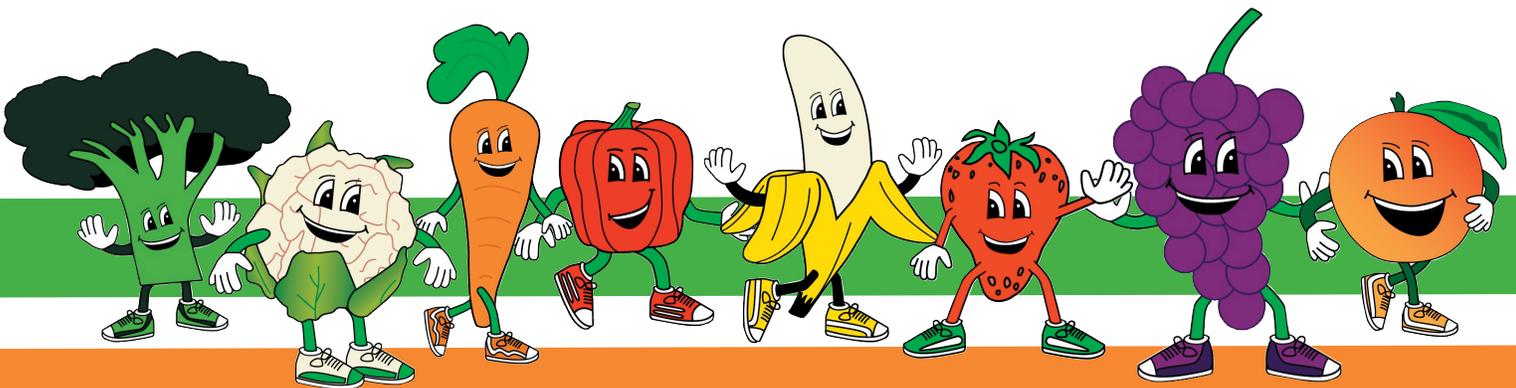


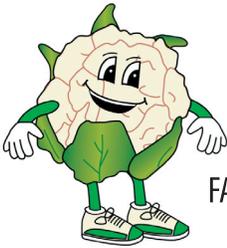


Nebraska Fresh Fruit & Vegetable Program

Resources For Food Service



Resources for Food Service Binder Contents



FACTS and NUTRITION

- Alphabetical List of Fruits and Vegetables
- Interesting Facts about Fruits and Vegetables
- Nutrients in Fruits and Vegetables
- Good Fruit and Vegetable Sources of Vitamin A, Vitamin C, etc.
- Fiber Rich Fruits and Vegetables
- Ethnic and Cultural Food Practices
- Fruit and Vegetable Websites

HANDLING, STORING, SERVING

- Fresh Fruit and Vegetable Ripening Guide
- Storage Hints to Prolong Life of Fresh Fruits and Vegetables
- Safe Handling Practices for Fresh Produce for Foodservice
- Cutting Vegetables
- Flavor Intensity of Vegetables
- Garden Salad-To-Go Recipes
- Comparison of Ranch Dressings
- Tips to Remember for your Fruit Salads-To-Go

SURVEYS

- Fresh Fruits and Vegetables Student Survey
- Taste Test Surveys

REQUEST FORM FOR FRESH FRUITS & VEGETABLES

Alphabetical List of Fruits and Vegetables

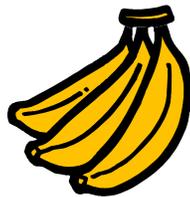
A

Alfalfa Sprouts
 Apple
 Apricot
 Artichoke
 Asian Pear
 Asparagus
 Atemoya
 Avocado



B

Bamboo Shoots
 Banana
 Beans
 Bean Sprouts
 Beets
 Belgian Endive
 Bitter Melon
 Bell Peppers
 Blackberries
 Blueberries
 Bok Choy
 Boniato
 Boysenberries
 Broccoflower
 Broccoli
 Brussels Sprouts



C

Cabbage (green and red)
 Cantaloupe
 Carambola (star fruit or star apple)
 Carrots
 Casaba Melon
 Cauliflower
 Celery
 Chayote
 Cherimoya (Custard Apple)
 Cherries
 Collard Greens
 Corn
 Cranberries
 Cucumber



D

Dates
 Dried Plums (a.k.a. prunes)
 Dried fruit is not an allowable on
 FFVP Claim

E

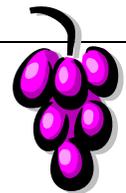
Eggplant
 Endive
 Escarole

F

Feijoa
 Fennel
 Figs (dry and fresh)

G

Garlic
 Gooseberries
 Grapefruit
 Grapes
 Green Beans
 Green Onions
 Greens (turnip, beet, collard, mustard)
 Guava



H

Hominy
 Honeydew Melon
 Horned Melon

I

Iceberg Lettuce

J

Jerusalem Artichoke
 Jicama



K

Kale
 Kiwifruit
 Kohlrabi
 Kumquat

L

Leeks
 Lemons
 Lettuce (Boston, Iceberg, Leaf, Romaine)
 Lima Beans
 Limes
 Longan
 Loquat
 Lychee

**M**

Mandarins
 Malanga
 Mandarin Oranges
 Mangos
 Mulberries
 Mushrooms

**N**

Napa (Chinese Cabbage)
 Nectarines

O

Okra
 Onion (green, red, Spanish, yellow, white)
 Oranges

P

Papayas
 Parsnip
 Passion Fruit
 Peaches
 Pears
 Peas (green, snow, sugar snap)
 Peppers (bell – red, yellow, green, chili)
 Persimmons
 Pineapple
 Plantains
 Plums
 Pomegranate
 Potatoes
 Prickly Pear (Cactus Pear)
 Prunes
 Pummelo (Chinese Grapefruit)
 Pumpkin

**Q**

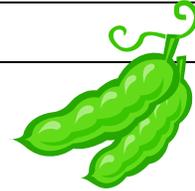
Quince

R

Radicchio
 Radishes
 Raisins
 Raspberries
 Red Cabbage
 Rhubarb
 Romaine Lettuce
 Rutabaga

S

Shallots
 Snow Peas
 Spinach
 Sprouts
 Squash (acorn, banana, buttercup, butternut, summer)
 Strawberries
 String Beans
 Sweet Potato

**T**

Tangelo
 Tangerines
 Tomatillo
 Tomato
 Turnip

**U & V**

Ugli Fruit

W

Watermelon
 Water Chestnuts
 Watercress
 Waxed Beans

X & Y

Yams
 Yellow Squash
 Yuca/Cassava

Z

Zucchini Squash

Interesting Facts About Fruits and Vegetables



Vegetables

Sweet Gold, Green, or Red Bell Peppers

The color of the pepper depends on the variety. Peppers have a mildly sweet, slightly spicy flavor. Sweet bell peppers are available year round. Most are grown in Florida and California. In some parts of the United States, people call these vegetables “Mangoes,” confusing them with the sweet fruit grown mostly in Central America. Sweet bell peppers are excellent sources of vitamin C and also provide vitamin A and potassium.



Broccoli

Broccoli is an excellent source of vitamin C and a good source of vitamin A. It is a cruciferous vegetable, part of the cabbage family. Eating cruciferous vegetables may reduce the risk of colon cancer. Broccoli contains very little sodium and fat and no cholesterol. Look for broccoli with firm, compact clusters of small flower buds. The clusters should be dark green and may have a purple cast to them. Broccoli is crisp and crunchy and is very tasty cut up and served raw with a low-fat vegetable dip.

Broccoflower

It looks like cauliflower dyed neon green. Broccoflower is a cross between cauliflower and broccoli. Introduced in Holland, it is now grown in Salinas, California. Broccoflower taste much like cauliflower when it's raw, but sweeter and less pungent. When cooked, the results taste more like broccoli. Broccoflower has more vitamin C than oranges. It's also high in folic acid that is important to the maintenance of red blood cells that carry oxygen throughout the body. Broccoflower is also higher in vitamin A than either broccoli or cauliflower.

Baby Carrots

Baby carrots are produced year round. Most baby carrots are grown in California. Because of their tiny size, they are very tender, sweet, and fun to eat all by themselves as a snack. Baby carrots provide a lot of vitamin A. They are also good sources of fiber and potassium. No, baby carrots are not full sized carrots picked when they were babies! Producers have changed the seeds to make carrots stay tiny.

Turnips

Turnips are available year round. Among the states involved in production are California, Colorado, Indiana, New Jersey, Ohio, Oregon, Texas, and Washington. Some common varieties include Purple Top, White Glove, White Egg, Golden Ball, Amber, and Yellow Aberdeen. Turnips are a good source of vitamin C and potassium. They can be eaten either raw or cooked, and have a crunchy delicate flavor.

Spinach

Fresh leaf spinach is available throughout the year. Known as a food source since 647 A.D., the Chinese called spinach the “herb of Persia.” It was grown in America during the colonial period, probably traveling over on ships from England. The most nutritious way to serve spinach is raw in a salad, by itself, or with other mixed greens. Cooked spinach is often served as a side dish. Spinach is a rich source of iron, vitamin A, and vitamin C. Popeye knew to include this nutrient rich vegetable in his diet every day!

Jicama

Jicama, yam bean, Mexican potato, or Mexican turnip has been eaten in Central American for many centuries and is now common in U.S. stores. To eat Jicama, only the fibrous brownish peel must be removed. Jicama is often added raw to salads or prepared as strips, like carrots. In Mexico the ivory colored flesh is marinated with Mexico lime and then served topped with chili powder. A 3½ oz serving of Jicama provides 39 calories and about 25% of the RDA for vitamin C.

Celery

California provides most of the U.S. supply of celery year round. There are two distinct types classified by color: green or golden. Pascal celery is the green type most people see in the grocery store. This type of celery lacks stringiness and is known for its distinct flavor. Most people enjoy raw celery because of its crunchiness. It is also tasty filled with peanut butter, cream cheese, or cheese spread. Celery is a main ingredient in oriental stir-fry dishes and gives flavor to soups and stews. Celery is a good source of fiber, folic acid, potassium, and vitamin C. It is a very low-calorie snack.

Fruits



Red Bartlett Pears

Bartlett pears are known as the “summer pear.” They are plentiful in June and July. Pears are one of the few fruits that do not mature well if allowed to ripen on the tree. As a result, pears must be picked before they are ripe to ensure quality. This is the reason you will often find firm, unripened pears at the store. After the pear has ripened, you will have a juicy, flavorful, sweet, nutritious snack. Pears are a good low-calorie source of fiber, potassium, vitamin C, and carbohydrate. Their distinctive red color makes them an irresistible snack for the “sweet tooth.”

Kiwi Fruit

Kiwi fruit is a refreshing source of good nutrition. Ounce for ounce, kiwi fruit has more vitamin C than oranges, as much potassium as bananas, and four times as much fiber as celery. It contains no sodium, very little fat, and no cholesterol. Kiwi fruit is available year round. Like peaches, kiwi fruit is ripe when slightly soft to the touch. Choose fruit that is plump and unwrinkled. To ripen at home, place in a bowl with other fruit and leave at room temperature for a few days. For quick ripening, place kiwi fruit in a paper bag with apples or bananas. Kiwi can be eaten very simply right out of the hand or can complement any meal. Use as a beautiful garnish for salads or dessert plates, kiwis will also tenderize meats.



Pineapple

Although most people think pineapple only grows in Hawaii, it also comes from Honduras, Mexico, Philippines, Puerto Rico, and South Africa! Fresh pineapple is a delicious tropical fruit that would be a refreshing addition to any meal, especially during warm weather! Do not add fresh pineapple to gelatin dishes because it contains an enzyme, which destroys the gelatin’s ability to get firm. Pineapples do not get any sweeter after they are harvested. Because of this, the harvest timing must be just right for the best flavor. A ripe pineapple should be firm all over and have a fragrant smell. Pineapples provide some vitamin C, and are good sources of fiber and potassium.

Tangelo (Ugli) Fruit

Native to Jamaica, Ugli fruit is a citrus fruit that is thought to be a mandarin-orange hybrid or tangerine-grapefruit hybrid. On its own, Ugli fruit has orange or pink flesh that is sweeter than grapefruit. It wears the most wrinkled skin of all citrus varieties, making it easy to peel. It is generally available October through February. Nutritional value is comparable to that of other citrus fruits.



Granny Smith Apples

Washington is the top producer of apples in America. Introduced in the U. S. in 1958, the Granny Smith has been a favorite ever since. The “Granny” has a famous bright to light green color and tart flavor. It is exceptionally tart and crispy. Grannies often have a light pink blush. They are excellent for salads and for eating right out of hand. Apples need refrigeration to maintain crispness and flavor. Avoid fruit with too many bruises. Apples are high in fiber and a good source of vitamins A and C and potassium. One average-sized apple contains 80 calories and no sodium.



Cantaloupe

Cantaloupe has been around since ancient Roman times about 2400 B. C. Brought to the New World on one of Columbus' voyages in seed form, he later reported seeing it cultivated by the Indians. Also known as the Musk Melon because of its sweet smell, it has been a favorite all over the world. Cantaloupe is grown mainly in California, Texas, and Arizona and is available year round. They must mature on the vine, as they will not ripen once picked. To choose mature melons, look for one that is well netted or webbed, with a yellow background and a pleasing aroma. If any of the stem is showing, that means the melon was picked pre-maturely and will probably not taste as sweet as one allowed to ripen on the vine. It is hard to believe, but the great taste of a juicy sweet cantaloupe comes with a very small caloric price: 50 calories per 6-oz slice! Half a cantaloupe will meet your daily requirement for vitamins A and C, as well as valuable minerals such as folic acid and potassium. Cantaloupe has no fat or cholesterol and provides fiber in the diet.

Honeydew Melon

Honeydew is actually a member of the cantaloupe family. It is characterized by a smooth, creamy colored outside skin (no netting) and a beautiful pale green flesh inside. Honeydew is one of the few melons of this type that can continue to ripen once picked. Honeydew likes to be cool but not chilled. At temperatures below 40° F., brown spotting may occur. Honeydew is an excellent source of vitamin C. It also contains potassium and fiber. It is low in calories and contains no fat or cholesterol.



Red Grapes

Table grapes have been around since 4000 B. C. Franciscan missionaries introduced table grapes to California in the late 1700s. They may have been introduced to Mexico as early as 1500 by the Spanish conquistadors. Of all the grape varieties available, red grapes are probably the least well known. Purchased as an impulse item, green grapes top the consumer's choice list. Grapes need to be picked at just the moment of ripeness because they do not sweeten after picking. Red grapes may be sweet or have a hint of tartness. Grapes are low calorie, provide vitamin C and potassium, and are low in sodium. They are great snacks, go well in the lunch box, or complement cheese platters.



Pomegranate

The Chinese Apple is another name for the pomegranate. The skin is red and smooth with a juicy spongy-soft, white membrane that encloses clusters of edible crimson, jewel-like seeds. The pomegranate has a sweet, aromatic flavor, and sometimes weighs up to one pound! In some cultures, the pomegranate is a symbol of fertility. Some herbalists to treat inflammations such as sore throats and rheumatism use it medicinally. The pomegranate can be stored at 32° F (for up to four months). Pomegranates contain vitamin C and fiber and are low in sodium and rich in potassium. This is a very unusual fruit that children particularly enjoy trying.

Strawberries

Strawberries are the favorite berries of the U. S. Most strawberries come from the United States, but there are also varieties from Mexico, New Zealand, and Canada. Store only briefly as they are seldom good beyond five days, and the temperature must be held below 40° F. However, if the temperature is too cold, they will lose both color and flavor. Quality berries are characterized by bright red color, with very little green or white visible. Caps should be in place. Look for clean berries with no sign of moisture or mold. Strawberries are low calorie and a good source of vitamin C and fiber.





Nutrients in Fruits and Vegetables

Nutrient	Function in the Body	Fruit and Vegetable Sources
Vitamin A	Essential for vision, skin and the immune system. Promotes growth. Protects against some types of cancer.	Cantaloupe, apricots, dark green and deep yellow vegetables such as pumpkin, carrots, sweet potatoes, spinach, greens and bell peppers.
Vitamin C	Strengthens blood vessels, improves wound and bone healing, increases the resistance to infections and increases the absorption of iron – another important nutrient for growth.	Cantaloupe, honeydew melon, peaches, oranges, strawberries, kiwi fruit, asparagus, sweet potatoes, bell peppers, broccoli, Brussels sprouts.
Antioxidants and Phytonutrients	Antioxidants are vitamins, minerals and other substances that fight free radicals, which play a role in the progression of cancer and heart disease. Phytonutrients are the color pigments in the fruits and vegetables that either act as antioxidants or enhance the antioxidant benefits.	Fruits and vegetables bursting with color such as berries, tomatoes, and dark green and deep yellow vegetables.
Fiber	Important to maintain digestive health, as well as reduce blood cholesterol.	Raspberries, peas, blackberries, Brussels sprouts, parsnips, raisins, broccoli, black beans.
Folate	Important for normal cell division, wound healing and prevention of birth defects.	Orange juice, dried peas and beans, green leafy vegetables such as mustard and turnip greens, collards and spinach.
Calcium	Important for strong bones, blood clotting, muscle contraction and nerve function.	Rhubarb, okra and green leafy vegetables such as mustard and turnip greens, collards, kale and spinach.

Source: Building Blocks for Fun and Healthy Meals – A Menu Planner for the Child and Adult Care Food Program. U.S. Department of Agriculture, Food and Nutrition Service. Spring 2000.

Good Fresh Fruit and Vegetable Sources of Vitamin A, Vitamin C, Iron and Calcium

Good Vitamin A Sources

- Apricots
- Cantaloupes
- Carrots
- Collard greens
- Hot chili peppers
- Leaf lettuce
- Romaine lettuce
- Mangos
- Nectarines
- Peaches
- Spinach
- Sweet Potatoes

Good Vitamin C Sources

- Broccoli
- Cabbage
- Cantaloupes
- Cauliflower
- Grapefruit
- Green peppers
- Brussels sprouts
- Kiwi fruit
- Oranges
- Papayas
- Strawberries
- Mustard greens

Good Iron Sources

- Spinach

Good Calcium Sources (nondairy)

- Spinach, raw
- Mustard greens, boiled
- Collards, boiled
- Beet greens, boiled
- Figs, raw
- Papaya, raw
- Rhubarb, raw
- Wakame, raw
- Kelp, raw
- Turnip greens, raw
- Cabbage, Chinese (pak choi)
- French beans
- Natto
- Tempeh
- Chickory greens, raw



Combining good iron sources with high Vitamin C sources helps with iron absorption in the body.

Source: Fresh 2 U The Florida Way

Fiber Rich Fresh Fruits and Vegetables



Fruits



(2 grams or more)	Serving Size	Grams Fiber
apple, with skin	1 medium	3.5
apple, without skin	1 medium	2.7
apricot, fresh with skin	3 medium	2.0
banana	1 small	2.4
blueberries	½ cup	2.0
orange	1 medium	2.6
peach with skin	1 medium	2.0
pear with skin	1 small	3.1
pear without skin	1 small	2.5
strawberries	1 cup	3.0
(1-1.9 grams)		
cantaloupe	¼ melon	1.0
cherries	10	1.2
peach, without skin	1 medium	1.2

Vegetables (raw)

(1 – 1.9 grams)	Serving Size	Grams Fiber
broccoli	½ cup	1.7
cabbage, shredded	½ cup	1.5
carrots, shredded	½ cup	1.8
celery	½ cup	1.1
onions	½ cup	1.0
tomato	1 medium	1.5
spinach	1 cup	1.2



Ethnic and Cultural Food Practices

Materials in this section have been adapted from: Fresh 2 U – Florida School Food Service Guide.
www.fresh-from-florida.org

At one time, kiwi and bean sprouts were considered unique foods; today, however, these foods and other ethnic and cultural food are typical foods found in kitchens across America. The following pages contain information on a variety of traditional food favorites.

Traditional Southern Favorites

The eleven states that traditionally are considered to make up the South include: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North and South Carolina, Tennessee, Texas, and Virginia.

Traditional Southern Fresh Fruits and Vegetables

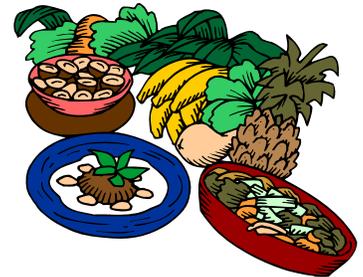
Sweet Potato	Watermelon	Collard greens	Honeydew
Peaches	Mustard greens	Apples	Beets
Pokeweed	Huckleberries	Okra	Squash
Cantaloupe	String Beans	Mayhaw	Cabbage
Turnip roots	Plums	Spinach	Broccoli
Kale	Oranges	Turnip Greens	Peas
Oranges			Key Limes

Cajun and Creole Traditional Favorites

Although southern Louisiana has a higher Cajun and Creole population, many have relocated into regions of northern Florida bringing with them many regional favorites.

Traditional Cajun and Creole Foods

Peas, crowder	Muscadines [scuppernongs]
Pumpkin	Dewberries/Blackberries
Cushaw squash	Satsuma/Mandarin
Mirliton/Chayote	Kumquats
Potatoes	Passion fruit



Pacific Islands

People of the Pacific Islands are from the 10,000 islands of Oceania. Polynesia, Micronesia, and Melanesia are the three areas that make up the Pacific region. Polynesia includes the major island and island groups of Hawaii, American Samoa, Western Samoa, Tonga, Easter Island, and Tahiti, and the Society Islands. The small islands of Micronesia include Guam, Kiribati, Nauru, the Marshall and Northern Mariana Islands, Palau, and the Federated States of Micronesia. Melanesia includes the nations of Fiji, Papua, New Guinea, Vanuatu, the Solomon Islands, and the French dependency of New Caledonia.

Traditional Pacific Island Foods

Melons	Sword beans	Papayas	Cabbage	Bananas	Breadfruit
Lentils	Passion fruit	Pigeon peas	Greens	Cassava	Coconuts
Pigeon peas	Vi [ambarella]	Cauliflower	Yams	Pineapples	Seaweed
Bitter melon	Carrots	Soybeans	Guavas	Sweet potatoes	Litchis
Jackfruit					Winged beans

Many different eating habits are prominent in this region due to the different religious practices found among the people. Vegetarianism is practiced with lacto-vegetarian, lacto-ovo-vegetarian, and vegan diets the most commonly followed forms. As vegetarianism is the preferred form of eating, even non-vegetarians eat vegetarian meals on special or religious holidays.

Traditional Indian and Pakistani Foods

Cucumber
Karela
Okra
Mung bean sprouts
Chenna [chickpeas]
Mattar [green peas]
Mango

Guava
Coconut
Tamarind [fruit from the Tamarind tree]
Brinjal [eggplant]
Karela



China, Japan, and Korea

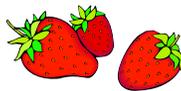
Chinese, Japanese, and Korean foods found in American restaurants do not always reflect traditional foods found in China, Japan, and Korea. Traditional diets are abundant in complex carbohydrates and include a wide variety of meat, poultry, seafood, fruits, and vegetables. Almost 80 percent of the calories consumed are from grains, legumes, and vegetables; the remaining 20 percent comes from animal proteins, fruits, and fats.

Traditional Chinese, Japanese, and Korean Foods

Amaranth
Bananas
Banana squash
Dates
Broccoli
Grapes
Cauliflower
Lime
Chinese Long beans
Chinese mustard
Oranges
Eggplant
Peaches
Ginger root
Plums
Leeks
Tangerines
Lotus root and stems
Mushrooms
Peas
Seaweed
Taro
Water chestnuts
Winter melon



Apples
Bamboo shoots
Coconut
Bitter melon
Figs
Cassava [tapioca]
Lily seed
Cabbage [bok choy and napa]
Muskmelon
Cucumbers
Passion fruit
Fuzzy melon
Pineapples
Kohlrabi
Pomelos
Lily root
Strawberries
Okra
Potato
Snow peas
Tea melon
Watercress
Yams



Asparagus
Custard apples
Bean sprouts
Dragon eyes [longan]
Burdock root
Kumquats
Celery
Litchi
Mango
Chrysanthemum greens
Papaya
Flat beans
Persimmons
Green peppers
Pomegranates
Legumes
Pear apples
Luffa
Onions
Pumpkin
Spinach
Turnips
Wax beans



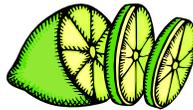
Mexico

The unique blend of native and European foods prepared with Indian (mostly Aztec) and Spanish cooking techniques are the resulting cuisine of traditional Mexican food.

Traditional Mexican Foods

Plantains	Avocados	Carambola
Zapote	Strawberries	Corn
Tuna [cactus fruit]	Cherimoya	Granadilla [passion fruit]
Coconut	Cactus	Jicama
Chiles	Guanabana	Lemons
Guava	Onions	Potatoes
Peas	Limes	Melon
Mamey	Squash blossoms	Tomatoes
Tomatillos	Oranges	Pineapple
Papaya	Yuca [cassava]	

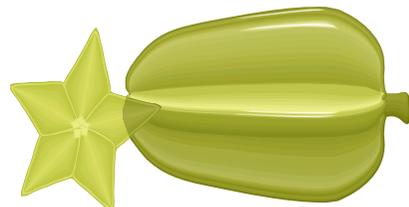
Southeast Asia



Southeast Asia includes the Philippine, Vietnam, Cambodia, and Laos. Spanish expansionism in the Philippines and the French occupation in Vietnam have led to the development of a diverse cuisine. Regions use many of the same ingredients with varying meal preparation techniques.

Traditional Southeast Asian Foods

Citrus fruits	Apples	Corn
Avocados	Amaranth	Banana blossoms
Bamboo shoots	Bananas	Bean sprouts
Calamansi [lime]	Beets	Coconut
Bitter melon	Durian	Mushrooms
Grapes	Cabbage	Guava
Carrots	Jackfruit	Cashew nut leaves
Java plum	Cassava	Litchi
Cauliflower	Mangoes	Celery
Melons	Eggplant	Papaya
Endive	Pears	Green beans
Persimmons	Green papaya	Pineapples
Hyacinth beans	Plums	Hearts of palm
Pomegranates	Kamis	Pomelo
Leaf fern	Rambutan	Leeks
Rhubarb	Lettuce	Star fruit
Long green beans	Strawberries	
Tamarind	Watermelon	



Cuba and Puerto Rico

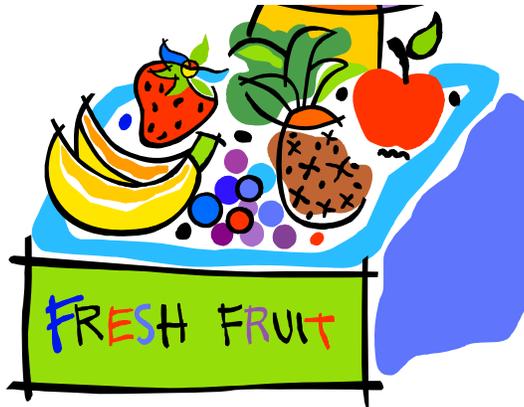
Caribbean food habits are very similar, although each island has its specialties. The Indians, the Spanish, French, British, Dutch, Danes, Africans, Asian Indians, and Chinese have all had an impact on the cuisine.

Traditional Cuban and Puerto Rican Foods

Yuca
Bananas
Malanga [taniel]
Guava
Sweet potatoes
Soursop
Okra
Mangoes
Kidney beans
Akee
Broccoli
Cocoplum
Callaloo [malanga
or taro leaves]
Grapefruit
Eggplant
Mamey
Palm hearts
Sapodilla

Avocados
Plantains
Coconuts
Chayote
Pineapples
Chili peppers
Breadfruit
Black beans
Acerola cherries
Arracacha
Citron
Calabaza [green pumpkin]
Gooseberries
Granadilla [passion fruit]
Cucumbers
Lemons
Malangas
Raisins
Spinach

Manioc
Cashew apples
Chocho [christophene]
Papayas
Tomatoes
Limes
Taro
Oranges
Black-eyed peas
Caimito [star fruit]
Cabbage
Custard apple
Chiles
Corn
Kumquats
Green beans
Pomegranates
Radishes
Tamarind



Fruit and Vegetable Websites

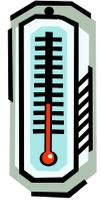
Consumer Group	Web Site	Nutrition Education	Information Specifically for Schools	Recipes	Free Posters & More
National Fruit and Vegetable Program	www.fruitsandveggiesmatter.gov	Yes	No	Yes	Yes
Produce for Better Health	www.fruitsandveggiesmorematters.org	No	No	Yes	Yes
California Cling Peaches	www.calclingpeach.com	Yes	Yes	Yes	Yes
California Kiwifruit	www.kiwifruit.org	Yes	Yes	Yes	No
California Strawberry Commission	www.calstrawberry.com	Yes	Yes	Yes	Yes
California Tomato Commission	www.tomato.org	Yes	No	Yes	Yes
Cherry Marketing Institute	www.cherrymkt.org	Yes	Yes	Yes	Yes
Idaho Potato Commission	www.idahopotato.com	Yes	No	Yes	Yes
Michigan Apple Committee	www.michiganapples.com	Yes	No	Yes	Yes
North American Blueberry Council	www.blueberry.org	Yes	No	Yes	Yes

Publication	Web Site
Fruits and Vegetables Galore: Helping Kids Eat More, U.S. Department of Agriculture.	www.fns.usda.gov/tn/Resources/fv_galore.html
National Action Plan To Promote Health Through Increased Fruit and Vegetable Consumption. Produce for Better Health Foundation. Team Nutrition	http://www.pbhfoundation.org/pulser/action/ http://healthymeals.nal.usda.gov
Fruits & Veggies- More Matters Resource Manual	http://www.floridawic.org/Documents/fruits_and_veggies--more_matters/index.html

Handling and Storage of Fresh Fruits and Vegetables

Produce is alive and breathing. At the time produce is harvested, the life of the product starts to decline. In a perfect produce world, one would need to have many storage areas with different storage temperatures to receive the maximum shelf life and quality desired. This would be quite a challenge as storage space and temperatures are limited in most school cafeterias. However, there are variables that can be controlled that will enable food service staff to preserve the quality of produce and are also essential to optimizing produce quality, safety and yields. Key variables to maximize produce life include temperature, rotation, and storage practices.

Temperature



- Single most important factor in maintaining and maximizing life and quality of produce.
- Storing at *incorrect* temperatures is the primary cause for produce loss.
- For every ten degrees above ideal storage temperature, a produce item will lose up to half its life expectancy, especially for items served uncooked.
- Store produce immediately upon delivery.
- Coolers should be set at 38° - 40° F or cooler to hold most produce for seven days.

Rotation

- Proper rotation practices must be followed in order to keep produce fresh and prevent waste.
- Date all produce the day it is received.
- Practice FI/FO by placing new product under or behind the older product to ensure that the oldest produce is used first.

Storage

- Temperatures fluctuate during the day as the door is opened and closed.
- Temperature in the front of the cooler will be warmer than in the middle and back.
- Temperatures should be checked and recorded daily to ensure optimal product life and efficiency of cooler.

Fresh Fruit and Vegetable Ripening Guide

Ripening Guide

Some fresh fruits continue to ripen after they have been harvested while others do not. Whether or not a fruit continues to ripen is a key factor in determining its storage and shelf life. Fruits that require additional ripening should be stored at room temperature until they become ripe. Fruits that do not ripen after harvesting should be stored in a cool area until they are used.

Fruits that ripen after harvest	Fruits that don't ripen after harvest
 <ul style="list-style-type: none">ApricotsAvocadosBananasCantaloupeCarambolaHoneydewKiwifruitNectarinesPapayaPeachesPearsPlantainsPlumsTomatoes	<ul style="list-style-type: none">ApplesBerriesCherriesGrapefruitGrapesLemonsLimesMandarinsOrangesPineappleStrawberriesWatermelons 

Ethylene Gas: Benefits and effects of harmful exposure

Fruit can be ripened quickly by introducing ethylene gas into a controlled environment. For example, it is often used to ripen bananas, tomatoes, and avocados. Certain fruits can be placed in a closed bag and the fruit's natural ethylene can speed the softening process.

While ethylene is great for ripening some fruits, the gas can cause premature decay of other fruits and vegetables that are sensitive to it. To avoid deterioration or rapid ripening of sensitive commodities, avoid holding them in the same storage room or refrigerator compartment with products that emit a great deal of ethylene gas. Diseased or injured fruits generate substantially increased levels of ethylene, so remove injured produce right away. If only one cooler is available, keep lids on storage boxes, store sensitive commodities as far away as possible from ethylene producers, and rotate product properly. If produce inventory turns quickly, ethylene should not cause quality problems

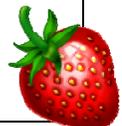
Fruits that produce large amounts of ethylene	Fruits/Veggies that are sensitive to ethylene	
Apples Apricots Avocados Cantaloupe Honeydew Kiwifruit (ripe) Mangos Papayas Peaches Pears Plums	Bananas Beans Broccoli Brussels Sprouts Cabbage Carrots Cauliflower Cucumbers Eggplant Greens	Kiwifruit (unripe) Lettuce Nectarines Okra Peas Peppers Spinach Summer Squash Sweet Potatoes Watermelon



Ideal Storage temperatures for fresh fruits and Vegetables

32° to 40° F

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 (except basil & oregano) Iceberg Lettuce Kale Kiwifruit All Leaf Lettuce Mushrooms Nectarines Onions Oranges (Florida & Texas)	Parsley Parsnips Peaches Pears (Fresh-Cut) Peas Pineapple (Fresh-Cut) Plums Radishes Rhubarb Rutabagas Spinach Sprouts Strawberries Turnips Watercress
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40° to 50° F

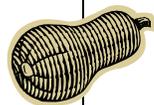


Avocados (Ripe) Basil (Fresh) Beans Cucumbers Eggplant Ginger Root Honeydews	Jicama Lemons Mandarins Melons Okra Oranges (California) Oregano (Fresh)	Papaya Peppers Pineapples Potatoes Squash (Summer) Tomatoes (Ripe)*
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*Will lose flavor at this temperature during prolonged storage

Leave Out of Cold Room

Avocados (Unripe) Bananas Grapefruit Limes	Mangos Pears (Unripe) Plantains Pumpkins Shallots	Squash (Winter) Sweet Potatoes Tomatoes (Green) Watermelons (Whole)
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Storage Hints to Prolong Life of Fresh Fruits and Vegetables

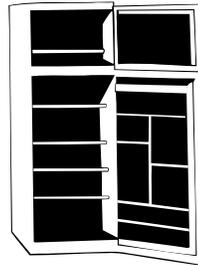
Temperature fluctuates from front to back of the cooler due to the location of the cooling unit and frequency of the door being opened. Items stored in the front of the cooler have a longer shelf life and can handle the fluctuating temperatures. The middle section of the cooler is for items that are less hardy with a more delicate peel or skin. Items in this area including broccoli, green onions and parsley may be sprinkled with crush ice. The slowly melting ice will replace moisture loss and help prevent wilting thus prolonging their shelf life. The back of the cooler is the coolest area and best suited for the ripest or most perishable items. Sprinkling crushed ice on greens such as collards, kale and mustard can also help lengthen the life of these products. Consider dividing the cooler into three areas and store produce as noted below:

FRONT	Apples Basil Cabbage Cantaloupes Citrus Carambola Cucumbers Eggplant	Garlic Honeydews Jicama Limes Okra Onions Papayas Pears	Peppers Pineapples Plums Radishes Rhubarb Ripe Tomatoes Zucchini
MIDDLE	Artichokes Asparagus Beets Broccoli Cauliflower	Cherries Coconuts Grapes Green Onions Kiwifruit	Mushrooms* Parsley Peas Turnips Watercress
BACK	Alfalfa Sprouts* Apricots Bean Sprouts* Berries Carrots	Corn Fresh-Cut Salad Greens Head Lettuce Herbs Kale	Leaf Lettuce Parsnips Ripe Nectarines Ripe Peaches Spinach

*Store as far away from light as possible usually on lower shelf

Please note there are always exceptions to the rules. Tomatoes should not be stored in the cooler. They should be received in a firm state and stored at room temperature to ripen. However, once they have reached maximum ripeness, they should be stored in the front of the cooler to slow further ripening until used. In addition, potatoes should also be stored out of the cooler. Ideally, potatoes – white potatoes and sweet potatoes should be stored at 45° - 50° F. Potatoes stored at or below 40° F will convert starches into sugar causing the potato to darken when cooked. Also, protect potatoes from direct light for this will cause them to turn green and cause a bitter taste.

Food Service personnel have decisions to make regarding every produce delivery. Practicing good habits such as checking all produce upon arrival and immediately placing product in the appropriate storage area will help preserve the quality of the product for when utilized.



Storage Information for Value Added Produce

If Product Reaches This Temperature

70° F (21° C)

60° F (16° C)

50° F (10° C)

45° F (7° C)

40° F (4° C)

35° F (2° C)



Product Will Stay Fresh For:

4 hours

1 day

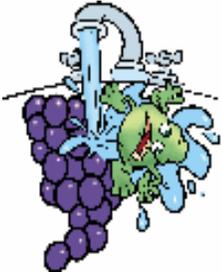
4 days

9 days

14 days

17 days





Safe Handling Practices for Fresh Produce for Foodservice

Julie A. Albrecht, PhD

Extension Food Specialist

University of Nebraska-Lincoln

Purchasing and Receiving

Purchase food from known safe sources (reputable suppliers) and maintain its safety from time of receiving through service.

When fresh produce is received, follow supplier recommendations, if provided, regarding handling, storage temperatures, "use by" dates and other recommendations for the produce.

Avoid receiving or using damaged and partially decayed produce.

Maintain purchasing records of fresh produce.

Storage

Store raw produce so that it does not contaminate other foods with soil, etc.

Store any fresh produce, whole or cut, where other products – especially raw meat and poultry – cannot cross-contaminate it.

Segregate fresh produce from other refrigerated foods in refrigeration units by using a separate set of storage racks or separate cooler, if possible.

Cover and store washed cut produce above unwashed, uncut fresh produce.

Store all produce off the floor. Remember keep all foods 6" off the floor.

The Nebraska Food Code requires that melons and tomatoes, that are cut in any way, be held at 41⁰F or below. To maintain quality of other cut, peeled or prepared fresh fruits and vegetables, refrigerate at 41⁰F or below or hold on a salad bar at 41⁰F or below.

Food Handler

Wash hands thoroughly with soap and warm running water before and after handling fresh produce.

Avoid bare hand contact when preparing and serving fresh produce – use gloves, tongs, deli tissue or other appropriate utensils.

Make sure that food employees are reporting illness and are not working while sick.

Preparation

Wash, rinse and sanitize all sinks, utensils, cutting boards, slicers and food preparation surfaces before use with fresh produce. If possible, designate specific cutting boards and utensils for use with fresh produce.

Remove outer leaves, stems and hulls from produce like cabbage, head lettuce, berries and tomatoes.

Always wash fresh produce under running, potable water before use.

Do not use soap or detergent for washing produce as these products are not food grade. Produce washes that are designated for use with produce can be used but are not necessary for produce safety.

Rinse fresh fruits and vegetables under running tap water. Scrub firm fruits and vegetables like potatoes and carrots with a vegetable brush under running tap water.

Soaking produce or storing produce in standing water or ice is not recommended for most types of fresh produce.

Commercial, "fresh-cut" carrots, salad greens and other produce have already been washed before processing and should be considered ready-to-eat with no further need for washing unless the label says otherwise.

Refrigerate foods prepared with fresh produce ingredients at 41⁰F or below.

Label and date all foods prepared with fresh produce ingredients. If not used within 7 days, discard prepared fresh produce.

Freshly prepared juice on site requires a HACCP plan.

Service

On self-serve and salad bars, use small batches of fresh produce and monitor self-service units.

Fresh produce should not be held directly on ice.

Provide appropriate utensils for self-service of fresh produce.

Do not re-serve freshly prepared dishes containing any raw produce, including dishes made with raw tomatoes, cilantro and hot peppers such as salsa and guacamole.

Throw away fresh fruits and vegetables that have not been refrigerated (41⁰F or below) within 4 hours of cutting, peeling or preparation.

Cutting Vegetables

1. **Julienne**

Peel vegetables and trim ends.
Slice vegetable into slices.
Stack the slices and cut into lengthwise 1/4-inch strips.



2. **Mince**

Roughly chop vegetable on cutting board with a large knife.
Continue to chop until vegetables are very finely chopped.



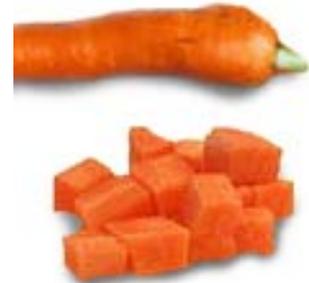
3. **Dice**

Slice vegetable into slices.
Stack slices and slice into 1/4-inch vertical slices.
Hold slices tightly with hand and cut crosswise into 1/4-inch intervals



4. **Cube**

Slice vegetables into slices.
Stack slices and slice into 1/2-inch vertical slices.
Hold slices tightly with hand and cut pieces into 1-inch pieces.



5. **Slice**

Peel vegetables and trim ends.
Slice vegetable on the diagonal at 1/2-inch intervals.



Source: www.russianfoods.com/russian-cooking/article0000A/default.asp

Flavor Intensity of Vegetables

The strength or intensity of the flavor of certain vegetables is due to their sulphur content.

	Mild Flavored Vegetables	Stronger Flavored Vegetables
Leaf Vegetables:	Spinach Swiss or red chard Beet greens Lettuce	Curly kale Mustard greens Cabbage Brussels sprouts
Seed Vegetables:	Corn Peas Black-eyed peas Beans	
Fruit Vegetables:	Tomatoes Eggplant Summer squash Winter squash	Green peppers Hot peppers
Flower Vegetables:	Artichokes	Cauliflower Broccoli
Stem Vegetables:	Celery	Asparagus
Root Crops:	Carrots Beets Sweet potatoes Parsnips	Turnips Rutabagas Onions



Garden Salad-to-Go

2 cups lettuce
4 tomato wedges (use ½ tomato)
2 slices cucumber
1 radish sliced
2 small broccoli florets
3-4 carrot sticks



1. Place lettuce pieces in a clear plastic-lidded 20-ounce container.
2. Place tomato wedge in each of the four corners, diagonal with each corner.
3. Place two cucumber slices overlapping in the center of the container.
4. Arrange the radish slices on each side of the tomato wedges.
5. Place the two broccoli florets on the left and right side of the container.
6. Top with carrot sticks.

Spinach Salad-to-Go

2 cups spinach
1 mushroom sliced
2 cherry tomatoes

1. Place spinach pieces in a large clear plastic lidded container.
2. Arrange mushroom slices on the spinach.
3. Place a cherry tomato on each side of the container.



Comparison of Ranch Dressings

Suggestions for Use of Salad Dressings:

- Encourage use of non-fat or low-fat dressings.
- Serve only dressings with 12 grams of fat or less per ounce or per serving. Less is better.
- Limit the amount served by pre-portioning, using packets, serving dressings to students, setting pumps on ½ oz per squirt, and/or serving salad dressings less often.

Per 2 Tbsp Serving	Calories	Fat (gm)	Sat. Fat (gm)	Cholesterol (mg)	Sodium (mg)	Carbo-hydrate (gm)	Protein (gm)
Regular, Bottled							
Pocahontas Buttermilk Dressing	170	18	2.5	5	280	1	0
Mrs. Clarks Ranch Dressing	130	14	4.0	15	110	2	
Hidden Valley Ranch Original	140	14	1.5	10	260	1	1
Made From Mix							
Hidden Valley Ranch from regular mix with mayonnaise	104	11	1.3	9	226	1	0.7
Hidden Valley Ranch from regular mix with Miracle Whip	75	7	1	5	238	3	0.5
Bottled, Reduced Fat							
Hellman's' Low fat Ranch Dressing	80	7	1	15	340	4	0
Mrs. Clark's Reduced Calorie Ranch Dressing	70	7	0.0	15	150	0.0	0.0
Kraft Light Done Right	70	4	0.5	10	350	6	0
Made From Scratch							
USDA Tool Kit Recipe	34	2.1	0.7	4	152	3	1
Bottled, Non-Fat							
Wishbone Fat Free Ranch	30	0	0	0	280	7	0



Tips to Remember for Your Fruit Salads-To-Go

Offering fresh fruits in an attractive and appetizing manner will encourage your customers to choose a nutritious selection to accompany their main entrée.

1. Use colored trays for fruit soufflé cups or a two-inch steam table pan in a refrigerated unit (single layer).
2. Do not stack trays; place only one tray at a time.
3. Use 4 oz. plastic soufflé cups with lids for canned fruits. Use 4 oz. unlined plastic soufflé cups for fresh fruit.
4. Use a colored tray for bananas.
5. Keep cut apples or bananas from turning brown by dipping in a cup of lemon or lime juice or pineapple juice (drained) from canned pineapple.
6. For a colorful fruit alternative, place together a half apple and a half orange and serve in a soufflé cup. The orange prevents the apple from discoloring.
7. Don't use metal pans for serving fresh fruit.
8. Try serving fresh whole fruits in a wicker basket for an attractive serving alternative.

Fruit Salad Bowl-to-Go

- 4-5 1-inch chunks of cantaloupe
- 4-5 1-inch chunks of honeydew
- 4-5 1-inch chunks of watermelon
- 4-5 1-inch chunks of pineapple
- 1 strawberry with stem



Tip to Remember for Fruit and Vegetable Cups

1. Use 4 ounce clear plastic soufflé cups with lids to package individual fruit and vegetable servings.
2. When offering more than one serving choice for fruits and vegetables, keep like-colored items separated. Instead, line different colored items next to each other. [Place strawberries next to pears or place carrots next to celery.

Pre-packed Fruit Cups

Pack fruit cups with single servings of fresh or canned fruit, or with fruit cup mixtures. Both choices provide customers with exciting and appetizing options to meet part of the entire $\frac{3}{4}$ cup fruit/vegetable component.

Try offering:

- Strawberries and blueberries
- Strawberries and bananas
- Cantaloupe and watermelons
- Cantaloupe and honeydew
- Apples and orange slices
- Apples with blueberries
- Cantaloupe, honeydew and Watermelon
- Papaya and mangos
- Grapes and watermelon
- Half a grapefruit with a cherry
- Peaches and bananas
- Cherries and bananas
- Blueberries and pears
- Apples and bananas
- Orange and apple slices
- Kiwi fruit and grapes

Pre-packed Vegetable Cups

Pack vegetable cups with single servings of fresh vegetables or vegetable mixtures. Both choices provide customers with exciting and appetizing options to meet part or the entire $\frac{3}{4}$ cup fruit/vegetable component.

Try offering

- Celery and carrot sticks
- Celery or Carrot sticks with ranch dip
- Lettuce and tomato mixture
- Broccoli with ranch dip
- Broccoli and cauliflower with ranch dip

Pre-packed Fruit and Vegetable Combinations

Pack fruit and vegetable combination cups with fresh fruit and vegetable mixtures. This choice provides customers with exciting and appetizing options to meet all or part of the $\frac{3}{4}$ cup fruit/vegetable component.

Try offering:

- Apples with celery sticks
- Raisins and celery sticks with peanut butter
- Grapes with carrot sticks
- Apples with carrot sticks
- Banana with carrot sticks



Fresh Fruits and Vegetables Student Survey

1. List your favorite fresh fruits or vegetables:

a. _____

c. _____

b. _____

d. _____

2. Are there any fresh fruits and vegetables you do not like?

3. Are there any fresh fruits and vegetables you haven't eaten, but would like to try?



Taste Test Surveys

Eat More Fruits and Vegetables Survey

Grade Level _____ Food Item _____

Have you eaten this food before?

YES NO If yes, how often? _____

Did you like this food?

YES NO If no, why not? _____

Would you eat this food if it were prepared another way?

YES NO

What particular vegetable or fruit would you like to see served at lunch? _____

Source: Broward County, Florida – Printed in Fruits and Vegetables Galore: Helping Kids Eat More, Meal Appeal page 23

Date _____
 School _____
 Grade _____

Evaluator: Student
 Foodservice
 Teacher
 Other

Food Item	Very Good 	OK 	Not Good 	Comments



Nebraska Fresh Fruit & Vegetable Program

Request Form for Fresh Fruits and Vegetables

Name of School:		Date:
Name of Person Requesting:		Email:
Who is Receiving the Fresh Fruits and Vegetables:		Phone Number to Contact You:
Date of Activity:	Time Needed:	Location of Activity:
Number of Students:	Indicate Pickup or Delivery (Please Circle One)	
Fresh Fruit and Vegetable Needed: List the Kind and Quantity		
Special Instructions:		
Other Supplies: Ex: Napkins, Plates, Plastic ware		
Brief Description of Activity:		
Return completed form to your School Food Service Manager.		

Please submit written request at least one week in advance of activity.

Handout material adapted from the Child Nutrition & Wellness, Kansas State Department of Education 2004:

- *Fruits and Vegetables Galore: Helping Kids Eat More.* U.S. Department of Agriculture, Food and Nutrition Service. Spring 2004.
 - *5 A Day and School-Age Children: Trends, Effects and Solutions.* North Carolina School Nutrition Action Committee. 2003.
 - *Building Blocks for Fun and Healthy Meals - A Menu Planner for the Child and Adult Care Food Program.* U.S. Department of Agriculture, Food and Nutrition Service. Spring 2000.
 - *Fresh 2 U The Florida Way.* Florida Department of Agriculture and Consumer Services and Florida Department of Education.
 - <http://www.dole5aday.com>
 - *Love Those Vegetables: an Educational Packet,* Wisconsin-Minnesota Canned Vegetable Council, Inc.
 - *Preserving Nutrients in Your Foods.* School Food Service Journal. March 1992.
 - *Fundamentals of Professional Food Preparation: A Laboratory Text-Workbook.* Donal V. Laconi. 1995.
 - *Food For Fifty,* Tenth Edition (1997). Mary Molt.
 - www.russianfoods.com/russian-cooking/article0000A/default.asp
 - *Culinary Techniques: Cooking With Flair - Fruits, Salads and Vegetables.* National Food Service Management Institute.
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