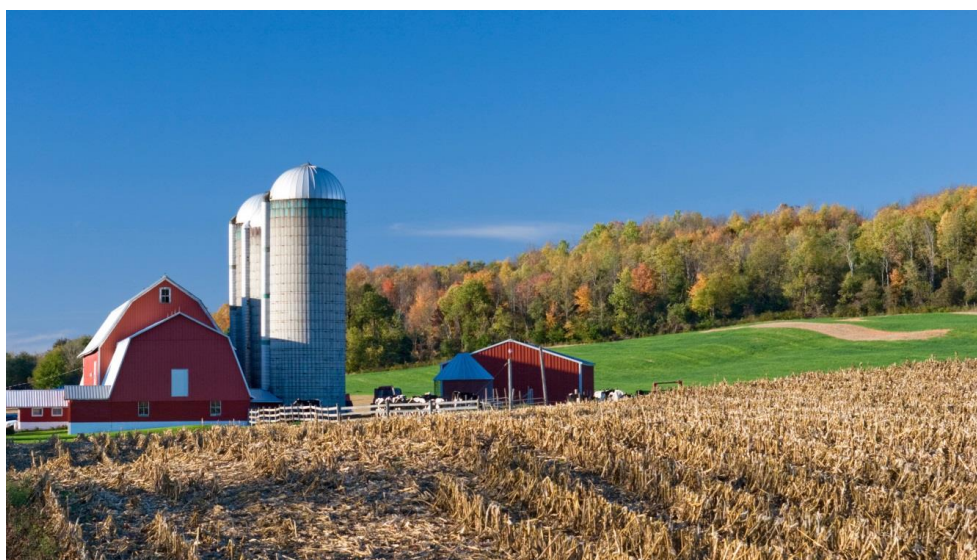


FRUIT & VEGETABLE GUIDE



Contents

Growing Calendar	2
Second Harvest Heartland Variety Calendar	3
Nutritional Information	4
Nutrient Rich Food Index (NRFI).....	7
Handling Guide	9
Apples.....	10
Bananas.....	12
Bell Peppers.....	14
Broccoli.....	16
Cantaloupe.....	18
Carrots	20
Sweet Corn.....	22
Cucumbers.....	24
Lettuce	26
Onions.....	28
Oranges.....	30
Pears	32
Potatoes	34
Winter Squash	36
Summer Squash	38
Tomatoes.....	40
Watermelon	42
First Expiring, First Out.....	44
Storage Guide	45
Recipes	50

Growing Calendar

Below is a seasonal growing calendar from Minnesota Grown. This calendar shows which produce is in abundance during the spring, summer and fall months. Not all types of produce will be available through the food bank.



Second Harvest Heartland Variety Calendar

The varieties listed below are those that we can get regularly and can successfully manage quality. Varieties are subject to change and dependent on growing season, crop conditions, quality, cost and other market dynamics.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Fruits												
Apples												
Watermelon, tote												
Cantaloupe												
Oranges												
Pears												
Walmart DC Fruit												
Vegetables												
Cabbage												
Carrots												
Onions												
Potatoes												
Sweet Corn												
Sweet Potatoes												
Winter Squash												
Cucumbers												
Eggplant												
Peppers												
Tomatoes												
Zucchini and Yellow Squash												
Walmart DC Vegetables												

Nutritional Information

Each of the following nine vitamins and minerals are found in produce. Their benefits to the human body are described below.

Protein: Proteins are the building blocks of life. Every cell in the human body contains protein. The basic structure of protein is a chain of amino acids. You need protein in your diet to help your body repair cells and make new ones. Protein is also important for growth and development in children, teens, and pregnant women. Proteins are also found in plant sources such as soy, beans, legumes, nut butters, and some grains (such as wheat germ and quinoa). You do not need to eat animal products to get all the protein you need in your diet.

Commodities high in Protein:

- Potatoes
- Sweet Corn
- Sweet Potatoes

Peak times for these commodities:

- July-October

Fiber: Dietary fiber — found mainly in fruits, vegetables, whole grains and legumes — is probably best known for its ability to prevent or relieve constipation. But foods containing fiber can provide other health benefits as well, such as helping to maintain a healthy weight and lowering your risk of diabetes and heart disease.

Commodities high in Fiber:

- Pears
- Sweet Potatoes
- Carrots

Peak times for these commodities:

- August-October

Calcium: The body stores more than 99 percent of its calcium in the bones and teeth to help make and keep them strong. Your body needs calcium to help muscles and blood vessels contract and expand, to secrete hormones and enzymes and to send messages through the nervous system. Good sources of calcium include: dairy products such as milk, cheese, and yogurt. Plus, leafy, green vegetables usually hold high contents of Calcium as well.

Commodities high in Calcium:

- Winter Squash
- Oranges

Peak times for these commodities:

- September-October

Vitamin C: Vitamin C is important for your skin, bones, and connective tissue. It promotes healing and helps the body absorb iron. Good sources include citrus, red and green peppers, tomatoes, broccoli, and greens.

Commodities high in Vitamin C:

- Cantaloupe
- Red/Green Peppers
- Oranges

Peak times for these commodities:

- July-September

Vitamin A: Otherwise known as Beta Carotene, Vitamin A promotes healthy vision, neurological function, and skin.

Commodities high in Vitamin A:

- Sweet Potatoes
- Carrots
- Winter Squash

Peak times for these commodities:

- July-October

Iron: Iron is a mineral that our bodies need for many functions. For example, iron is part of hemoglobin, a protein which carries oxygen from our lungs throughout our bodies. It helps our muscles store and use oxygen. Iron is also part of many other proteins and enzymes.

Commodities high in Iron:

- Potatoes
- Sweet Corn
- Broccoli

Peak times for these commodities:

- June-August

Magnesium: Magnesium helps to maintain normal nerve and muscle function, supports a healthy immune system, keeps the heart beat steady, and helps bones remain strong. It also helps regulate blood glucose levels and aid in the production of energy and protein. There is ongoing research into the role of magnesium in preventing and managing disorders such as high blood pressure, heart disease, and diabetes. Most dietary magnesium comes from dark green, leafy vegetables. Other foods high in magnesium include bananas, avocados, nuts, peas, beans, whole grains, and milk.

Commodities high in Magnesium:

- Sweet Corn
- Winter Squash

Peak times for these commodities:

- July-October

Potassium: Potassium is a type of electrolyte. It helps your nerves to function and muscles to contract. It helps your heartbeat stay regular. It also helps move nutrients into cells and waste products out of cells. A diet rich in potassium helps to offset some of sodium's harmful effects on blood pressure. Sources of potassium in the diet include: leafy greens, spinach, collards, grapes, blackberries, root vegetables, carrots, potatoes, citrus fruits, oranges, and grapefruit.

Commodities high in Potassium:

- Potatoes
- Tomatoes
- Zucchini

Peak times for these commodities:

- June-September

Vitamin E: Vitamin E is an antioxidant. It plays a role in your immune system and metabolic processes. Good sources of vitamin E include: vegetable oils, margarine, nuts and seeds, and leafy greens.

Commodities high in Vitamin E:

- Broccoli
- Red Peppers
- Winter Squash

Peak times for these commodities:

- June-October



<http://www.ppcind.com/wp-content/uploads/2013/08/produce2.jpg>

Nutrient Rich Food Index (NRFI)

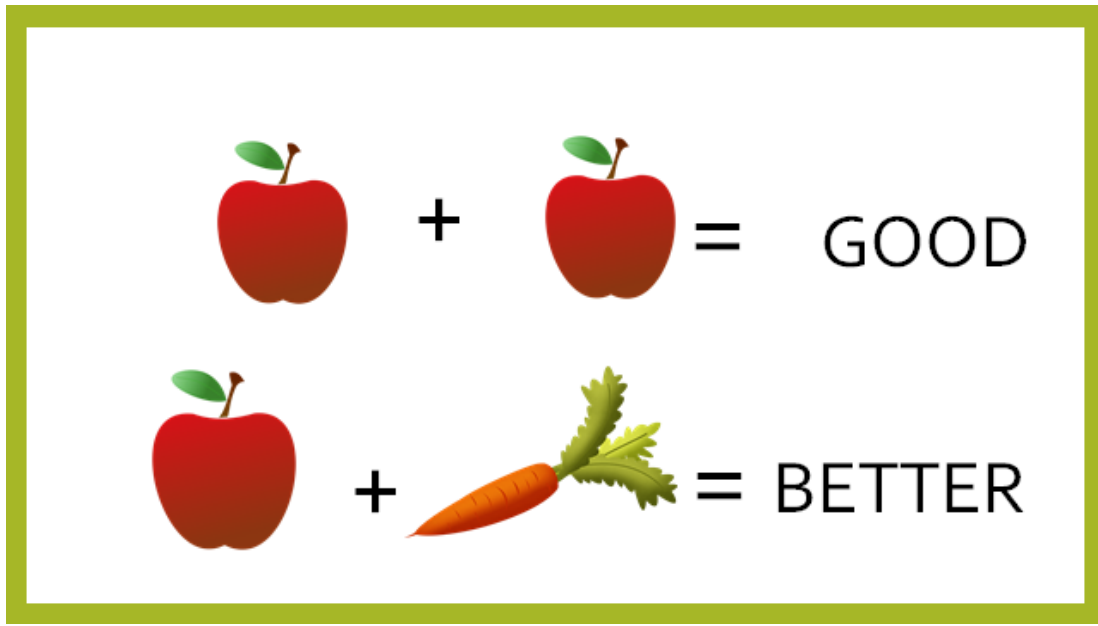
All produce varieties in this toolkit have been ranked according to nutrient density, using the following Nutrient Rich Food Index. Ranking is calculated using a formal scoring system that provides a single measure of over-all nutritional quality, based on USDA data.

This ranking provides nutrient density per cup, based on a 2000 calorie diet, by adding the percent daily values for 9 nutrients to encourage.

6 of these nutrients to encourage are derived from the FDA definition of healthy foods per the Nutrition Facts label and include: protein, fiber, Vitamin C, Vitamin A, calcium and iron. 3 nutrients are considered shortfall nutrients in most Americans' diets and include magnesium (Mg), potassium (K), and Vitamin E.

NUTRIENT RICH FOOD INDEX (NRFI)										
Nutrient Density Per Cup	Pro	Fiber	Ca	Vit C	Vit A	Iron	Mg	K	Vit E	NRFI Score
Cantaloupe	2.7	5.7	1.4	100	100	2.2	4.8	12.1	0.5	229
Squash winter	3	11.9	7.1	52	100	5	12.6	14.9	13	219
Pepper (red)	1.9	8.2	0.7	100	61	3.3	2.9	5.9	12	196
Potato (sweet)	4.1	15.9	4	5	100	7.8	8.3	12.7	7	165
Carrot	2.3	13.7	4	12	100	2.2	3.7	11.1	4	153
Orange	3.3	17	7.1	100	8	1.1	4.4	9.2	0	150
Pepper (green)	2.6	10.3	1.5	100	11	2.8	3.8	7.6	3	143
Broccoli	3.3	6.1	2.8	87	7	5.6	3.1	5.3	11.5	132
Tomato	3.3	8.9	1.9	42	31	2.8	5.1	12.5	5	113
Potato	6.2	12.7	1.8	50	0	11.1	8.7	18.3	0	109
Cabbage (red)	2.1	6	3.2	68	16	2.8	2.9	5	2.5	108
Cabbage (green)	2.3	8.9	3.6	54	2	2.2	2.7	4.3	3	83
Honeydew	1.9	5.6	1	52	2	0	4.3	11.3	1.5	79
Corn (sweet)	10.1	12.4	0.3	18	6	5.6	14.3	12	0	78
Zucchini	2.6	4.3	1.7	32	4	2.2	4.8	8	0.5	60
Squash yellow	1.9	3.8	2	31	3	2.2	4.8	6.1	0.5	55
Watermelon	1.8	2.4	1.1	20	17	2.2	3.8	4.8	0.5	54
Onion	3.7	11.3	3.8	21	0	0	4.2	7	0	51
Pear	1.1	18.1	1.3	10	1	1.7	2.6	4.8	1	42
Apple	0.7	12.3	0.8	10	1	0.6	1.6	3.9	1	32
Cucumber	1.4	2.1	1.7	5	2	1.1	3.5	4.5	0	22

NRFI Score = sum of percent daily values for 9 nutrients to encourage. (nutrient weight per cup/DV)x100. Based on 2000 calorie diet.



All produce is good for you, and are listed as Foods to Encourage, but the NRFI scores some commodities higher than others, giving the consumer of these fruits and vegetables more bang for their buck from a nutritional standpoint. The following list categorizes produce varieties according to their NRFI scores.

Healthy

Zucchini

Squash Yellow

Watermelon

Onion

Pear

Apple

Cucumber

Healthier

Broccoli

Cabbage (Red)

Cabbage (Green)

Potato

Tomato

Honeydew

Sweet Corn

Healthiest

Cantaloupe

Squash (winter)

Sweet Potatoes

Bell Peppers (Red)

Carrot

Orange

Bell Peppers (Green)

Handling Guide

The following section provides resources for proper storage and handling of produce, by commodity type. This includes information on ethaline sensitivity, as well as quality inspection guidelines. Keep in mind the less we sort and handle produce, the fresher and of higher quality it will be when clients receive it.



<http://www.thekitchn.com/the-kitchens-guide-to-storing-fruits-and-vegetables-tip-roundup-176>

Apples

Receiving and Inspecting

- Apples should have smooth skin
- Scarring and weather acceptable
- Bruising acceptable

Peak Season in Minnesota

- Late August through early October for fresh apples
- Apples are a store crop and are year-round due to long-term storage

NRFI

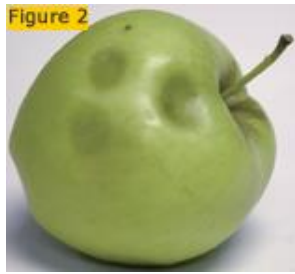
Score: 32 (Healthy)

- Good Source of Fiber
- Combine with other commodities for maximum nutritional value

Storage and Handling

Considerations	Warehouse Control
Temperature	Apples should be stored at 32-34°F
Relative Humidity	85-95%
Ethylene PRODUCER	<ul style="list-style-type: none">• Ethylene producer, do not store next to ethylene sensitive products. Storing near ethylene sensitive commodity will cause increased rate of maturation for surrounding commodities.• Don't store next to bananas, carrots, etc.
Odor SENSITIVE	<ul style="list-style-type: none">• Odor-sensitive, do not store next to odor-producing products. This particular commodity will take on the scent of surrounding odor-producing commodities.• Don't store next to onions, oranges, etc.

Acceptable



Bruises



Superficial spot

Not acceptable



Blue mold



Gray mold



Alternaria rot



Bull's eye rot

Bananas

Receiving and Inspecting

- Bananas should have minimal bruising
- Avoid fruit with damaged skin
- Minor bruising acceptable

Peak Season in Minnesota

- Not grown in Minnesota, but usually available year round
- Short shelf life calls for prompt distribution

NRFI

Score: NA

- Bananas are high in potassium and give quick energy, proving them valuable in any diet
- Combine with other commodities for maximum nutritional value

Storage and Handling

Considerations	Warehouse Control
Temperature	Bananas should be stored at 56-58°F
Relative Humidity	85-95%
Ethylene SENSITIVE	<ul style="list-style-type: none">• Ethylene sensitive, do not store next to ethylene producers. If stored next to an ethylene producer, this commodity will have an increased rate of maturation.• Don't store next to apple, pears, etc.

Acceptable



A few bruises



Slight speckling

Not acceptable



Chill damage



Overripe

Bell Peppers

Receiving and Inspecting

- Bell Peppers should be firm in texture
- Scarring and weather acceptable
- Dull coloring acceptable but should be examined thoroughly

Peak Season in Minnesota

- June through August for fresh peppers
- Expect an abundance of both green and red peppers during Minnesota summers

NRFI

Score: Green Peppers 143, Red Peppers 196 (Healthiest)

- Bell peppers give 100% of your daily value of Vitamin C and hold high percentages of Vitamin A.
- Combine with other commodities for maximum nutritional value

Storage and Handling

Considerations	Warehouse Control
Temperature	Bell peppers should be stored at 45-50°F
Relative Humidity	85-95%
Ethylene SENSITIVE	<ul style="list-style-type: none">• Ethylene sensitive, do not store next to ethylene producers. If stored next to an ethylene producer, this commodity will have an increased rate of maturation.• Don't store next to apple, pears, etc.
Odor PRODUCER	<ul style="list-style-type: none">• Odor-producer, do not store next to odor-sensitive commodities. This commodity will attach its scent to surrounding odor-sensitive produce.• Don't store next to sweet corn, potatoes, etc.

Acceptable



Variations in colors



Surface cracks, blemishes, slight puckering

Not acceptable



Decay, heavy puckering or rotting



Mold

Broccoli

Receiving and Inspecting

- Broccoli should be firm
- Some yellow color is ok
- Broccoli should not be limp

Peak Season in Minnesota

- June through July expect peak broccoli season

NRFI

Score: 132 (Healthier)

- Good Source of Vitamin A and Vitamin C
- Combine with other green produce for maximum nutritional value

Storage and Handling

Considerations	Warehouse Control
Temperature	Broccoli should be stored at 32°F
Relative Humidity	90-98%
Ethylene SENSITIVE	<ul style="list-style-type: none">• Ethylene sensitive, do not store next to ethylene producing products. Storing near ethylene producing commodity will cause increased rate of maturation for this commodity.• Don't store next to apples, pears, etc.

Acceptable



Some yellowing



Multi-colored varieties

Not acceptable



Bacterial soft rot on broccoli

Discoloration from rot (soft, dark spots)



Moldy

Cantaloupe

Receiving and Inspecting

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

Peak Season in Minnesota

- August and September for most melons, including cantaloupe

NRFI

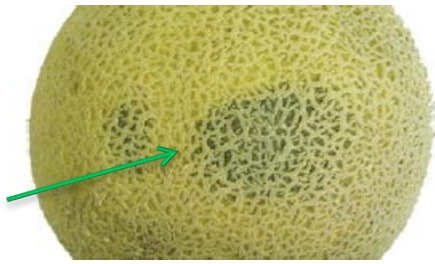
Score: 229 (Healthiest)

- Cantaloupe is the highest rated commodity on the NRFI scale.
- High scores in Potassium, Vitamin A, and Vitamin C.

Storage and Handling

Considerations	Warehouse Control
Temperature	Cantaloupe should be stored at 36-41°F
Relative Humidity	90-98%
Ethylene PRODUCER	<ul style="list-style-type: none">• Ethylene produce. Storing near ethylene sensitive commodity will cause increased rate of maturation for surrounding commodities.• Don't store near bananas, carrots, etc.

Acceptable

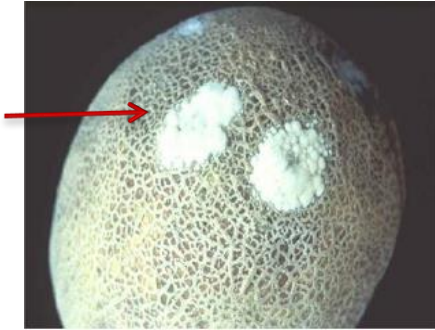


Slight discoloration



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.

Peak Season in Minnesota

- August through October for fresh carrots

NRFI

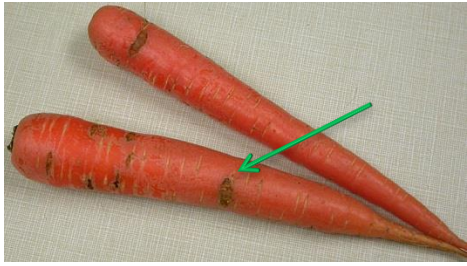
Score: 153 (Healthiest)

- The highest rated Vitamin A producer
- Gives important nutrients not abundant in green vegetable

Storage and Handling

Considerations	Warehouse Control
Temperature	Carrots should be stored at 33-35°F
Relative Humidity	90-98%
Ethylene SENSITIVE	<ul style="list-style-type: none">• Ethylene sensitive, do not store next to ethylene producers. If stored next to an ethylene producer, this commodity will have an increased rate of maturation.• Don't store next to apple, pears, etc.
Odor SENSITIVE	<ul style="list-style-type: none">• Odor-sensitive. This particular commodity will take on the scent of surrounding odor-producing commodities.• Don't store next to odor-producing products such as onions, oranges, etc.

Acceptable



Spots on outer surface



Odd shapes

Not acceptable



Rot



Mold

Sweet Corn

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.

Peak Season in Minnesota

- August through September for fresh sweet corn

NRFI

Score: 78 (Healthy)

- Good source of protein
- Abundant during the summer months

Storage and Handling

Considerations	Warehouse Control
Temperature	Sweet corn should be stored at 34-38°F
Relative Humidity	95%
Odor SENSITIVE	<ul style="list-style-type: none">• Odor-sensitive. This particular commodity will take on the scent of surrounding odor-producing commodities.• Don't store next to odor-producing products such as onions, oranges, etc.

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)

Peak Season in Minnesota

- July through August for fresh carrots

NRFI

Score: 22 (Healthy)

- Lowest rated commodity on NRFI scale.
- Extremely abundant during summer months.

Storage and Handling

Considerations	Warehouse Control
Temperature	Cucumbers should be stored at 45-50°F
Relative Humidity	85-95%
Ethylene SENSITIVE	<ul style="list-style-type: none">• Ethylene sensitive, do not store next to ethylene producers. If stored next to an ethylene producer, this commodity will have an increased rate of maturation.• Don't store next to apple, pears, etc.

Acceptable



Outer blemishes



Slight yellowing

Not acceptable



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



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
- Color should be green (or mostly green)

Peak Season in Minnesota

- May through August for fresh lettuce

NRFI

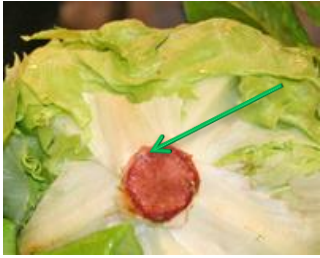
Score: 83 (Healthy)

- A popular commodity that doesn't hold much nutritional value compared to other leafy greens.
- Extremely abundant during summer months.

Storage and Handling

Considerations	Warehouse Control
Temperature	Lettuce should be stored at 34-36°F
Relative Humidity	90-98%
Ethylene SENSITIVE	<ul style="list-style-type: none">• Ethylene sensitive, do not store next to ethylene producers. If stored next to an ethylene producer, this commodity will have an increased rate of maturation.• Don't store next to apple, pears, etc.

Acceptable



Brown core

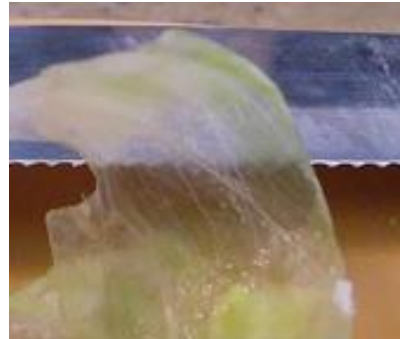


Tear/slight bruising

Not acceptable



Wilted leaves



Translucent leaves (freeze damage)



White mold

Onions

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

Peak Season in Minnesota

- September through October for fresh onions

NRFI

Score: 51 (Healthy)

- Onions hold great flavoring for meals and are popular among consumers
- Little nutritional value

Storage and Handling

Considerations	Warehouse Control
Temperature	Onions should be stored at 40-60°F
Relative Humidity	85-95%
Ethylene SENSITIVE	<ul style="list-style-type: none">• Ethylene sensitive, do not store next to ethylene producers. If stored next to an ethylene producer, this commodity will have an increased rate of maturation.• Don't store next to apple, pears, etc.
Odor PRODUCER	<ul style="list-style-type: none">• Odor-producer, this commodity will attach its scent to surrounding odor-sensitive produce.• Don't store next to sweet corn, potatoes, etc.

Acceptable

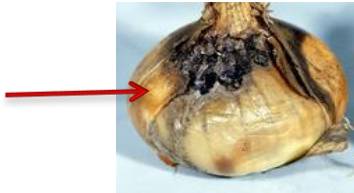


Small sprouts



Unusual shape

Not acceptable



Bulb rot



Bacterial soft rot



Neck rot

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.

Peak Season in Minnesota

- NA

NRFI

Score: 150 (Healthiest)

- With the highest Vitamin C rating across the board, oranges supply necessary nutrients for skin health

Storage and Handling

Considerations	Warehouse Control
Temperature	Oranges stored at these locations FL: 32-34°F; CA: 45-48°F; AZ & TX: 32-48°F
Relative Humidity	85-95%
Odor PRODUCER	<ul style="list-style-type: none">• Odor-producer, this commodity will attach its scent to surrounding odor-sensitive produce.• Don't store next to sweet corn, potatoes, etc.

Acceptable



Slightly green oranges



Small spots

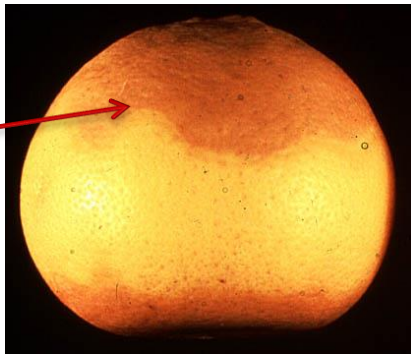
Not acceptable



Mold



Mold in navel



Stem end decay



More mold (green)

Pears

Receiving and Inspecting

- Pears should be at least fairly firm in texture
- Scarring and weather acceptable
- Bruising acceptable

Peak Season in Minnesota

- NA

NRFI

Score: 42 (Healthy)

- Accessible and portable fruit that is fairly durable, but lacks significant nutritional value
- Combine with other commodities for maximum nutritional value

Storage and Handling

Considerations	Warehouse Control
Temperature	Pears should be stored at 32°F
Relative Humidity	90-98%
Ethylene PRODUCER	<ul style="list-style-type: none">• Ethylene producer, do not store next to ethylene sensitive products. Storing near ethylene sensitive commodity will cause increased rate of maturation for surrounding commodities.• Don't store next to bananas, carrots, etc.
Odor SENSITIVE	<ul style="list-style-type: none">• Odor-sensitive, do not store next to odor-producing products. This particular commodity will take on the scent of surrounding odor-producing commodities.• Don't store next to onions, oranges, etc.

Acceptable



Variations in colors and green unripe



Some surface blemishes and slight bruising

Not acceptable



Heavy bruising and mushiness



Moldy

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

Peak Season in Minnesota

- July through October

NRFI

Score: 109 (Healthier)

- High amounts of potassium and iron
- Also high in carbohydrates

Storage and Handling

Considerations	Warehouse Control
Temperature	Potatoes should be stored at 45-50°F
Relative Humidity	85-95%
Odor SENSITIVE	<ul style="list-style-type: none">• Odor-sensitive, do not store next to odor-producing products. This particular commodity will take on the scent of surrounding odor-producing commodities.• Don't store next to onions, oranges, etc.

Acceptable



Small peepers (sprouts)



Odd lumps

Not acceptable



Moldy cut



Green potato (solanine)



Common scab



Late blight

Winter Squash

Receiving and Inspecting

- Winter squash should be firm in texture
- Colors vary

Peak Season in Minnesota

- Late August through early November

NRFI

Score: 219 (Healthiest)

- One of our most nutritious commodities according to NRFI scale
- High in calcium, Vitamin A, and Vitamin E

Storage and Handling

Considerations	Warehouse Control
Temperature	Winter squash should be stored at 50-55°F
Relative Humidity	85-95%
Ethylene SENSITIVE	<ul style="list-style-type: none">• Ethylene sensitive, do not store next to ethylene producers. If stored next to an ethylene producer, this commodity will have an increased rate of maturation.• Don't store next to apple, pears, etc.

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

Summer Squash

Receiving and Inspecting

- Summer squash should be firm in texture
- Colors vary, with shiny, tender rinds

Peak Season in Minnesota

- The entire month of July

NRFI

Score: 52 (Healthy)

- Not as nutritious as its hard-shell counterpart
- most common commodity throughout July

Storage and Handling

Considerations	Warehouse Control
Temperature	Summer squash should be stored at 41-50°F
Relative Humidity	95%
Ethylene SENSITIVE	<ul style="list-style-type: none">• Ethylene sensitive, do not store next to ethylene producers. If stored next to an ethylene producer, this commodity will have an increased rate of maturation.• Don't store next to apple, pears, etc.

Acceptable



Irregular shapes



Discoloration, slight surface blemishes

Not acceptable



Blossom end rot



Mold

Tomatoes

Receiving and Inspecting

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

Peak Season in Minnesota

- July through August

NRFI

Score: 113 (Healthier)

- Nutritious in many categories
- Good sources of potassium, Vitamin A/C, and fiber

Storage and Handling

Considerations	Warehouse Control
Temperature	Fully ripe tomatoes should be stored at 55-60°F. Less ripe tomatoes should be stored at 62-68°F
Relative Humidity	85-95%

Acceptable

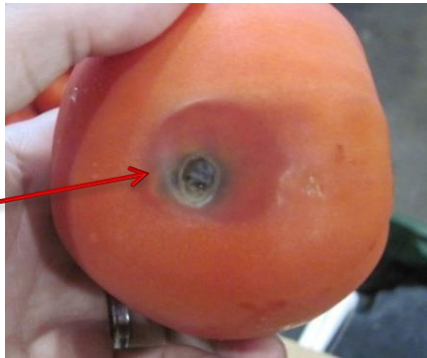


Slight dent



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.

Peak Season in Minnesota

- August primarily

NRFI

Score: 54 (Healthy)

- Delicious, popular fruit during summer months
- Does not hold significant nutritional value

Storage and Handling

Considerations	Warehouse Control
Temperature	Onions should be stored at 50-60°F
Relative Humidity	85-95%
Ethylene SENSITIVE	<ul style="list-style-type: none">• Ethylene sensitive, do not store next to ethylene producers. If stored next to an ethylene producer, this commodity will have an increased rate of maturation.• Don't store next to apple, pears, etc.

Acceptable



White/yellow patch



Small spots

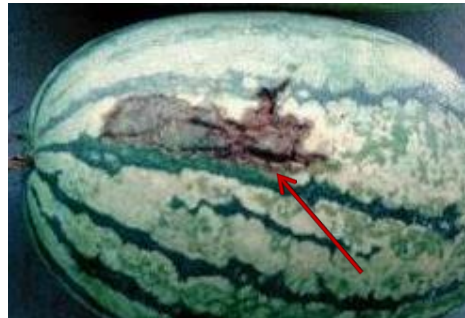
Not acceptable



Decay



Anthracnose



Fruit blotch

First Expiring, First Out

First expiring, first out is the simple practice of placing food that will expire earlier, at the front of the shelf. This ensures that food which could have been given out does not expire on the shelf because a newer version of the produce was placed in front of it.

While most produce will not be at the agency for any length of time, some produce, like potatoes, may. It is important to ensure that the potatoes that have been at the agency the longest get handed out first.

In addition, when sorting your produce, you will want to pull certain items out for distribution right away, while other items will last a few days. For example, if you received raspberries and apples it would be better to distribute the raspberries before the apples because apples generally have a longer shelf life - compared to raspberries.

Remember produce that is going to spoil the fastest should be moved the fastest.

FEFO = First Expired, First Out

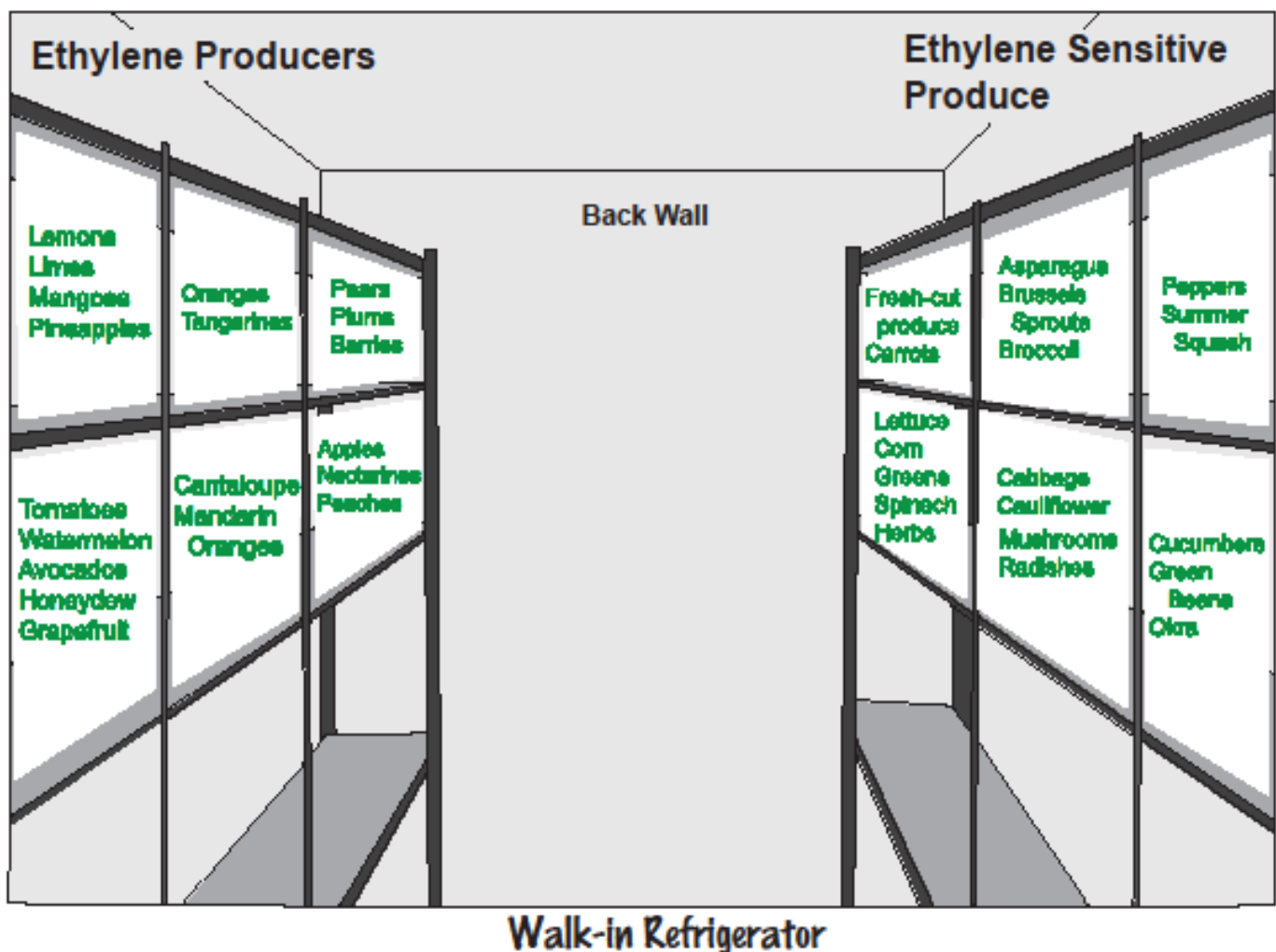


Storing Fresh Produce

Refrigerators should maintain a temperature of 41 °F, or less, but temperatures inside a refrigerator can range from colder (32 °F) to warmer (41 °F), depending on the location. Colder temperatures are found in the back and warmer temperatures in the front, near the door. Some kinds of produce should be stored at warmer temperatures near the door for best quality. Location of fruits and vegetables is important because fruits, in general, produce ethylene gas, which fosters natural ripening, but it also can cause most vegetables and a few non-ethylene producing fruits to deteriorate more quickly and develop undesirable characteristics. Ideally, ethylene-producing fruits should be stored in the refrigerator as far from ethylene-sensitive fruits and vegetables as possible.

These items should not be refrigerated. Store ideally between 60 °F and 70 °F.

Bananas Sweet Potatoes Potatoes Dry Onions



PRODUCE STORAGE GUIDE

Vegetable	How to Store	Shelf-life	Comments
Asparagus	Cool and moist (32-36°F)	3-4 days	Wrap stalks in damp paper towel, store in sealed plastic bag or snap off the woody bottoms of stalks, and store standing in 2 inches of water. Watch tips for signs of decay.
Beans, green	Cool and moist (32-36°F)	3-5 days	Store in perforated plastic bag in warmest part of refrigerator. Temperatures below 32-36°F damage beans.
Beets, Turnips, Rutabagas	Cold and moist	1 month	Trim greens a few inches above bulb and store roots in vented plastic bag in crisper. Store greens separately for up to 3 days in sealed plastic bag in crisper. Do not wash before using.
Bok Chai	Cold and moist	4-5 days	Store in crisper in vented plastic bag; wash well before using.
Broccoli	Cold and moist	4-5 days	Store in vented plastic bag; wash thoroughly before using.
Brussels sprouts	Cold and moist	1-2 weeks	Trim damaged leaves and store in moist vented plastic bag.
Cabbage, cut	Cold and moist	2-3 days	Wrap tightly in plastic wrap.
Cabbage, whole	Cold and moist	4-6 weeks	Remove loose leaves and store in vented plastic bag.
Carrots	Cold and moist	4-6 weeks	Store in crisper. Remove tops 1 inch from carrot, rinse and store in sealed plastic bag. Wash thoroughly before using.
Cauliflower	Cold and moist	3-5 days	Store stems side down in vented plastic bag. Wrap cut cauliflower tightly in plastic. Wash thoroughly before using.
Chard, Collards, Mustard, other leafy greens	Cold and moist	3-5 days	Wrap in wet paper towel and store in sealed plastic bag in coldest part of refrigerator.
Celery	Front of refrigerator	2 weeks	Wrap in damp paper towel and then aluminum foil; wash thoroughly before using.
Cilantro and Parsley	Cold and moist	1 week	Remove rotten leaves. Wrap loosely in moist paper towel and store loosely in plastic bag in crisper or cut off bottom of stem, and store unrefrigerated in 1 inch of water.
Corn, sweet	Cold and moist	2-3 days	Use as soon as possible for best flavor and texture, and store in husks. If immediate use is not possible, encourage guests to cut kernels off cob and freeze for future use.

Vegetable	How to Store	Shelf-life	Comments
Radishes	Cold and moist	1 month	Store without tops in vented plastic bag in crisper.
Spinach	Cold and moist	2-3 days	Remove damaged leaves, wash thoroughly and remove excess moisture. Wrap with paper towel and store loosely in sealed plastic bag in crisper away from fruits.
Sweet Potatoes	Cool, dry	Up to 1 month	Store one week at room temperature, up to one month at 50°F (lower temperature cause decay). Avoid excessive handling before use.
Tomatoes	Refrigeration ruins flavor, store at room temperature	2-3 days when ripe	Store at room temperature until ripe and then turn stem-side down and use within 3 days. Ripen tomatoes stem side up in sealed paper bag or newspaper. Sliced or cooked tomatoes should be refrigerated in sealed plastic bag and used within 2 days.
Winter Squash	Cool, dry, dark, and well ventilated	Up to 3 months	Check occasionally for soft or rotten spots; remove damaged area and use quickly if decay is found. Cut squash can be wrapped tightly in plastic and refrigerated for up to 1 week.
Zucchini and Summer Squash	Cool spot in kitchen or bagged in crisper	5 days	Summer squash loses color, firmness, and flavor if stored below 40°F. Soft-skinned squash bruises easily. Wash squash just before using.
Peppers, bell and hot	Cool and dry (45-50°F)	1 week	Store whole in paper bag in crisper, store cut peppers in plastic bag in refrigerator for up to 2 days. Peppers decay quickly below 45-50°F degrees. Store away from pears and apples.
Parsnips	Cold and moist	4 months	Sweetens after 2 weeks storage at 32°F degrees in sealed plastic bag. Wash well before using. Parsnips need moist storage conditions.
Onions, bulb	Cool, dry, and well -ventilated (55-60°F)	3-4 weeks	Store away from potatoes, which will cause decay. Store loosely with good ventilation at room temperature for 1-2 months, cut onions can be refrigerated for up to 1 week. Do not freeze onions.
Onions, green	Cold and moist	5 days	Remove rubber band or twist tie and store in sealed plastic bag in crisper. Wash thoroughly and cut away any damaged parts before using.
Peas	Cold and moist	3-4 days	Store shelled peas in sealed plastic bags, unshelled peas in vented plastic bag. Wash before using.
Potatoes	Cool, dark, dry, and well ventilated, (45-50°F)	3-5 weeks	Store away from onions; keep away from light (especially white and yellow potatoes). Refrigeration shortens shelf life. Use new potatoes within 1 week.

Fruit	How to Store	Shelf-life	Comments
Apples	Place apples in a perforated plastic bag, sprinkle with water, and store in the coldest area of the refrigerator.	1-2 months	Keep apples away from other fruits and vegetables because they give off a gas called ethylene that speeds up ripening.
Avocados	Store unripened avocados at room temperature. Store ripe avocados in the refrigerator.	2-3 days after ripe	When the fruit feels slightly soft, it is ripe.
Bananas	Room temperature	2-3 days after ripe	Ripe bananas can be refrigerated without damaging the fruit, but refrigeration will turn the skins black.
Berries	Do not wash. Refrigerate as soon as possible after picking.	2-3 days	Spread out in a thin layer on a tray or plate. Do not cover and place in the refrigerator. Wash gently just before using.
Grapefruit	Store in a perforated bag or in a bowl. Extend storage time by placing in a sealed bag and keep in the salad crisper drawer of the refrigerator.	1-2 weeks	
Oranges	Ripen at room temperature and then refrigerate.	2-3 weeks	
Peaches	Ripen at room temperature. To speed ripening, place in a loosely closed paper bag. Refrigerate when ripe.	2-3 days	Storing peaches in refrigerator for too long will cause dehydration and "woody" texture.
Pears	Ripen at room temperature and then store in coldest part of the refrigerator.	10-14 days	Keep pears away from other fruits and vegetables because they give off a gas called ethylene that speeds up ripening.
Watermelon	Uncut watermelon can be stored at room temperature for a few days, but cut sections should be wrapped with plastic wrap and refrigerated as soon as possible.	6-8 days	
Lemons	Can be stored at room temperature, but will stay fresh longer if stored uncovered in the refrigerator. Keep fruit from touching each other.	2-5 weeks	
Limes	Place in a plastic bag and store in the refrigerator.	1-3 weeks	

Vegetable	How to Store	Shelf-life	Comments
Cucumbers	Store on top shelf of refrigerator or cool spot in the kitchen	1 week for waxed, less for unwaxed	Wrap in plastic if refrigerating. Do not store with apples or tomatoes. Refrigerate sliced cucumber in sealed plastic bag and use within 3 days. The skin contains most of the vitamins.
Eggplant	Cool spot in kitchen (55°F)	1 week	Do not refrigerate; will discolor and decay if stored below 50°F.
Garlic	Cool, dark, and dry	2-3 months	Refrigeration shortens shelf life; store away from other foods.
Leeks	Cold and moist	1 week	Dry excess water and store loosely wrapped in plastic or in plastic bag in crisper. Cut off bottom of stem and green top leaves before using. Cut in half lengthwise and wash thoroughly.
Lettuce	Cold and moist	4 days to 2 weeks by variety	Store away from fruits in vented plastic bag. Remove damaged leaves before storing and wash well before using. Dry with paper towel or salad spinner. Store away from fruits. The more firm the leaves, the longer it will keep.
Mushrooms	Cool and dry	5-7 days	Store in package, once opened store loosely in paper bag.
Peppers, bell and hot	Cool and dry (45-50°F)	1 week	Store whole in paper bag in crisper. Store cut peppers in plastic bag in refrigerator for up to 2 days. Peppers decay quickly below 45-50°F degrees. Store away from pears and apples.
Parsnips	Cold and moist	4 months	Sweetens after 2 weeks storage at 32°F degrees in sealed plastic bag. Wash well before using. Parsnips need moist storage conditions
Onions, bulb	Cool, dry, and well -ventilated (55-60°F)	3-4 weeks	Store away from potatoes, which will cause decay. Store loosely with good ventilation at room temperature for 1-2 months. Cut onions can be refrigerated for up to 1 week. Do not freeze onions.
Onions, green	Cold and moist	5 days	Remove rubber band or twist tie, and store in sealed plastic bag in crisper. Wash thoroughly, and cut away any damaged parts before using.
Peas	Cold and moist	3-4 days	Store shelled peas in sealed plastic bags; unshelled peas in vented plastic bag. Wash before using.
Potatoes	Cool, dark, dry, and well ventilated, (45-50°F)	3-5 weeks	Store away from onions, keep away from light (especially white and yellow potatoes). Refrigeration shortens shelf life. Use new potatoes within 1 week.

Recipes

<http://www.leannebrown.ca/cookbooks/>

<https://hungerandhealth.feedingamerica.org/healthy-recipes/>

<http://www.licares.org/wp-content/uploads/Healthy-Quantity-Cookbook-from-NH-Obesity-Prevention-Program-for-Soup-Kitchens-Shelters.pdf>

<https://reallifegoodfood.umn.edu/>

<http://www.fns.usda.gov/fncs-recipe-box>