°F.

Sensitive to ethylene: **Yes** Odor-sensitive: No

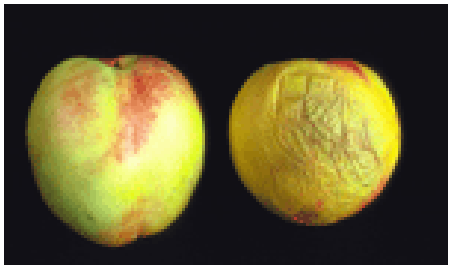
Produces ethylene: **Yes** Odor-producing: No

Acceptable



Slight pitting OK

Not acceptable



Shriveling



Rot, mold

Onions, bulb

Receiving and inspecting

Good quality onions should be firm and hard with short, tight necks and dry papery skin. Slightly loose outer skin is common and should not affect quality.

Storing and handling

Onions should be stored at 40-60°F, at 85-95% relative humidity. For extended storage (longer than 7 days), hold at 32-36°F. Keep out of direct sunlight.

Sensitive to ethylene: **Yes** Odor-sensitive: **Yes**
Produces ethylene: No Odor-producing: **Yes**

Acceptable



Small sprouts



Unusual shape

Not acceptable



Bulb rot



Bacterial soft rot



Neck rot



Sour skin

Oranges

Receiving and inspecting

Oranges should be firm, heavy for size, and have fine-textured skin. Skin color of a ripe orange ranges from orange to greenish-orange. Many oranges go through a regreening process on the tree in which the skin color begins to turn from orange back to green again. Regreening is a natural occurrence and does not affect the flavor quality of the orange.

Storing and handling

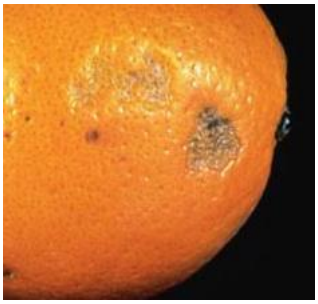
Optimal storage temperature varies by type. FL: 32-34°F; CA: 45-48°F; AZ & TX: 32-48°F, at 85-95% relative humidity.

Sensitive to ethylene: No
Produces ethylene: No
Odor-sensitive: No
Odor-producing: **Yes**

Acceptable



Slightly green oranges

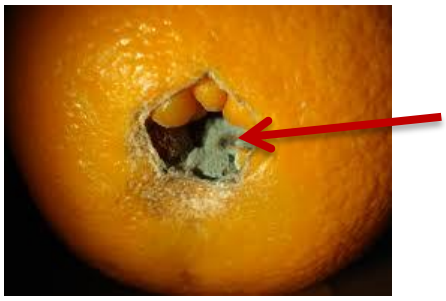


Small spots

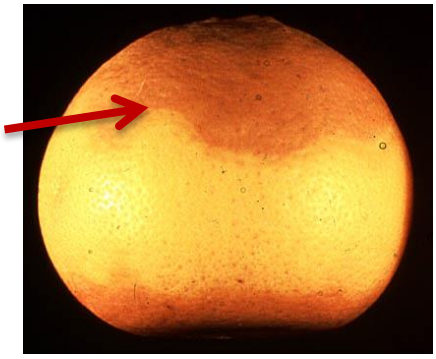
Not acceptable



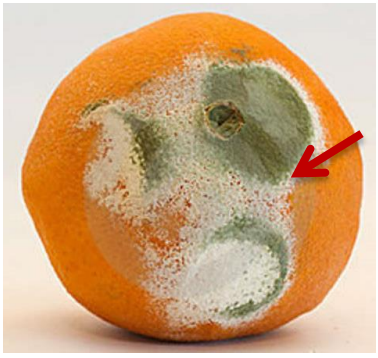
Mold



Mold in navel



Stem end decay



More mold (green)

Peaches

Receiving and inspecting

Peaches should be firm to slightly soft (ripe), but not overripe (mushy).

Storing and handling

Peaches should be stored at 32-36°F, 90-98% humidity. Do not store below 31°F.

Sensitive to ethylene: **Yes** Odor-sensitive: No

Produces ethylene: **Yes** Odor-producing: No

Acceptable



Skin discoloration (inking) OK



Surface scarring OK

Not acceptable



Severe bruising



Rot, mold

Pears

Receiving and inspecting

Pears should be at least fairly firm in texture.

Storing and handling

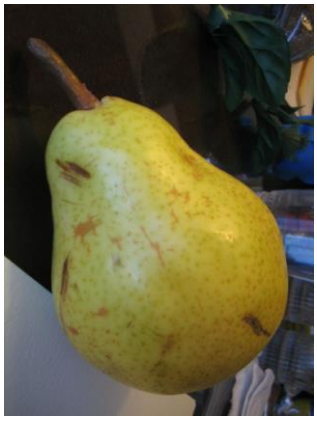
Pears should be stored at 32°F at 90-98% relative humidity. Do not store below 29°F to avoid freeze injury. Ripen at 60-70°F.

Sensitive to ethylene: No
Produces ethylene: **Yes**
Odor-sensitive: **Yes**
Odor-producing: **Yes**

Acceptable



Variations in colors and green unripe



Some surface blemishes and slight bruising

Not acceptable



Heavy bruising and mushiness



Moldy

Plums

Receiving and inspecting

Plums should be firm to slightly soft (ripe), but not overripe (mushy).

Storing and handling

Plums should be stored at 32-36°F. Do not store below 31°F.

Sensitive to ethylene: **Yes** Odor-sensitive: No

Produces ethylene: **Yes** Odor-producing: No

Acceptable



Skin discoloration, surface scarring OK

Not acceptable



Shriveling



Rot, mold

Potatoes

Receiving and inspecting

All potato varieties should be fairly clean, firm, and smooth. Avoid potatoes with wrinkled skins, soft dark spots, or green appearance.

Storing and handling

Potatoes should be stored at 45-50°F, at 85-95% relative humidity. Susceptible to freezing; to prevent chill injury, do not store below 42°F.

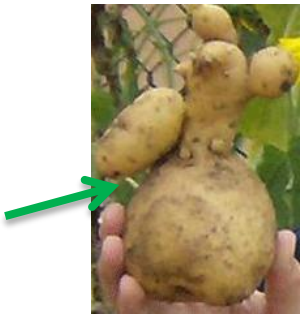
Sensitive to ethylene: No
Produces ethylene: No

Odor-sensitive: **Yes**
Odor-producing: **Yes**

Acceptable



Small peepers (sprouts)



Odd lumps

Not acceptable



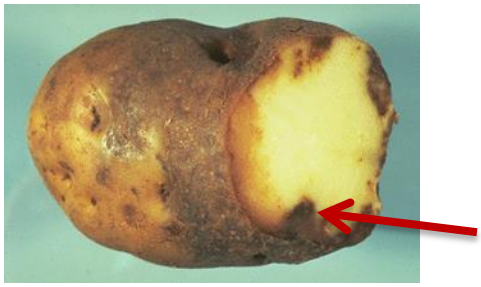
Moldy cut



Green potato (solanine)



Common scab



Late blight

Squash, hard-shell

Note: Hard-sell squash types are generally larger than soft-shell types and have hard, inedible rinds. Major types include acorn, buttercup, kabocha, and spaghetti.

Receiving and inspecting

Squash should be firm in texture.

Storing and handling

Hard-shell squash should be stored at 50-55°F at 85-95% relative humidity. To avoid chill injury, avoid storing below 50°F.

Sensitive to ethylene: **Yes**
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable



There are many varieties—very similar needs in terms of handling and storage



Discoloration, slight surface blemishes

Not acceptable



Start of decay



Moldy and rotting

Squash, soft-shell

Note: Soft-shell squash are also known as summer squash. Common varieties include zucchini, straightneck (yellow squash), crookneck, and pattypan.

Receiving and inspecting

Squash should be firm in texture with shiny, tender rinds.

Storing and handling

Soft-shell squash should be stored at 41-50°F at 85-95% relative humidity. To avoid chill injury, avoid storing below 41°F.

Sensitive to ethylene: **Yes**
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable



Irregular shapes



Discoloration, slight surface blemishes

Not acceptable



Blossom end rot



Mold

Strawberries

Receiving and inspecting

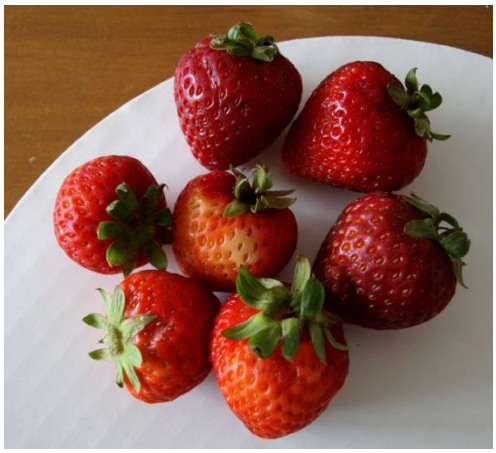
Strawberries should be firm in texture. Color should be red, though some lighter color is ok. Avoid strawberries that are green, or those that appear mushy, shriveled, or leaky.

Storing and handling

Strawberries should be stored at 32-34°F at 90-98% relative humidity. Berries should not be rinsed until just before they are used. Temperatures above 36°F will accelerate the growth of gray mold.

Sensitive to ethylene: No
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable



Red in color, though some lightness is fine



Odd shapes

Not acceptable



Rot-mushy and discolored



Moldy

Sweet potatoes

Receiving and inspecting

Good quality sweet potatoes should be firm with smooth skins.

Storing and handling

Sweet potatoes should be stored at 55-60°F, at 85-95% relative humidity. Store in well-ventilated area.

Sensitive to ethylene: **Yes**
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable



Odd shapes



Small sprouts

Not acceptable



Mold



Chill damage (soft spots)

Tomatoes

Receiving and inspecting

Good quality tomatoes should have bright, shiny skin and firm flesh.

Storing and handling

Ripe (nearly full red) tomatoes should be stored at 55-60°F; less ripe tomatoes should be stored at 62-68°F. 85-95% relative humidity is ideal.

Sensitive to ethylene: No
Produces ethylene: No
Odor-sensitive: No
Odor-producing: No

Acceptable

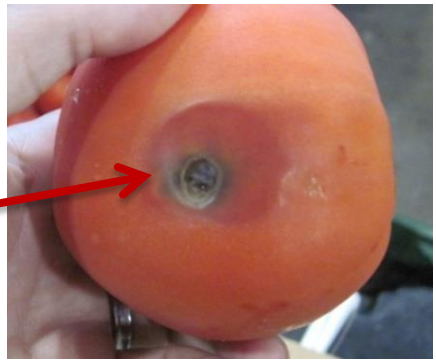


Slight dent



Greenish tint

Not acceptable



Moldy bruise



Black rot



Late blight



Mold and bruising

Watermelon

Receiving and inspecting

Watermelons should be firm. Watermelons do not ripen after harvesting; a ripe watermelon will produce a distinct hollow sound when thumped.

Storing and handling

Watermelons should be stored at 50-60°F, at 85-95% relative humidity. Susceptible to freezing; to prevent chill injury, avoid storing below 41°F.

Sensitive to ethylene: **Yes** Odor-sensitive: No
Produces ethylene: No Odor-producing: No

Acceptable



White/yellow patch



Small spots

Not acceptable



Decay



Anthracnose



Fruit blotch

Appendix

Inspection form

Inbound Produce Inspection

Complete this form for any produce load arriving at the food bank. Inspect truck and product ***before*** unloading from truck. If product is damaged, infested or out of temp range, or truck is unacceptable, ***stop unloading truck*** and reject load.

Inspected by: _____ Date: _____

Donor: _____ Time: _____

Carrier: _____

Receipt Ref Number: _____

Product type and quantity: _____

Vehicle/Trailer Condition	***Yes/ No/NA***	***Comments***
Free of damage		
Clean (free of mold, etc)		
Bill of Lading (BOL) present		
Seal unbroken		

Product Condition	***Yes/ No/ NA***	***Comments***
Free of unacceptable spoilage, odors, etc.		
Free of apparent pest activity (insects, rodents)		
Free of damage		
Product count(s) match BOL and quantity ordered		

Source	***Temperature***	***Acceptable?***	***Comments***
Truck monitor			
Temperature recorder			
Product sample 1			
Product sample 2			
Product sample 3			

If product needs to be rejected:

1. Describe the reason for rejection on the back of this form.
2. Do not return any paperwork to the driver or let the truck leave.
3. If this is a Feeding America Choice System produce load, refer to their instructions for handling rejected produce loads.
4. The appropriate operations supervisor should contact the donor for handling instructions and note the resolution steps on the back of this form (including name, phone number of contact person and date/time of conversation).

If load is accepted:

1. Keep this completed form and copy of signed BOL with any other receiving documents.
2. Give this completed form, signed BOL, any other receiving documents and copy of the receipt to the appropriate operations supervisor.

Inspector signature: _____

Complete these sections if rejecting the load.

Reason(s) for rejecting the load:

Details of donor conversation and resolution steps to be taken

Contact name and phone number:

Date/Time of conversation:

Details:

Choice Bad Load Resolution Process

Scenario: A bad produce load arrives at your dock.

Solution: Truck must remain at your dock.

YOU MUST NOTIFY FEEDING AMERICA IMMEDIATELY TO ENSURE THESE LOADS ARE HANDLED PER FEDERAL PACA REGULATIONS AND TO ENSURE PROPER CREDIT.
NO EXCEPTIONS.

Step 1: **Call Feeding America immediately** at 1.877.344.8070 (Shared Services) or 312-547-9404 (Mark Thomas, National Produce Program Operations Manager). Or email Feeding America at donatetofa@feedingamerica.org or mthomas@feedingamerica.org.

Step 2: Check to see if the refrigerated unit on the truck is running. Examine the condition of the trailer and make note of any holes in the trailer on either the side, bottom, back, or the roof area. A damaged trailer can lead to improper refrigeration and temperature controls.

Step 3: You will need to off-load a few of the pallets of product and do the following: (1) Pulp (take temperature readings) the product from different location points inside the trailer. (2) Photograph the product on the trailer, off the trailer, standing alone and cut open. Check if the product is infested with bugs. If so, take pictures of that too. Send photos via email to Feeding America immediately.

Step 4: Reload truck and close up trailer.

Step 5: Before returning bills or load manifest to the driver, you must note damage on the bills. Use terminology similar to this: LOAD REJECTED DUE TO DAMAGE. WAITING FOR DISPOSITION FROM THE BUYING OFFICE.

Step 6: Wait for Feeding America to call back and **DO NOT SEND TRUCK AWAY**. Additionally, if it is determined that the load is going to be dumped, we will need your assistance to find a local landfill that accepts bad produce to direct the driver to--this is key because not all landfills accept bad produce. If you have contact information for the local landfill readily available, that will speed up the process.

Step 7: Feeding America will advise and work with you to resolve this problem, but again, **DO NOT SEND TRUCK AWAY** until we have a joint resolution and a next-step action plan.

Things to remember:

In many cases these loads are U.S. Number 2 grade produce (grade 1 is available at the grocery store). Please keep in mind that there could be some discoloration, deformation, and exterior/surface blemishes that are common reasons for the grading difference. For example, an apple may have what is referred to in the produce industry as “limb or branch rub” meaning that the apple was rubbed by blowing branches during a certain point in their development leaving a bark-like section due to the fruit’s continued growth

and healing process—essentially creating a “scab.” The interior fruit quality is not poor, but this surface blemish causes the fruit to be effectively “unmarketable” to the commercial fresh market. Even though it may lack the cosmetically pristine look on the outside, it does not mean that it is not good quality in the inside. In addition, grade 2 produce might have 1 to 2 percent decay (this is common industry standard approval guidelines).

Any further questions or comments about this procedure should be referred to Mark Thomas, Produce Program Operations Manager, by email at mthomas@feedingamerica.org or by phone at 312.641.6606. Your cooperation with these rare cases of bad produce arrival is greatly appreciated.

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Produce labeling form instructions

The following templates can be used to label produce while it is at the food bank, after receiving and before it is loaded for distribution. It is meant to help capture relevant handling information (like type, quantity, expiration date) and make it easy to identify at a glance if it has been sorted or not. Using this labeling system, volunteers and staff immediately know what needs to be sorted and in what priority (yellow tags by date), and staff know what is available to send out to agencies (green by date).

Using the yellow side indicates that the produce has not yet been sorted, while the green side indicates that it has been sorted already.

Instructions for use:

1. Print the following two templates on one sheet of paper, yellow on one side and green on the other.
2. Laminate the sheet.
3. After produce is received, use dry erase marker to fill out the yellow side with relevant information. Date is especially important (expiration date for a FEFO inventory management system, arrival date for a FIFO system).
4. Use a binder clip to fasten the filled-out sheet to an item on the pallet with the yellow side facing out.
5. After the produce is sorted, flip the tag around and copy the info to the green side. Clip to pallet.
6. Remove before the produce is loaded and reuse as needed.

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Produce labeling form (FRONT, before volunteer sort)

Expiration date:_____

Arrival date:_____

Product:_____

Quantity:_____

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Produce labeling form (BACK, after volunteer sort)

Expiration date:_____

Sort date:_____

Product:_____

Quantity:_____

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Produce lifespan estimation method (from Frank Bonner, formerly at St. Mary's Food Bank in Phoenix, AZ)

Product lifespan estimation:

The inspection process is conducted by assessing Condition and Temperature. You will need to determine the percentage of decay or damage on each carton sampled **(using best judgment practice)** and record that percentage along with general description of findings. Each percentage will be totaled and an overall percentage will be determined.

The same basic process will be used to determine percentages on temperatures. Each overall percentage is equal to one point. Example: 20% = 20 points. Add the two numbers together to obtain your overall score.

***Example of Inspection #1*:** 10 pallets of cantaloupes come into the food bank; during your inspection you notice the following. All cartons are straight and show no damage externally, but about 20% of the cantaloupes you inspected have minimal or some sunken places and appear sound. There is no sign of mold or decay visible on the melons. When you cut (generally 1 to 3 melons per pallet if suspect) a few of the melons showed some slight translucent discoloration in the flesh near or under the external sunken places. The pulp temperatures (taken from the sample melons) are reading 40 degrees consistently.

Condition is good no visible decay, sunken area's 20%..... score = 20

Temperature is only 4 degrees above standards……..…….… score = 4

Total score = 24

Result: Product recommended to be distributed within 4 days for maximum usage

Example of Inspection #2: 10 pallets of cantaloupes come into the food bank; during your inspection you notice the following. Most cartons are broken and show damage externally; about 60% of the cantaloupes you inspected have multiple sunken places and some mold is present sporadically through the carton. There are also consistent signs of decay visible on the vine end (belly button). When you cut (generally 1 to 3 melons per pallet if suspect) a sample of the melons, there is discoloration in the flesh near or under the external sunken places. The pulp temperatures (taken from the sample melons) are reading 73 degrees consistently.

Condition is poor, visible decay, sunken area's 60%..... score = 60

Temperature is 35 degrees above standards…… score = 35

Total score = 95

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Result: Product should be disposed of, and not distributed.

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Banana ripening guide

Suggested Guide for Banana Ripening

Pulp Temperatures °F

Day	1	2	3	4	5	6	7	8
4 Day Schedule	ETHYLENE 64°	64°	62°	60°				
5 Day Schedule	ETHYLENE 62°	62°	62°	62°	60°			
6 Day Schedule	ETHYLENE 62°	62°	60°	60°	60°	58°		
7 Day Schedule	ETHYLENE 60°	60°	60°	60°	60°	58°	58°	
8 Day Schedule	ETHYLENE 58°	58°	58°	58°	58°	58°	58°	58°

Color Index No.	1	2	3	4	5	6	7
Peel Color	Green	Green – trace of yellow	More green than yellow	More yellow than green	Green tip	All yellow	Yellow – flecked with brown

Notes:

- Temperatures are °F
- Temperatures are PULP not AIR
- Proper temperature, humidity, time, air circulation, mature bananas and ethylene are required for ripening.
- Use the Super-Ripening Center® and Ethy-Gen® II to hasten ripening.
- Maintain 100-150 ppm of ethylene until color breaks.
- After 24 hour ripening initiation period, vent room for 15-20 minutes with fan on.
- For delayed shipment hold at 58°F.

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