Fuel *with* Color

A Guide to School Fruit & Vegetable Bars







SECTION 1

Controlling Quality: Purchasing, Storage, & Safety



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NEBRASKA DEPARTMENT OF EDUCATION

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Purchasing

Purchasing is the foundation of a successful fruit and vegetable bar. Choosing high-quality produce, at the best value, ensures safe, colorful, and appealing offerings for students every day.

Key Steps in the Purchasing Process

Use a systematic process to help maintain consistent quality and cost control:

- Plan menus and determine daily fruit and vegetable needs.
- Identify products and estimate quantities required.
- Develop clear quality standards for each item.
- Evaluate storage, preparation space, and labor capacity.
- Analyze vendors and compare pricing.
  - Ensure vendors fully understand and will follow the Buy American Provision requirements to the maximum extent practicable.
- Select vendors and place accurate, timely orders.
- Receive and inspect deliveries.
- Store, prepare, and serve food safely.

Resource tip:

See the "USDA Food Buying Guide" and "Menu Planner for School Meals" for detailed forecasting and portion planning tools.



USDA Food Buying Guide

foodbuyingguide.fns.usda.gov



USDA Menu Planner for School Meals

fns.usda.gov/tn/menu-planner-school-meals

NDE Buy American Provision Resources

education.ne.gov/ns/forms-resources/national-school-lunch-program/buy-american-provision

Determining What & How Much to Buy

When planning purchases, consider both menu and operational needs:

- **Menu:** What fruits and vegetables will be served on the bar this week?
- **Recipes:** How much of each ingredient is required?
- **Inventory:** What is already on hand or on order?
- **Yields:** How many servings does each item provide? (See USDA Food Buying Guide for information.)
- **Consumption rate:** How much product do students typically eat?
- **Storage:** Do you have enough dry and refrigerated space for incoming stock?
- **Labor and equipment:** Do you have staff and tools to prepare and portion produce efficiently?
- **Production schedule:** Are there any timing conflicts with other menu items?

Accurate forecasting minimizes waste and ensures fresh, colorful options every day.



Resource tip:

See Appendix 1 "Nebraska Harvest of the Month (HOM) Seasonality Poster" for information on seasonal produce availability.

Developing Quality Standards

Setting clear quality standards ensures consistent produce quality across vendors and deliveries. Provide vendors with written product descriptions that include:

- Acceptable quality of raw produce (e.g., firm, brightly colored, free of blemishes)
- Ripeness level at delivery
- Preferred packaging and processing method (e.g., bulk, pre-cut, bagged)
- USDA grade or product packed to meet USDA grade standards (e.g., U.S. No. 1)
- Size, variety, and form (e.g., diced, sliced, whole)
- Delivery expectations (frequency, shipping temperature, location)

Product description example

APPLES

- Firm texture
- Good color
- Free from bruising or decay
- Delivered at appropriate refrigerated temperature



For items such as bananas, consider ordering varying maturity levels to ensure usability over several service days.

RESOURCES FOR SETTING PRODUCE STANDARDS

The resources on the next page provide helpful guidance on product specifications, quality indicators, storage considerations, and common school foodservice applications. These resources are intended as references and are not all-inclusive. Availability, product form, and handling practices may vary by supplier, season, and district operations.

USDA Foods in Schools – Product Information Sheets

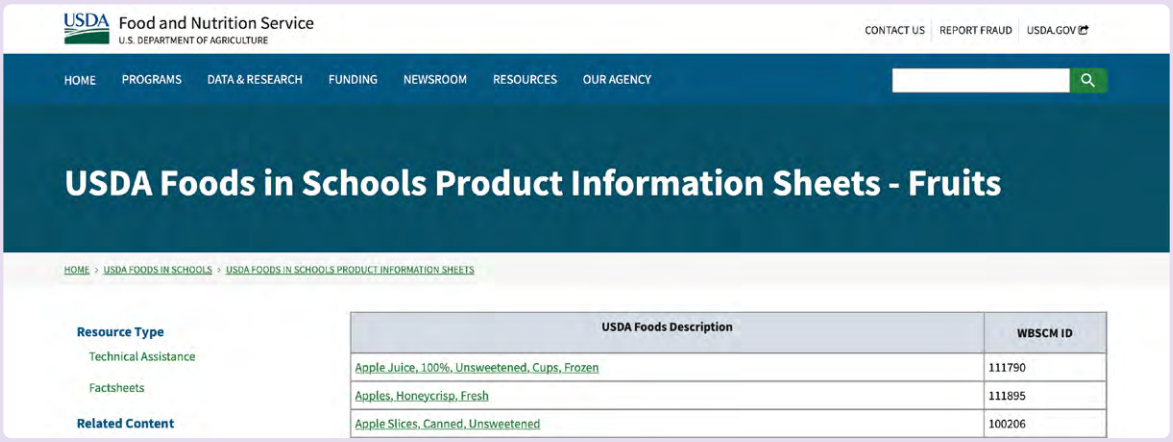
Use these sheets for fruits and vegetables to determine product form, pack size, storage guidance, and typical school applications.

Fruits

fns.usda.gov/usda-fis/product-information-sheets/fruits

Vegetables

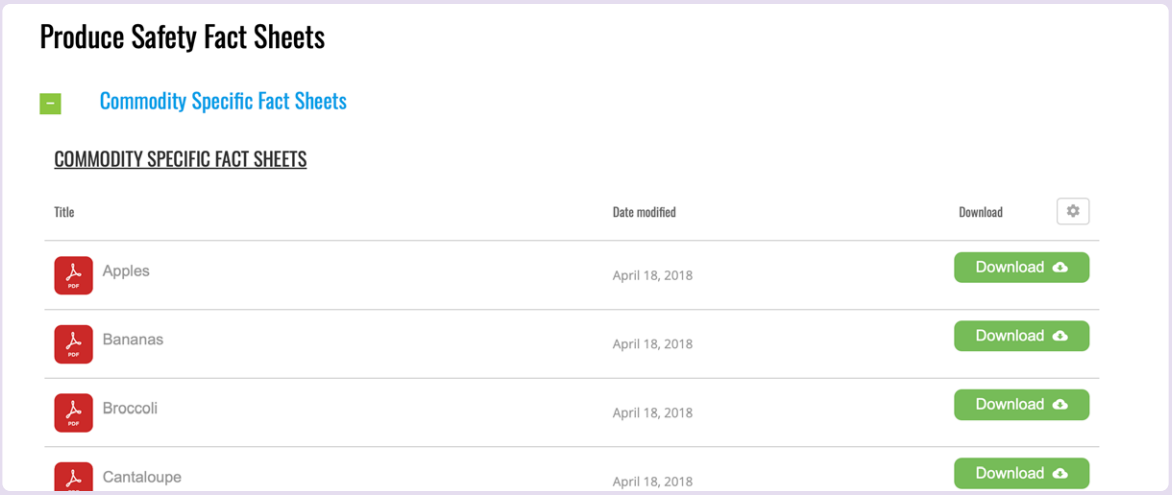
fns.usda.gov/usda-fis/product-information-sheets/vegetables



ICN Commodity Fact Sheets

Use these fact sheets to identify desirable produce characteristics, recognize defects, and apply safe handling and storage practices.

theicn.org/icn-resources-a-z/produce-safety-resources



Purchasing Options

Select purchasing options that balance quality, cost, and reliability.

Distributors: Most school foodservice programs purchase through broadline or produce distributors. Request separate delivery and service charges for accurate cost comparisons.

Co-ops or district purchasing groups: Joining cooperatives increases buying power and may reduce prices.

Farm-to-school and local vendors: Purchasing from local farmers offers fresher produce and supports the local economy. GAP (Good Agricultural Practices) certification is voluntary unless required by the district, and many small and mid-size producers may not be certified. Vendors should follow safe agricultural and food handling practices and provide documentation of their farm food safety plan upon request.

Department of Defense Fresh Fruit and Vegetable Program (DoD Fresh): This program offers access to local and regional produce using USDA entitlement funds.

Wholesale clubs or retail sources: Consider using for small orders or special events when delivery options are limited.

QUALITY & COST BALANCE

- Select produce that meets grade and ripeness standards, not just lowest price.
- Compare Nutrition Facts labels (see Appendix 2) and packaging sizes to ensure the best overall value.
- Evaluate vendors regularly for consistency, freshness, and delivery accuracy.



Fresh-Cut Produce

Fresh-cut (or pre-cut) produce refers to any fresh fruit or vegetable that has been peeled, sliced, chopped, or otherwise processed from its original whole form. These products are ready to use, saving prep time — but they require careful handling to maintain quality and food safety.

Advantages of Fresh-Cut Produce

- **Labor savings:** Minimal prep time needed before service
- **Consistent yield:** Portion-controlled with little waste
- **Reduced waste and disposal:** Entire product is usable
- **Uniform appearance**: Consistent cuts and quality for students
- **Space efficiency**: Easier to store and manage than bulky raw produce
- **Predictable supply:** Available year-round
- **Improved efficiency:** Reduces the need for cutting equipment and advanced prep training

Tip

Fresh-cut products are ideal for fruit and vegetable bars where presentation, consistency, and safety are priorities.

Cost Considerations

While pre-cut products are more expensive per pound than whole produce, they may save time and reduce waste. To evaluate cost-effectiveness, calculate the true portion cost, including:

- Labor time saved on washing, peeling, and cutting
- Yield differences between pre-cut and whole forms
- Disposal and storage savings
- Delivery and handling fees

Request itemized vendor pricing that separates product and delivery costs to better compare total expenses.

Example

Fresh-cut melon costs more per pound than whole melons, but when accounting for peel waste, cutting time, and safety compliance, the total cost per serving may be equal or lower.



Food Safety for Fresh-Cut Produce

Pre-cut produce requires strict cold-chain management to prevent bacterial growth.

KEY SAFETY PRACTICES

Purchase fresh-cut produce from reputable, licensed vendors

Choose vendors who follow Good Manufacturing Practices (GMP) and have a written HACCP or Qualified Through Verification (QTV) plan.

Inspect deliveries immediately

Accept only products received between 32°F to 41°F and reject packages that are leaking, swollen, warm, or otherwise damaged.

Check packaging integrity

Ensure containers are clean, sturdy, and clearly labeled with production and “use by” dates.

Maintain refrigeration

Store fresh-cut produce at 41°F or below at all times.

Prevent cross-contamination

Store fresh-cut produce away from raw meat, poultry, or seafood.

Verify and manage shelf life

Use vendor documentation to estimate remaining shelf life based on transit and distributor storage time, and use products within the stated shelf life (typically 7 to 10 days for sealed packages, shorter after opening).

Example

A bagged salad labeled for 14 days may have only 4 days left if it spent 3 days in shipping, 3 days at the distributor, and 4 days in school storage.

Important: Shelf life can drop by 50% if products are exposed to temperatures above 41°F for more than two hours.

Do not rewash pre-washed or triple-washed produce labeled “ready-to-eat”

Rewashing may introduce bacteria and increase the risk of contamination. Follow manufacturer instructions.

Storage & Quality Control

Proper storage keeps fruits and vegetables safe, fresh, and appealing for students. Every step — from delivery to service — plays a role in preserving quality and extending shelf life.

Storage Basics

Keep it cold

Store most produce between 32°F to 41°F. (See page 16 for ideal storage temperatures.)

Allow air circulation

Keep produce off the floor and away from walls. Avoid overpacking boxes or refrigerators to ensure even cooling.

Separate strong odors

Store fragrant items, such as onions, garlic, and green onions, in covered containers or separate areas to prevent odor transfer.

Use shelving order wisely

- Store ready-to-eat produce above raw meat or poultry.
- Store produce that needs colder temperatures toward the back of the fridge/cooler or on bottom shelves.
- Store produce that tolerates warmer temperatures near the door or on higher shelves.

Store room-temperature items properly

Keep items such as bananas, tomatoes, and whole potatoes in a cool, well-ventilated area (60°F to 70°F).

Do not wash produce before storage

Excess moisture can promote spoilage or mold growth. Wash produce just before preparation or service.

HOW TO PROPERLY STORE FOODS

See the following figure for proper food storage practices, especially in kitchens with limited refrigeration space.

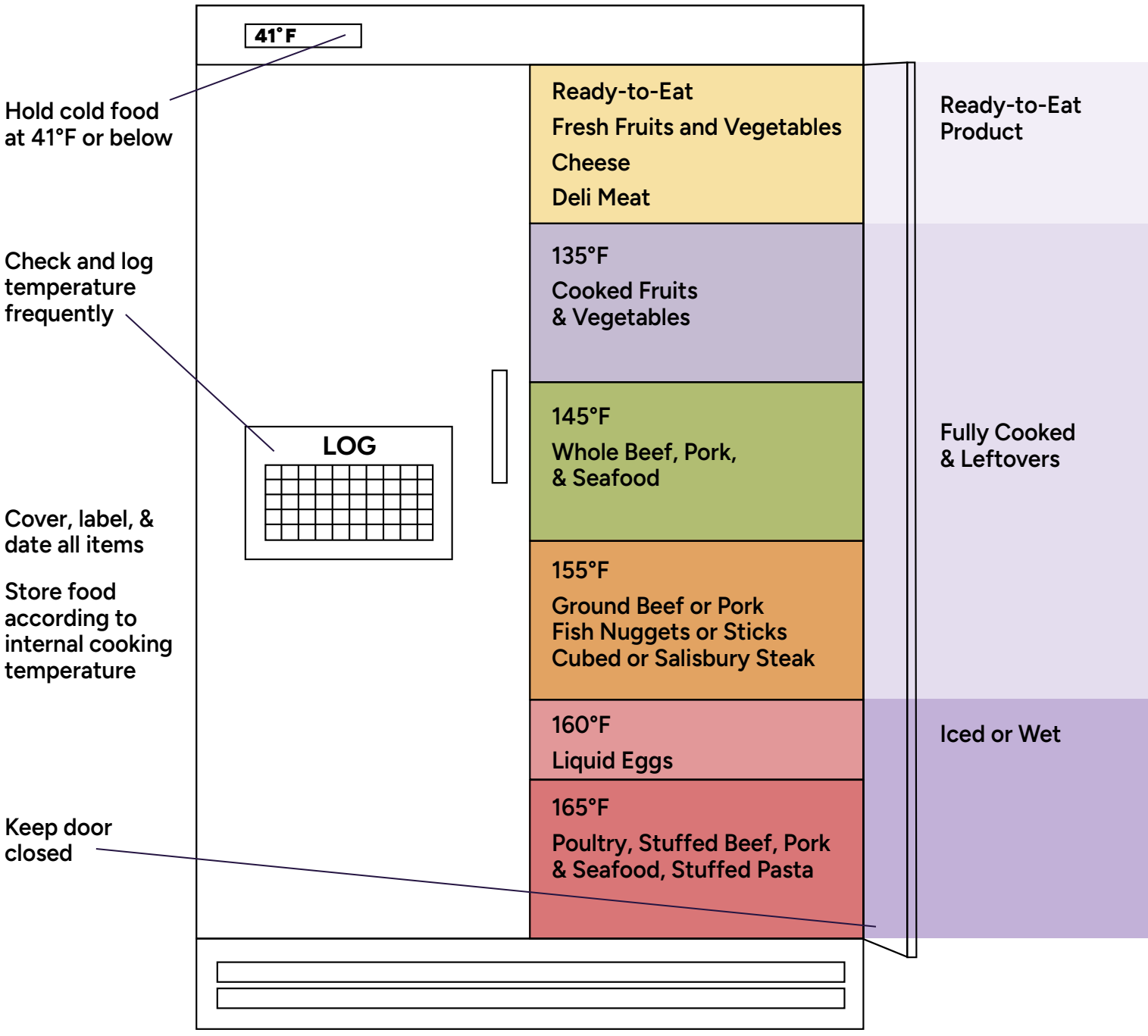


Figure 1-1. How to Properly Store Foods

Source: USDA Produce Safety University; PSU-receiving-and-storage.pptx



Ripening & Quality Management

Ripen, then refrigerate when appropriate

Ripen avocados, kiwifruit, nectarines, peaches, pears, and plums at room temperature in a clean, air-conditioned area (not above 70°F) before moving them to refrigeration.

Do not refrigerate

Never refrigerate bananas or whole tomatoes — cold storage causes browning, texture damage, and flavor loss.



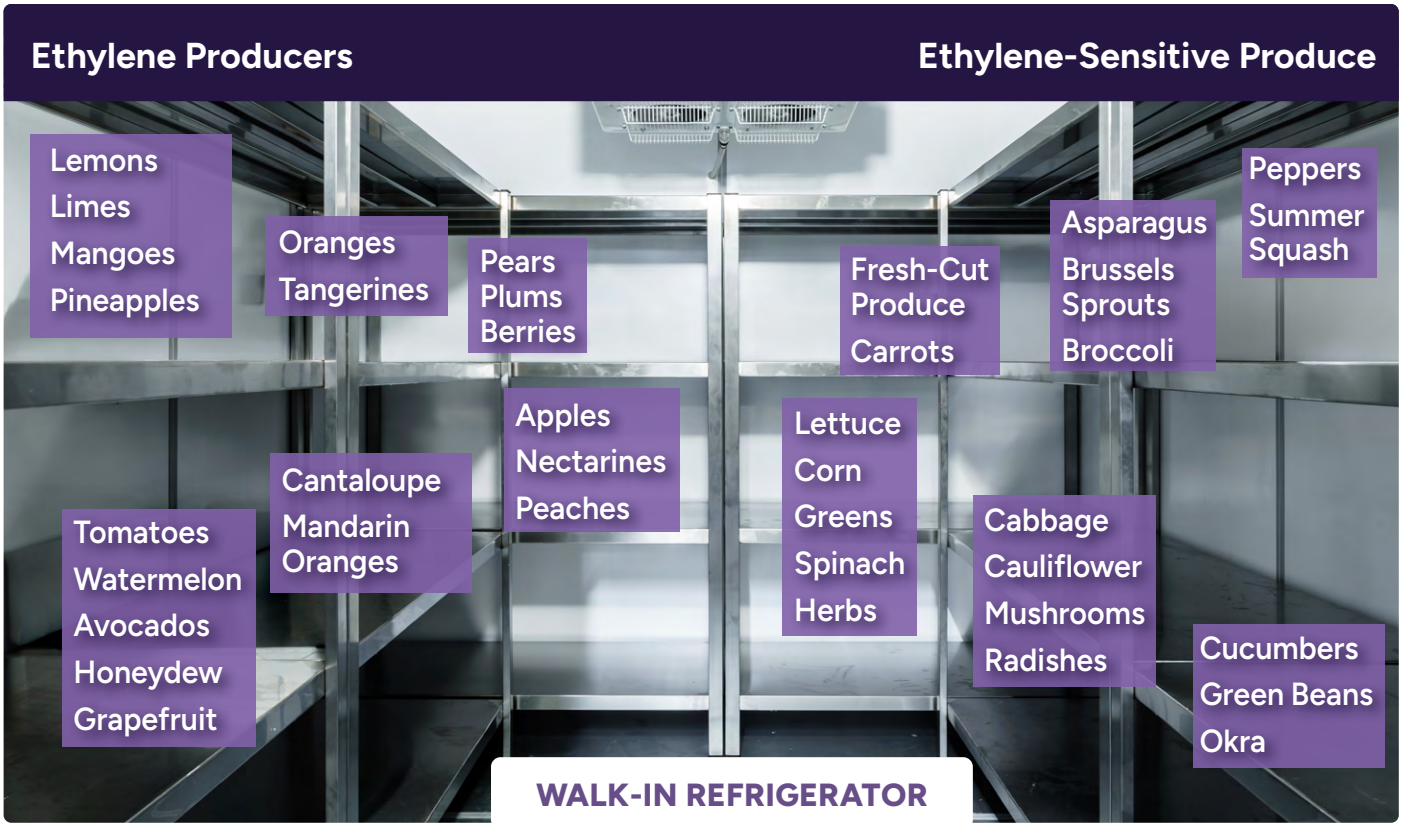


Figure 1-2. Managing Ethylene-Producing and Ethylene-Sensitive Produce
Source: USDA Food and Nutrition Service. Produce Storage and Handling Guide

Managing Ethylene Exposure

- Separate ethylene-producing fruits from ethylene-sensitive vegetables to prevent premature ripening or spoilage. (See Figure 1-2 for examples and walk-in refrigerator storage guidance.)
- Use ethylene-sensitive items within a day or two of receipt if separation is not possible.
- Consider ethylene scrubbers or filters when storing large quantities for several days.

WHEN QUALITY DECLINES

- Watch for signs such as yellowing, softening, or off-odors.
- Check with your vendor — damage may have occurred before delivery.
- Use the product quickly or repurpose it if still safe and acceptable.
- Increase delivery frequency to reduce holding time and maintain freshness.

Ideal Storage Temperatures

32° TO 40°

- Apples
- Apricots
- Artichokes
- Asparagus
- Beets
- Berries
- Broccoli
- Brussels sprouts
- Cabbage
- Cantaloupe
- Carambola
- Carrots
- Cauliflower
- Celery
- Cherries
- Coconuts
- Corn
- Cranberries
- Garlic
- Grapes
- Greens
- Green onions
- Herbs (other than basil & oregano)
- Iceberg lettuce
- Kale
- Kiwifruit
- All leaf lettuce
- Mushrooms
- Nectarines
- Onions
- Oranges (Florida & Texas)
- Parsley
- Parsnips
- Peaches
- Pears (ripe)
- Peas
- Pineapple (fresh-cut)
- Plums
- Radishes
- Rhubarb
- Rutabagas
- Spinach
- Sprouts
- Strawberries
- Turnips
- Watercress

40° TO 50°

- Avocado (ripe)
- Basil (fresh)
- Beans
- Cucumbers
- Eggplant
- Ginger root
- Honeydews
- Jicama
- Lemons
- Mandarins
- Melons
- Okra
- Oranges (California)
- Oregano (fresh)
- Papaya
- Peppers
- Pineapples
- Potatoes
- Squash (summer)
- Tomatoes (ripe)*

LEAVE OUT OF COLD ROOM

- Avocados (unripe)
- Bananas
- Grapefruit
- Limes
- Mangos
- Pears (unripe)
- Plantains
- Pumpkins
- Shallots
- Squash (winter)
- Sweet potatoes
- Tomatoes (green)
- Watermelons (whole)

Source: PMA Foodservice Produce Reference Manual, Postharvest Technology - University of California - 1992

Note: *Will lose flavor at this temperature during prolonged storage.

Food Safety

Safe fruit and vegetable service depends on how food is purchased, received, stored, and managed in the school environment. This section provides training resources and step-by-step safety checklists focused on purchasing, receiving, and storing to support consistent food safety and quality in school kitchens.

Food Safety Checklists: Purchasing, Receiving, & Storing

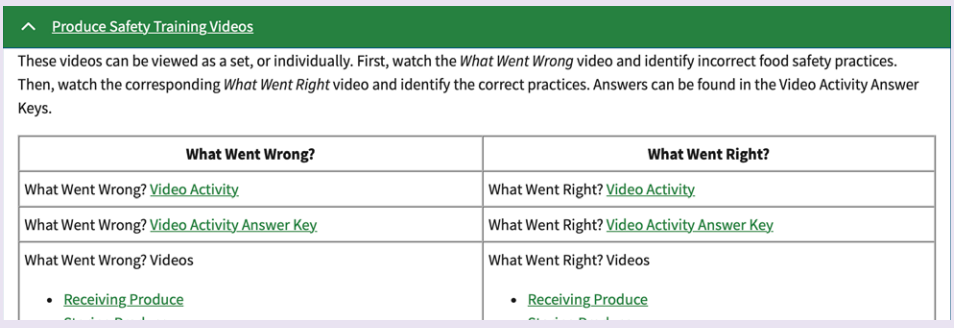
Checklist 1: Purchasing & Vendor Approval

- Products are purchased only from approved, licensed vendors.
- Vendors follow appropriate food safety programs such as HACCP, GAP (Good Agricultural Practices), or GMP (Good Manufacturing Practices), as applicable.
- Quality standards are clearly defined in purchasing documents.
- Delivery temperature expectations are specified in purchasing specifications.
- Vendor performance is reviewed regularly for quality and safety.

USDA's Produce Safety Training Videos

On the USDA's Produce Safety Resources page, training videos are available under the "Produce Safety Training Videos" tab to support safe food handling practices related to receiving, storing, preparing, and serving produce.

fns.usda.gov/fs/produce-safety/resources



Produce Safety Training Videos

These videos can be viewed as a set, or individually. First, watch the *What Went Wrong* video and identify incorrect food safety practices. Then, watch the corresponding *What Went Right* video and identify the correct practices. Answers can be found in the Video Activity Answer Keys.

What Went Wrong?	What Went Right?
What Went Wrong? Video Activity	What Went Right? Video Activity
What Went Wrong? Video Activity Answer Key	What Went Right? Video Activity Answer Key
What Went Wrong? Videos • Receiving Produce	What Went Right? Videos • Receiving Produce

Checklist 2: Receiving Fresh Produce

- Deliveries arrive when trained staff are available to inspect.
- Refrigerated items arrive between 32°F to 40°F.
- Internal temperature is checked using a stem-type thermometer.
- Temperature is taken between bags or cases, not just air temperature.
- If thermometer probing damages product, that package is used first.
- Packaging is intact (no leaks, dents, swelling, or signs of temperature abuse).
- Product labels and dates are verified.
- Random items throughout the case are inspected, not just the top layer.
- Unsafe, damaged, or unacceptable products are refused according to district procedures.

Checklist 3: Storage & Inventory Control

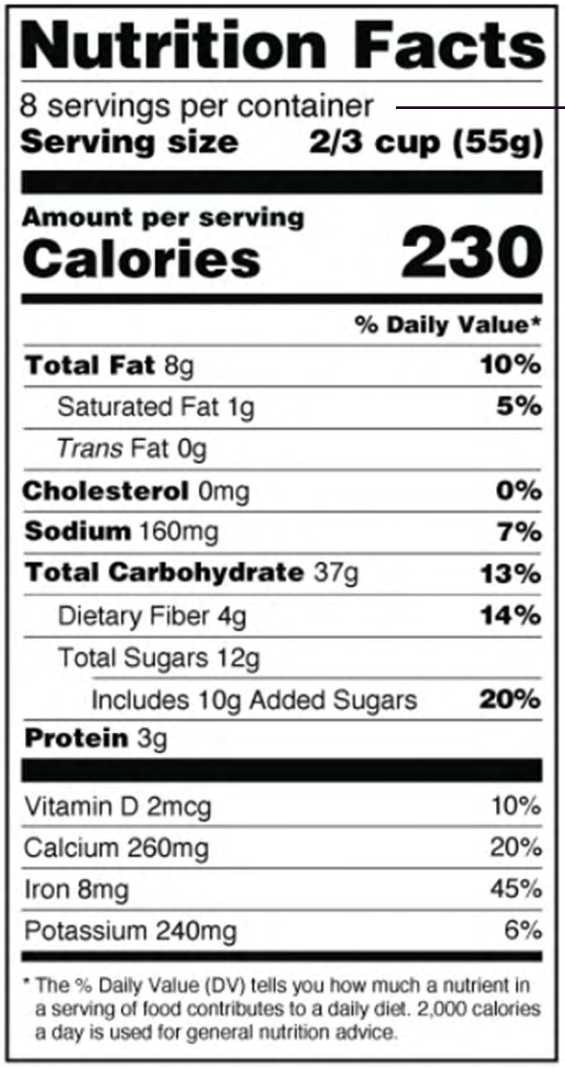
- Produce is dated upon receipt and FIFO inventory rotation is followed.
- Refrigerated produce is stored immediately after delivery.
- Refrigeration is maintained at 41°F or below.
- Refrigerated produce is stored between 34°F to 36°F when possible (for quality).
- Produce is not frozen unless product specifications allow.
- Ready-to-eat produce is stored above raw meat, poultry, or seafood.
- Ethylene-producing and ethylene-sensitive items are separated when possible.
- Produce is stored off the floor and away from walls.
- Good air circulation is maintained (coolers are not overpacked).

Appendices

Appendix 1. Nebraska Harvest of the Month (HOM) Seasonality Poster



Appendix 2. Nutrition Facts Label



Nutrition Facts

8 servings per container

Serving size **2/3 cup (55g)**

Amount per serving

Calories **230**

	% Daily Value*
Total Fat 8g	**10%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**13%**
Dietary Fiber 4g	**14%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 240mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Servings Per Container shows the total number of servings in the entire food package or container.

Serving Size is based on the amount of food that is customarily eaten at one time and is not a recommendation of how much to eat or drink. The nutrition information listed on the Nutrition Facts label is usually based on one serving of the food; however, some containers may also have information displayed per package.

Calories refers to the total number of calories, or "energy." Supplied from all sources (carbohydrate, fat, protein, and alcohol) in a serving of the food.

% Daily Value (%DV) shows how much a nutrient in a serving of the food contributes to a total daily diet.

Nutrients to get less of:
Saturated fat, sodium, and added sugars.

Nutrients to get more of:
Dietary fiber, vitamin D, calcium, iron, and potassium.

Source: U.S. Food and Drug Administration. What's on the Nutrition Facts Label [PDF].

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