

Urban Ventures Farm and Nutrition



Allina Health 

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Urban Ventures Farm and Nutrition

ACKNOWLEDGEMENTS

Introducing children to growing good food isn't always a picnic. There are seeds to plant, weeds to pull, insects to fight, and all the hard work can be devoured by hungry rabbits. But the glorious outcomes of eating your own tomatoes, cucumbers or lettuce make us forget the hardship. Parenthood and growing nutritious food for our children are synonymous; it isn't easy but well worth the effort.

Eight years ago, Urban Ventures began an experiment in feeding people with a question, "Can an urban farm act as an organic food shelf for families who struggle having access to fresh produce?" Besides food access, we also learned about the importance that childhood nutrition has on a child's development — eating well not only makes them strong but feel better as well.

Neighbors coming to our Farm Stand ask us for tips on growing nutritious food so we decided to create this book that highlights the fruits and vegetables we grow on our urban farm, the lessons we've learned along the way, and interesting facts that will help one's quest as an urban farmer.

The Urban Ventures Farm has grown over the years to include six acres of farm land, three hoop houses, aquaponics, hydroponics, bees and chickens. Our food is accessible through our Farm Stand, Mobile Market Truck and school visits.

Kudos for this book go to Clarisse Randolph, Gary Ross, Julia Otten and Allina Health.

Mark-Peter Lundquist
Director, Urban Ventures Farm and Nutrition



Introduction

Urban Ventures has been at the forefront of successful community development in south Minneapolis for more than 25 years. Our mission is: Educating kids, strengthening their families, and building a healthy community.

The Urban Farm is an Urban Ventures project that addresses poor nutrition, food insecurity, agriculture education and farming experiences for hundreds of youth and families.

Visit urbanventures.org to learn about the urban farm and volunteer opportunities.

Symbols Used in This Book



SEASONS

These symbols show that the produce item is available at farmers markets during that season.



NUTRITION

These symbols show that one serving of the produce item contains 10% or more of the recommended daily value of that nutrient.

Words Used in This Book

Biological control: control of a pest by introduction of a natural predator

Bolt or Bolting: a plant begins producing seeds and a flowering stem making the plant taste bitter

Cover crops: plant(s) grown to cover the ground in off seasons (winter, or a rotation year when vegetables are not planted)

Crop rotation: a plan of changing what crops or crop families are grown in a particular spot each season or year

Cultivated: prepared and grown for a purpose

Dormant: alive but not active

Erosion: gradual wearing away of soil or rock caused by water and wind

Fruit: what a flower can develop into after pollination and it is the seeding-bearing part of a plant

Larva: immature form of an insect and different than adult form

Loam: a soil composed of a mix of sand, silt and clay

Mulch: an organic or inorganic layer of material that covers the soil

Organic matter: plant and animal material that is in the process of decomposing

Parasitize: to live in or on another organism and take resources from it

Pollinate: transfer of pollen from a male part (anther) to a female part (stigma) in a flower

Root systems: network of all roots for a plant, made up of primary and secondary roots. Anchors plant in soil, absorbs water and mineral and stores food

Soil aggregates: soil particles that bind to each other

Soil degradation: decline in soil health and quality due to mismanagement, natural causes (erosion) or both

Soil structure: arrangement of solids and pore space in soil

True leaves: second set of leaves that develop on a plant, and resemble leaf shape of mature plant

Wilting: becoming limp and weak from lack of water or heat

General Education

EQUIPMENT

Seeds: a baby plant in a seed coat that will sprout under right conditions. They come in all shapes and sizes, and can be bought in catalogs, stores and online, or saved from previous plants.

Planting mix: a soilless blend of lightweight organic matter that will hold water and provide some nutrients for a seed as it sprouts into a seedling.

Seed container: a small pot or tray a seed will sprout and start its growth in. A pot will hold one plant, while a tray has many holes for many plants to be started.

Trowel: a small, hand-held tool used for digging small holes for transplants, weeding or creating a seedbed.

Shovel: a large tool used for digging big holes or trenches for seeds or plants, weeding, moving soil and creating a seedbed.

Hoe: a large tool used to disturb soil and weed.

Rake: a large tool used to move and smooth soil when creating walkways and seedbeds.

Watering can: a container used to bring water to plants.

Tip

Egg cartons can be used as a seed tray. They can be planted directly in the garden because they decompose.



LOCATION

Plants need four main things to survive, so when choosing a spot be sure that they will have:

Light: choose a sunny spot where sunlight will reach the plant for a least of 6 hours each day. Avoid places where buildings or trees may shade the plant during the day.



Water: choose a spot that has good drainage (water doesn't puddle up on the surface) and is near a water source, or close enough for you to carry a watering can or drag a hose often.

Nutrients: choose a spot with “good” soil! Signs of “good” soil include dark brown color, it breaks apart easily, plants are already growing there, and there is not pollution. Make sure the soil is at least 1 foot deep so roots have room to grow!

Air: choose a spot with gentle airflow so that plants won't be exposed to harsh winds. Plants should be spaced so that air can circulate. No air movement encourages diseases. Remember roots need air too! Putting organic matter into your soil can help create pore space so roots can breathe.

Tip

Take advantage of southern slopes and exposures! They will receive the most sunlight, warm quicker in the spring and stay warm longer in the fall.

SOIL

What is soil? Soil is a mixture of solids and pore space. An ideal soil should be:

- 45% mineral
- 25% air
- 25% water
- 5% organic matter.



What's a soil mineral?

All soils are made up of the minerals sand, silt and clay.

Sand is the largest particle, has a lot of pore space for air and allows water to drain easily, but doesn't hold nutrients.

Silt is smaller and more lightweight, making it prone to erosion. It has moderate pore space and can hold nutrients.

DIRECT SEED VS. TRANSPLANT

Direct seed: to put seeds directly into the soil outside to begin growth. Root vegetables, beans and peas, and plants with a delicate root systems benefit from being planted this way.

Soil temperature and moisture must be just right for the seed to sprout!

Tip

The soil or planting mix should always be moist before planting. Be sure to water once you're done seeding.



Clay is the smallest particle and likes to stick together. It holds nutrients very well but doesn't allow water to drain easily.

What do I want?

Your soil should:

- be a mixture of the three minerals so you get the benefits of each, which is called a loam
- have organic matter, or decayed/decaying plant and animal tissues
- have a balance of pore space, so that roots can breathe oxygen but water is still available when they're thirsty
- have life! A healthy soil is a "living soil," full of organisms from worms, insects and spiders to microbes and fungi.

Transplant: to start seeds in a container with planting mix indoors (in a sunny window or greenhouse), and then move outside once the seedling has at least one set of true leaves.

This helps extend the growing season and gives baby plants an advantage against outdoor threats (weather, insects).



Plants such as peppers, tomatoes, melons, onions, broccoli benefit from being transplanted in Minnesota.

Tip

Plants raised indoors need to get used to cooler temperatures. For 2 weeks before they are planted outdoors, move them outside for a few hours each day and then bring them back inside. This process is known as hardening off.

IRRIGATION

Irrigate: to supply water to land and crops by artificial means.

Why? Just like us, plants need water in order to survive. They get some from rain, but will depend on you to provide them with water too so they can grow. A plant's water needs will change throughout its life cycle.

How? You can use a watering can, hose, or sprinkler to transport water to plants. Aim the water at the soil, not at the plant(s).

Under-watering: When plants don't get enough water, it affects their health.

Tip

On average, a garden needs at least 1 inch of water each week.

WEEDS

What is a weed? A weed is a plant that is out of place. To gardeners, weeds refer to plants growing where they're not wanted and in competition with cultivated plants.

Why are they "bad?" Weeds can take light, water, nutrients and space from the plants you want in your garden. They can also provide homes for pests and diseases that can harm plants.

Did You Know?

Weeds aren't all bad! Some can be edible and nutritious (lamb's quarter), have medicinal value (dandelion), and their flowers provide food for pollinators.



Tip

Put plants with similar water needs close to each other.

Plants that aren't getting enough water will have:

- wilting and dry soil
- slow growth
- yellow and dead leaves toward the bottom of the plant that are dry and crispy
- leaf curling.

Over-watering: Plants can get too much water as well! Plant roots need oxygen in the soil and too much water will drown them. They will have:

- wilting and wet soil
- water-soaked blisters
- yellow and dead leaves at the top and bottom of plant that are soft and limp
- root rot.

Tip

Many weeds can regrow from small root pieces left behind. Try to completely remove the whole plant and root system from the soil.

What should I do?

Prevent weeds from sprouting by disturbing the soil as little as possible when planting and during the season. You can also use mulch to block light from reaching weeds so they can't grow.

- Anticipate weeds by assuming there are weed seeds everywhere in your garden! Use cover crops when you're not growing vegetables to compete with weeds and stop them from establishing.
- Get rid of weeds by using different tools to remove them from your garden. Hoes and flame weeders can be used to kill small weed seedlings. Trowels and weeders can be used to dig out established weeds.

INSECTS

Insects are very common in gardens. Without them, we would not be able to harvest vegetables, yet some hold the power to destroy a garden!

Insects generally fall in three categories: pollinators, pests and beneficial insects. Identification is important so that we know which ones to attract and which ones to keep away.

Pollinators have perhaps the most important role in the garden. They transfer pollen from one flower to another, which fertilizes to create fruit.

Without pollinators, we wouldn't be able to grow any fruits, such as tomatoes, cucumbers, squash, and peppers. Common pollinators include bees, wasps, butterflies, moths and flies.

Tip

If you're growing plants that require pollination but in a space without insects (such as a closed greenhouse or high balcony), you can hand pollinate with a Q-tip®.

Pests are insects that can greatly harm your garden. They may eat your plants or live in them, which will reduce yields, slow or stop plant development and possibly transmit diseases. Common pests in Minnesota include:

- aphids
- whiteflies
- squash bugs
- squash vine borers
- leaf miners
- cucumber beetles
- Japanese beetles
- flea beetles
- potato beetles
- cabbage worms.



Control pests by practicing a crop rotation, hand picking, spraying neem oil or castile soap solution, using barriers, sticky traps or biological control.

Beneficial insects are the superhero of the garden. They prey and feed on pests (biological control), and some will pollinate as well! Some will eat eggs and larvae of pests, others may parasitize (live on) adult pests.

Grow native plants and flowers to attract beneficial insects to your garden. Some can be ordered from catalogs and online for you to release, but it's best to try and attract them naturally. Common beneficials in Minnesota include:

- lady beetles
- green lacewings
- parasitic wasps
- tachinid flies
- ground beetles
- minute pirate bugs.



Did You Know?

Beneficials go beyond insects! Certain spiders, mites, nematodes, birds and bats can help control pests as well!

COMPOST

What is compost? A mixture of decayed/decaying natural materials that are broken down by various organisms.

Why is it important? It provides many benefits such as:

- recycles plants and food
- creates fertilizer for plants and food for soil microbes (bacteria, actinomycetes, fungi, protozoa and nematodes)
- increases soil water retention
- enhances soil structure.

How do I start? Choose a site to start your compost pile or place your bin. As needed, fill it with garden and compostable kitchen waste. Aim to have alternating layers of brown and green material, a ratio of roughly 6 inches brown to 2 inches green.

Toss in garden soil between layers as well to provide the microbes that will be doing the decomposing. The ideal size for a pile is 3 feet by 3 feet by 3 feet.

How do I maintain? You can either actively compost or passively compost, whichever is best for your garden needs.

Active piles require turning (mixing) one to two times each week, reach temperatures of 140 to 160 F, and are best if built all at once (the later you add new material, the longer it will take to break it down). Compost will be ready for use in a few months.

Passive piles require turning one to two times each season, reach temperatures of 70 F to 90 F, and can be added to gradually. Compost will be ready in 1 year or longer.

Both piles should have constant moisture so they feel damp, but water cannot be squeezed out.



Greens (fresh material) to add

- food scraps
- grass clippings
- weeds that haven't gone to seed
- green leaves/plant parts
- coffee grounds

Browns (dried material) to add

- dried-out old plants
- dead leaves (best if shredded)
- hay/straw
- newspaper
- paper towels

What not to add

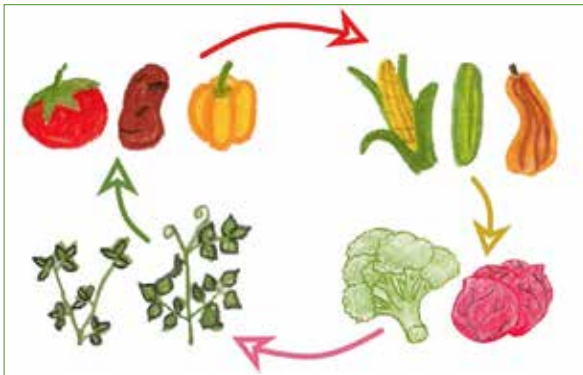
- meat, fish and bones
- glossy and colored paper
- greasy/oily foods
- dairy products
- diseased plants
- animal waste
- anything treated with chemicals

CROP ROTATION

Crop rotation is a plan of changing what crops or crop families are grown in a particular spot each season or year. Diversity is key! It helps manage soil nutrition (different crops take different nutrients, so switching crop families will allow the soil to replenish) as well as pests and diseases (often specific to a certain crop family, so in the absence of that family they do no harm).

An example rotation:

- 1st year: tomato/pepper/eggplant (nightshades)
- 2nd year: zucchini/cucumber/squash (gourds)
- 3rd year: broccoli/cabbage/radish (cole crops)
- 4th year: peas/beans/lentils (legumes).



Cover crop is a plant grown to cover the ground in off seasons (winter, or a rotation year when vegetables are not planted). Cover crops:

- protect against erosion
- improve soil health and fertility
- suppress weeds
- aid in pest and disease control
- increase organic matter
- pollinator food source.

Depending on the time of year and the benefits you're after, the crops to use will vary.

- Warm season grasses (sorghum, Sudan grass) produce a lot of biomass and attract different microbes.

- Cool season grasses (oats, wheat, rye, triticale) produce biomass during cold periods, and keep a living root in the soil that helps maintain microbial life.
- Warm season broadleaves (soybeans, buckwheat, sunflowers) add biomass and some fix nitrogen.
- Cool season broadleaves (vetch, clover, alfalfa tillage radish) add biomass, break up soil with deep roots, and some fix nitrogen.

Mulch is a layer of material that covers the soil. They can be organic (straw, grass clippings, leaves, cover crops, compost) or inorganic (plastic, landscape fabrics). Inorganic mulch will need to be removed at the end of the season. Mulches:

- provide water conservation
- protect against erosion
- suppress weeds
- provide soil temperature regulation
- provide pest control.

Tillage is the act of disturbing the soil through digging, overturning and stirring. It's an ancient practice to create seedbeds, control weeds, loosen soil and add compost and plant residues. It requires balance. Too much tillage can be harmful in the long run with drawbacks such as:

- bringing weed seeds up to the soil surface
- soil degradation
- soil compaction and erosion
- dries soil
- damaging soil life
- breaking up soil aggregates.

Arugula



Nutrition Facts	
Serving Size 1 cup fresh (28g)	
Servings Per Container 1	
Amount Per Serving	
Calories 5	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 20mg	1%
Total Carbohydrate 1g	0%
Dietary Fiber 1g	4%
Sugars 0g	
Protein 1g	
Vitamin A 50%	• Vitamin C 15%
Calcium 2%	• Iron 6%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Brassicaceae (Brassicas, mustard family, cabbage family, cole crops)

Many of the crops in this family are direct descendants of wild mustard, each domesticated for a different harvestable part: leaves (kale), leaf buds (cabbage, Brussels sprouts), stems (kohlrabi), flowers (broccoli, cauliflower) and roots (turnip). This family is sometimes referred to as crucifers as well, because all the flowers have four petals that resemble a cross. They prefer cooler weather, and are best grown in spring and fall. Many leafy members even taste better after undergoing a frost!



Native to:
Mediterranean region



TYPES

There are two main types of arugula. Wild Italian types (though not actually wild) have smaller leaves, are more heat-resistant to bolting and are great raw. Common arugula has a shorter growth time and larger, softer leaves. Both have a peppery and nutty flavor, although it's a bit stronger in "wild" types.



GROWING CONDITIONS

Arugula is one of the easier crops to grow. It has moderate water and low nutrient requirements, and can tolerate partial shade as well (so try planting it next to a taller plant that will keep it out of sunlight during hotter parts of the day). It's best grown in cooler weather (warm weather can promote bitterness), and will be one of your first harvests in the spring! Make sure soil is always moist to help delay bolting.

COMPANION PLANTS

- beets
- bush beans
- carrots
- celery
- cucumber
- onion
- potatoes
- spinach

PLANTS TO AVOID

- strawberries

TIP:

Arugula flowers are also edible! If plants bolt, wait for them to flower and collect blossoms to add peppery bites to dishes.



PESTS

The flea beetle eats leaves and creates tiny holes.



Bean



Nutrition Facts

Serving Size 1 cup green beans (100g)
Servings Per Container 1

Amount Per Serving

Calories 30 Calories from Fat 0

% Daily Value*

Total Fat 0g **0%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 5mg **0%**

Total Carbohydrate 7g **2%**

Dietary Fiber 3g **12%**

Sugars 3g

Protein 2g

Vitamin A 15% • Vitamin C 20%

Calcium 4% • Iron 6%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

		Calories: 2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Family: Fabaceae (legumes)

This plant family has restorative properties for the soil as they fix nitrogen and should be a staple in any crop rotation. From this family seeds and their pods are harvested. Some members, like peas, prefer cooler weather and are grown spring and fall, while others, such as beans, need warmer weather and are grown during the summer in Minnesota.



Native to:

Central and South America



TYPES

The most common beans are snap beans, shell beans and dry beans. The pods may be green, yellow, purple or striped. Snap beans are eaten when immature and tender, both the bean and pod. Shell beans are swollen but not quite mature beans. Only the beans are usually eaten and the pods are discarded. Dry beans, grown for mature beans, are dried to preserve and have inedible pods.



GROWING CONDITIONS

It's best to direct seed instead of transplant. The seeds are big and easy to handle, and they have a sensitive taproot. They do best in warmer temperatures (particularly dry beans), but when it's too hot (85 F plus), they can stop flowering. Beans need low watering and then heavy watering during harvesting. They have moderate nutrient requirements. You may need to add rhizobia (bacteria) to your soil if planting in soil with low biological activity.

COMPANION PLANTS

- carrots
- cauliflower
- Swiss chard
- corn
- cucumber
- peas
- potatoes
- eggplant
- marigolds

PLANTS TO AVOID

- allium family
- basil
- kohlrabi
- fennel

TIP:

Regularly harvesting bush beans will help them flower and produce longer, reducing need for more plantings!



PESTS

The Japanese beetle can eat leaves and remove leaves from plants (defoliate).



Beet



Nutrition Facts

Serving Size 1/2 cup sliced (85g)
Servings Per Container 1

Amount Per Serving

Calories 35 **Calories from Fat 0**

% Daily Value*

Total Fat 0g **0%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 65mg **3%**

Total Carbohydrate 8g **3%**

Dietary Fiber 2g **8%**

Sugars 7g

Protein 1g

Vitamin A 0% • Vitamin C 6%

Calcium 2% • Iron 4%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Family: Amaranthaceae (amaranths, beet family)

Leaves (spinach), stems (chard), roots (beets) and seeds (quinoa) are harvested from this family. Many weeds are a part of this family as well (pigweed, lambs quarter). Most species of this family prefer warmer weather, but the crops grown in Minnesota can tolerate and prefer cooler temperatures (swiss chard, spinach and beets).



Native to:
Mediterranean region



TYPES

Beets vary in their color and sugar content. The typical red beet is great for storage, getting sweeter as it keeps. Just beware – they bleed! Gold beets are like a milder red beet, less sweet and earthy. Chioggia beets have a surprise on the inside – they are naturally striped and can come in various color combinations – and are the sweetest type. While the above types are all round, the sugar beet (for which Minnesota ranks No. 1 in production) is white in color and conical in shape. It's grown specifically to be processed for sugar.



GROWING CONDITIONS

Beets need moderate and even watering and low nitrogen (too much can stop root production). They can benefit from having the soil loosened before planting. Their taproot can reach up to 3 feet! Beets are best as a spring and fall crop. Temperatures lower than 50 F and higher than 80 F can stop root formation and promote flowering. Beets can also tolerate light shade, which can be helpful if planting in midsummer (choose a location so they're in shade for the hottest part of the day).

COMPANION PLANTS

- bush beans
- cabbage family
- corn
- lettuce
- onion

PLANTS TO AVOID

- mustard
- pole beans

TIP:

Once beet seedlings have established and thinned, apply an organic mulch to help regulate soil temperature and retain moisture.



PESTS

The leaf miner's larvae mines through leaves and ruins quality of beet greens.



Broccoli



Nutrition Facts	
Serving Size 1 cup florets (71g)	
Servings Per Container 1	
Amount Per Serving	
Calories 20	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 20mg	1%
Total Carbohydrate 4g	1%
Dietary Fiber 2g	8%
Sugars --g	
Protein 2g	
Vitamin A 45%	• Vitamin C 110%
Calcium 4%	• Iron 4%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
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Family: Brassicaceae (Brassicas, mustard family, cabbage family, cole crops)

Many of the crops in this family are direct descendants of wild mustard, each domesticated for a different harvestable part: leaves (kale), leaf buds (cabbage, Brussels sprouts), stems (kohlrabi), flowers (broccoli, cauliflower) and roots (turnip). This family is sometimes referred to as crucifers as well, because all the flowers have four petals that resemble a cross. They prefer cooler weather, and are best grown in spring and fall. Many leafy members even taste better after undergoing a frost!



Native to:
Mediterranean region
and Southwest Asia



TYPES

Broccoli varies in taste, color and size. Calabrese, Density, and Belstar broccoli are thick-stalked and commonly found in grocery stores. Chinese broccoli is sweet and looks similar to kale. Broccolini has long, thin stalks, small heads, and a sweet, mild flavor.



GROWING CONDITIONS

Broccoli is a cool season crop that should be planted in early spring or late summer. High summer temperatures will stunt its growth. It's best for broccoli to mature before or after high temperatures are expected. Broccoli grows best in full sun. To ensure healthy seedlings, gradually expose them to heat and direct sun before planting them outside.

COMPANION PLANTS

- beets
- celery
- chamomile
- lettuce
- potatoes
- rhubarb
- rosemary
- shallots
- spinach

PLANTS TO AVOID

- kale
- cauliflower
- strawberries
- corn
- tomatoes
- peppers

TIP:

Plant broccoli in an area where you haven't grown Brassicaceae (cabbage family) crops for four years in order to ensure disease and pest control.



PESTS

Aphids feed on the undersides of broccoli leaves, causing them to become discolored and wrinkled.



Brussels sprouts



Nutrition Facts	
Serving Size 1 cup Brussels Sprouts (88g)	
Servings Per Container 1	
Amount Per Serving	
Calories 40	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 20mg	1%
Total Carbohydrate 8g	3%
Dietary Fiber 3g	12%
Sugars 2g	
Protein 3g	
Vitamin A 15%	• Vitamin C 120%
Calcium 4%	• Iron 6%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
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Native to:
Mediterranean region



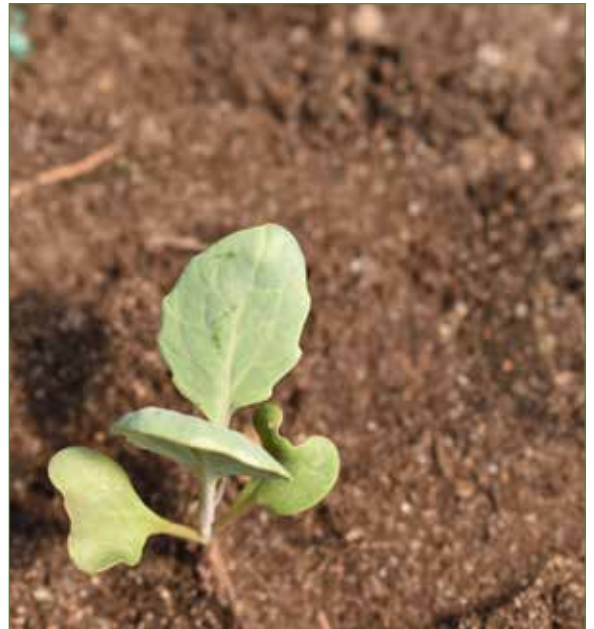
TYPES

Each variety of Brussels sprouts brings its own advantages. Catskill, an heirloom variety, has extra-large heads on a compact stalk. Jade Cross, a compact variety, has medium size sprouts that do not tip over as easily as some of the taller varieties. The Long Island Improved variety is a great cold-weather crop and its sprouts sweeten with colder weather. The Nautica variety boasts high yields and has excellent disease resistance due to wide spaces between heads on the stalk.



TIP:

Add stakes or mound dirt around the stem of Brussels sprouts once sprouts begin to set. This prevents top-heavy plants from falling over.



GROWING CONDITIONS

Brussels sprouts should be planted in full sun and rich, moist soil with compost. Plant spring seedlings outdoors as soon as the soil is workable. Plant fall seedlings 6 to 10 weeks before the first expected frost. It's best to plant Brussels sprouts in different areas of the garden each year since they are susceptible to a wide range of soil-borne diseases.

COMPANION PLANTS

- garlic
- mint
- basil
- marigolds
- nematodes
- nasturtiums
- mustard
- beets
- bush beans
- carrots
- celery
- lettuce
- onion
- peas
- potatoes
- radish
- spinach

PLANTS TO AVOID

- other members of the Brassica oleracea family
- strawberries
- tomatoes
- eggplant
- kohlrabi
- pole beans

PESTS

Transported by wind, powdery mildew creates a layer of spores on top of the Brussels sprout leaves.



Cabbage



Nutrition Facts	
Serving Size 1 cup shredded Cabbage (70g)	
Servings Per Container 1	
Amount Per Serving	
Calories 15	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 15mg	1%
Total Carbohydrate 4g	1%
Dietary Fiber 2g	8%
Sugars --g	
Protein 1g	
Vitamin A 2%	• Vitamin C 60%
Calcium 4%	• Iron 2%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Brassicaceae (Brassicas, mustard family, cabbage family, cole crops)

Many of the crops in this family are direct descendants of wild mustard, each domesticated for a different harvestable part: leaves (kale), leaf buds (cabbage, Brussels sprouts), stems (kohlrabi), flowers (broccoli, cauliflower) and roots (turnip). This family is sometimes referred to as crucifers as well, because all the flowers have four petals that resemble a cross. They prefer cooler weather, and are best grown in spring and fall. Many leafy members even taste better after undergoing a frost!



Native to:
Mediterranean region



TYPES

There are four main types of cabbage. Green cabbage is known for its compactness, long shelf life, shorter growth time and sweet flavor. Red cabbage has a longer growth time and is less tender than green or white varieties. Napa, or Chinese cabbage, has a yellow-green color, oblong head, frilly leaves, thick stem, and soft, sweet flavor. Savoy Cabbage is known for its loosely layered wrinkly leaves, mild flavor and light texture.



GROWING CONDITIONS

Cabbage plants don't do well in hot weather. They thrive in regions with long, cool growing seasons with temperatures ranging between 45 F and 75 F. It's also essential that cabbage be planted in an area with full sun and good drainage. Seedlings should be planted 12 to 18 inches apart in rows 18 to 24 inches apart. Cabbage requires soil that is evenly moist but not overwatered. Harvest when the head feels firm and hard like a baseball.

COMPANION PLANTS

- beets
- celery
- dill
- chamomile
- onion
- mint
- potatoes
- sage
- rosemary
- thyme
- lavender
- hyssop
- nasturtium
- beans
- peas
- coriander
- marigolds
- lettuce

PLANTS TO AVOID

- strawberries
- tomatoes
- garlic

TIP:

When buying cabbage, look for cabbage heads that feel heavy for their size – except for Napa and Savoy Cabbage – and have tightly packed leaves.



PESTS

Cabbage loopers infest the undersides of leaves and feed on areas between leaf veins.



Carrot



Nutrition Facts

Serving Size 2 medium Carrots (6 to 6 1/2 inches) (122g)
Servings Per Container 1

Amount Per Serving

Calories 50 Calories from Fat 5

% Daily Value*

Total Fat 0g **0%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 85mg **4%**

Total Carbohydrate 12g **4%**

Dietary Fiber 3g **12%**

Sugars 6g

Protein 1g

Vitamin A 410% • Vitamin C 10%

Calcium 4% • Iron 2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

		Calories: 2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Family: Umbelliferae/Apiaceae
(umbellifers, carrot family, parsley family)

Members of this family have flowers arranged in umbels (multiple small flowers that create the shape of an umbrella), and a majority of the plants are herbs.

They can be harvested for the root (carrot, celeriac, parsnip), stem (celery, fennel), leaves (parsley, dill, cilantro) and seeds (caraway, cumin), with some plants having multiple harvestable parts.



Native to:
Middle East and Southwest Asia



TYPES

Carrots are typically thought of as long orange roots, but they can vary in colors and sizes. Emperor varieties are the most commercially grown and have a long tapering shape that can reach 10 to 12 inches long. Nantes varieties have a sweet and crisp flavor, and are best fresh. Chatenay carrots have more of a short cone shape and wider crown, and are good for storage and processing. Mini varieties vary in shape and are harvested at about 2 to 4 inches long. Then there are many specialty types that vary in color, from orange, red and purple to white and yellow.



GROWING CONDITIONS

Carrots need moderate watering through their life. If the soil dries out, the carrots can turn tough and bitter instead of crisp and sweet. They will benefit from having the soil loosened before planting. Emperor types like lighter, sandy soils. Nantes, Chatenay and mini varieties can tolerate heavier (clay) soils. Carrots are best grown in spring and fall. Temperatures lower than 50 F or higher than 80 F can stop root formation. Temperatures higher than 80 F also promote flowering, which will cause the carrot to taste bitter.

COMPANION PLANTS

- beans
- Brussels sprouts
- cabbage
- onion
- peppers
- tomatoes
- leeks
- radish
- sage

PLANTS TO AVOID

- members of the same family (celery, dill, parsnip)

TIP:

Once carrot seedlings have established and been thinned, apply an organic mulch to help regulate soil temperature and retain moisture.



PESTS

Armyworms eat away at carrot stems and foliage above ground, severely impacting the quality of the carrot taproot.





TYPES

Though often thought of as white, cauliflower also comes in purple, yellow and orange varieties. Romanesco types are lime green with pointed, spiraled pinnacles.



GROWING CONDITIONS

Cauliflower needs careful watering and plenty of nitrogen. A thick layer of compost helps with retaining moisture and releasing nutrients. Cauliflower is a cool-season crop that grows best in spring and fall. Cauliflower plants do not tolerate high heat or cold well. This can make it challenging to get the season just right. If cauliflower is exposed to high heat or cold, it may “button,” forming multiple, small, button-sized heads rather than one large head. Ten days before harvesting, blanch cauliflower heads by breaking the two innermost leaves so they cover the head. This will protect it from yellowing in the sun.

COMPANION PLANTS

- beans
- celery
- spinach
- sage
- dill
- chamomile
- onion
- radish
- cucumber

PLANTS TO AVOID

- peas
- strawberries
- tomatoes

TIP:

When planting in early spring, protect cauliflower plants from frost by covering them with old milk jugs.



PESTS

Aphids suck the sap from cauliflower leaves and stems and attack the flower, stunting the growth of the plant.



Collard Greens



Nutrition Facts		
Serving Size 1 cup collard greens (42g)		
Servings Per Container 1		
Amount Per Serving		
Calories 15	Calories from Fat 5	
% Daily Value*		
Total Fat 0g	0%	
Saturated Fat 0g	0%	
Trans Fat 0g		
Cholesterol 0mg	0%	
Sodium 105mg	4%	
Total Carbohydrate 2g	1%	
Dietary Fiber 2g	8%	
Sugars 0g		
Protein 1g		
Vitamin A 60%	• Vitamin C 15%	
Calcium 6%	• Iron 2%	
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:		
	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g
Calories per gram:		
Fat 9 • Carbohydrate 4 • Protein 4		

Family: Brassicaceae (Brassicas, mustard family, cabbage family, cole crops)

Many of the crops in this family are direct descendants of wild mustard, each domesticated for a different harvestable part: leaves (kale), leaf buds (cabbage, Brussels sprouts), stems (kohlrabi), flowers (broccoli, cauliflower) and roots (turnip). This family is sometimes referred to as crucifers as well, because all the flowers have four petals that resemble a cross. They prefer cooler weather, and are best grown in spring and fall. Many leafy members even taste better after undergoing a frost!



Native to:
Mediterranean region



TYPES

Collard greens vary in shape, size and flavor. With large, dark blue-green leaves, the Champion variety is high yielding and resistant to bolting. With smaller leaves, the Georgia variety is an heirloom with flavor that improves after a light frost. Unlike the other varieties, the Morris Heading variety produces heads as opposed to loose leaves. This variety also has a lighter color and a more tender texture. The Vates variety has a tall, spreading growth habit and shiny, dark leaves.



GROWING CONDITIONS

With a flavor that improves with frost, collards are known to be more cold-tolerant than other types of leafy greens. They should be planted in the late summer for a winter harvest. For best results, plant collards 18 inches apart in full sun and moist, fertile soil. It's important to keep them watered in order to continue harvesting through the summer heat.

COMPANION PLANTS

- potatoes
- hyssop
- thyme
- artemisia
- dill
- onion

PLANTS TO AVOID

- other members of the Brassicaceae family
- rue
- strawberries

TIP:

In order to maximize nutritional benefits, boil collard greens in broth! This allows the nutrients and minerals to leech into the broth, instead of throwing them down the drain in the cooking water.



PESTS

Alternaria leaf spot is a common problem in collards. This fungus creates inedible parts of the leaf by creating dark circular spots and larger brown spots on the leaf.





TYPES

Sweet corn is best eaten right after harvest before sugar turns to starch (kernels are still moist). It's typically harvested at the peak of summer and ready all at once. Space plantings out over a few weeks to allow for multiple harvests. Field corn, which dominates American landscapes, is grown to be processed (corn meal, animal feed). It's harvested once husks kernels are dried in the late fall and can even survive a few frosts. Popcorn, like field corn, is harvested once the kernels have dried, typically in early fall.



GROWING CONDITIONS

Corn needs moderate watering while growing and then heavy watering once flowering and harvesting begins. It has high nutrient requirements. It's beneficial to work compost into the soil before planting. Unlike many vegetables, corn thrives in hot weather (85 F plus), just make sure it has enough water! Once harvested, the sugar begins turning to starch, so be sure to eat or preserve right away.

COMPANION PLANTS

- beets
- beans
- cantaloupe
- cucumber
- pumpkin
- squash
- cabbage

PLANTS TO AVOID

- tomatoes

TIP:

Corn is pollinated by wind!
Grow plants in blocks (spread out in two or more rows) instead of one row.

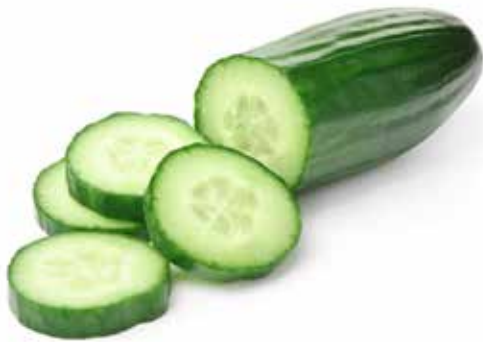


PESTS

Seed corn flies lay eggs on the surface of the soil in decaying vegetable matter. When eggs hatch, the maggots eat away at the corn kernels underground, causing poor germination.



Cucumber



Nutrition Facts

Serving Size 1 cup cucumber slices, with skin (104g)
Servings Per Container 1

Amount Per Serving

Calories 15 **Calories from Fat 0**

% Daily Value*

Total Fat 0g **0%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 0mg **0%**

Total Carbohydrate 4g **1%**

Dietary Fiber 1g **4%**

Sugars 2g

Protein 1g

Vitamin A 2% • Vitamin C 4%

Calcium 2% • Iron 2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Family: Cucurbitaceae (cucurbits, gourd family)

They're a heat-loving family. The fruit, and sometimes the flowers, called squash blossoms, are harvested and eaten.

They're generally vining plants with tendrils. Members of the family have separate male and female flowers on the same plant, so pollinators must be present for fruit set, and sometimes need other plants such as nasturtium to attract them.



Native to:
India



TYPES

There are two main types of cucumbers: slicing and pickling. Slicing cucumbers are typically used fresh. The most common is the long green varieties. There are also other shapes and colors like the round yellow lemon cucumber or curvy pale green Armenian cucumber. Pickling cucumbers are smaller at maturity, have thinner skins and are grown specifically to be preserved.



GROWING CONDITIONS

Cucumbers need moderate watering until flowering, then heavy watering during production and harvesting. If plants don't get enough water, they can produce bitter fruits. Cucumbers can benefit from having compost worked in before planting. There are vining and bush types, but both have a tendency to climb. Harvest often and the plant will continuously produce throughout the season.

COMPANION PLANTS

- bush beans
- corn
- cabbage family
- eggplant
- nasturtium
- dill
- peas

PLANTS TO AVOID

- potatoes
- sage
- melon

TIP:

Cucumbers love to grab hold of anything around them (and will take over other plants)! Grow them up a trellis or fence to save space and have better quality fruits.



PESTS

cucumber beetle, squash bug, squash vine borer





TYPES

Chinese and Japanese varieties are long and thin with a sweet, creamy flavor. The Globe eggplant is the common grocery store variety. It has a thick, meaty texture and works well in many dishes as a protein or bread substitute. Italian eggplants have a meaty, thick, sponge-like texture, but are smaller and slightly sweeter. Less commonly grown are baby Indian eggplants (Brinjal), tiny green Thai eggplants, and white eggplants. White eggplants were the original type of eggplant and the source of their name. The white orbs resemble goose eggs hanging from the plant.



GROWING CONDITIONS

The soil should be warmed to 60 F before planting seedlings. Eggplants need to be watered regularly. To protect eggplants from pests and diseases, use cloches or row covers around the eggplants once seedlings have been established.

COMPANION PLANTS

- peas
- beans
- tarragon
- thyme
- marigolds
- peppers
- tomatoes
- potatoes
- spinach

PLANTS TO AVOID

- fennel

TIP:

To ensure consistent watering, use a regulated drip irrigation system and apply mulch to retain soil moisture.



PESTS

Twospotted spider mites can cause damage to eggplants before they are even detected, hiding in clusters on the underside of the leaves.



Photo courtesy of University of Minnesota Extension

Kale



Nutrition Facts	
Serving Size 1 cup Kale (16g)	
Servings Per Container 1	
Amount Per Serving	
Calories 10	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 5mg	0%
Total Carbohydrate 1g	0%
Dietary Fiber 1g	4%
Sugars 0g	
Protein 1g	
Vitamin A 30%	• Vitamin C 30%
Calcium 2%	• Iron 2%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Brassicaceae (Brassicas, mustard family, cabbage family, cole crops)

Many of the crops in this family are direct descendants of wild mustard, each domesticated for a different harvestable part: leaves (kale), leaf buds (cabbage, Brussels sprouts), stems (kohlrabi), flowers (broccoli, cauliflower) and roots (turnip). This family is sometimes referred to as crucifers as well, because all the flowers have four petals that resemble a cross. They prefer cooler weather, and are best grown in spring and fall. Many leafy members even taste better after undergoing a frost!



Native to:
Mediterranean region
and Southwest Asia



TYPES

Curly kale and Lacinato (or Dino) kale varieties are the most common types. The easy-to-grow Curly variety lives up to its name with tightly-wound curls. The Lacinato variety has a wrinkled appearance and darker, blue-green color. Red Russian kale has large, flat bluish leaves with purple stems.



GROWING CONDITIONS

Kale is resilient and cold tolerant, and can be planted very early in the spring. Kale can be harvested throughout spring, summer and fall seasons. The leaves sweeten with colder weather. Kale will produce tender leaves and a faster harvest if planted in moist soil that is rich in compost. It's best to grow kale in full sun, but it also tolerates a partially shaded environment.

COMPANION PLANTS

- beets
- celery
- cucumber
- herbs
- onion
- spinach
- chard
- potatoes

PLANTS TO AVOID

- beans
- strawberries
- tomatoes

TIP:

Working your way up from the bottom of the stalk, harvest leaves as soon as they reach full size or they will become tough and bitter. This will also make sure that the kale plant will continue to produce new leaves from the top!



PESTS

Aphids feed on the leaf tissues and suck out the juices, damaging the leaf.



Kohlrabi



Nutrition Facts	
Serving Size 1/2 cup sliced Kohlrabi (68g)	
Servings Per Container 1	
Amount Per Serving	
Calories 20	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 15mg	1%
Total Carbohydrate 4g	1%
Dietary Fiber 2g	8%
Sugars 2g	
Protein 1g	
Vitamin A 0%	• Vitamin C 70%
Calcium 2%	• Iron 2%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Brassicaceae (Brassicas, mustard family, cabbage family, cole crops)

Many of the crops in this family are direct descendants of wild mustard, each domesticated for a different harvestable part: leaves (kale), leaf buds (cabbage, Brussels sprouts), stems (kohlrabi), flowers (broccoli, cauliflower) and roots (turnip). This family is sometimes referred to as crucifers as well, because all the flowers have four petals that resemble a cross. They prefer cooler weather, and are best grown in spring and fall. Many leafy members even taste better after undergoing a frost!



Native to:
Northern Europe



TYPES

Kohlrabi comes in more than 20 varieties, ranging from green to purple to white. Most common is White Vienna, a spring and summer variety featuring an early plant growth. Purple Vienna is similar, except with purple skin, and is ideal for late planting and winter harvesting. The Kossak variety has a large bulb, tender flesh and flavorful leaves.



GROWING CONDITIONS

Kohlrabi is a hardy cool-season crop that should be planted for a spring or fall harvest. Both kohlrabi's leaves and bulbs are edible! For the sweetest, most tender flavor, harvest the leaves when young and the bulbs are 2 to 3 inches in diameter. Kohlrabi needs at least 6 hours of sun each day, though 8 to 10 hours is preferred. The soil should be moist, well-drained, and compost-rich.

COMPANION PLANTS

- bush beans
- beets
- celery
- cucumber
- lettuce
- onion
- potatoes

PLANTS TO AVOID

- other members of the cabbage family
- tomatoes

TIP:

Kohlrabi is great when eaten raw! To add a crisp, crunchy, and sweet flavor to your coleslaw, grate kohlrabi, lightly salt it and let it sit for a few minutes, and then stir in.



PESTS

Cabbage loopers infest the undersides of leaves along the margins and feed on areas between leaf veins.



Melon



Nutrition Facts	
Serving Size 1/2 cup diced melon (78g)	
Servings Per Container 1	
Amount Per Serving	
Calories 25	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 10mg	0%
Total Carbohydrate 6g	2%
Dietary Fiber 1g	4%
Sugars 6g	
Protein 1g	
Vitamin A 50%	• Vitamin C 50%
Calcium 0%	• Iron 0%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Cucurbitaceae (cucurbits, gourd family)

They're a heat-loving family. The fruit, and sometimes the flowers, called squash blossoms, are harvested and eaten. They're generally vining plants with tendrils. Members of the family have separate male and female flowers on the same plant, so pollinators must be present for fruit set, and sometimes need other plants such as nasturtium to attract them.



Native to:
Africa and Central Asia



TYPES

Melons come in a colorful array of varieties. Most popular is the crisp and juicy red watermelon, followed by the softer orange cantaloupe and green honeydew. Seedless watermelon varieties are created by cross-pollinating a variety that has two chromosome sets, with one that has four chromosome sets. The result is a seed with three sets of chromosomes that is unable to create its own seeds. However, in order to fruit, the parent plants must still pollinate the seedless watermelon flowers. This is why most home gardeners choose to grow seeded varieties.



GROWING CONDITIONS

Melons grow best in well-drained, sandy soil. They need plenty of potassium and phosphorus. Too much nitrogen causes excessive vine growth and disappointing fruit set (the process of flowers becoming fruit). Melons require low to moderate watering. Too much water negatively affects flavor. Cantaloupe and honeydew change color when ripe and watermelon sounds hollow when knocked.

COMPANION PLANTS

- corn
- okra
- sunflowers

PLANTS TO AVOID

- potatoes

TIP:

Melons can be trellised to save space and keep fruit off the soil. Plants will naturally climb, but will need some kind of support for each melon so it doesn't break off the vine (like a cloth hammock for each melon).



PESTS

cucumber beetle, squash bug, squash vine borer



Mustard



Nutrition Facts	
Serving Size 1 cup cooked (140g)	
Servings Per Container 1	
Amount Per Serving	
Calories 35	Calories from Fat 5
% Daily Value*	
Total Fat 0.5g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 15mg	1%
Total Carbohydrate 6g	2%
Dietary Fiber 3g	12%
Sugars 2g	
Protein 4g	
Vitamin A 350%	• Vitamin C 60%
Calcium 15%	• Iron 6%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Brassicaceae (Brassicas, mustard family, cabbage family, cole crops)

Many of the crops in this family are direct descendants of wild mustard, each domesticated for a different harvestable part: leaves (kale), leaf buds (cabbage, Brussels sprouts), stems (kohlrabi), flowers (broccoli, cauliflower) and roots (turnip). This family is sometimes referred to as crucifers as well, because all the flowers have four petals that resemble a cross. They prefer cooler weather, and are best grown in spring and fall. Many leafy members even taste better after undergoing a frost!



Native to:
India



TYPES

Did you know that all parts of the mustard plant are edible, including the seeds, leaves and flowers? Mild in flavor, yellow mustard seeds are the base of the yellow mustard found in grocery stores. Chinese, Indian and Oriental mustards are brown varieties whose seed coat can range from dark brown to dark yellow. With a sharp and earthy flavor, black mustard has small seeds and is produced in the Middle East and Asia minor. Mustard greens come in red, green, and purple varieties with leaves ranging from deeply-lobed and frilly, to flat with rounded edges. Some are very spicy, while some are quite mild.



GROWING CONDITIONS

Mustard is a cool season crop that can be started 3 weeks before the last frost date. In order to have a successive harvest, plant mustard seeds every 3 weeks, taking a break during the hottest months of summer. Thin mustard seedlings to 3 inches apart after seeds sprout. Mustard plants are able to tolerate partial shade.

COMPANION PLANTS

- beans
- chives

PLANTS TO AVOID

- sunflowers
- soybeans
- dried beans
- wild mustard
- pigweed
- field pennycress

TIP:

If plants bolt, allow them to flower and go to seed. You can harvest the seeds and try making your own homemade mustard!



PESTS

The flea beetle eats leaves and creates tiny holes.



Okra



Nutrition Facts	
Serving Size 1 cup sliced okra (160g)	
Servings Per Container 1	
Amount Per Serving	
Calories 35	Calories from Fat 5
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 10mg	0%
Total Carbohydrate 7g	2%
Dietary Fiber 4g	16%
Sugars 4g	
Protein 3g	
Vitamin A 10%	• Vitamin C 45%
Calcium 10%	• Iron 2%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Malvaceae (Mallows)

The striking flowers of this family have five petals surrounding a column of stamens. Many mallow species are agricultural weeds. However, a few, such as cotton, okra, durian, cacao, and hibiscus, are important global crops, in addition to popular ornamental species like linden trees and hollyhocks. The plants contain natural gums which create a slimy texture when crushed, hence their etymological connection to marshmallows. Plants in this family generally need warmer weather to thrive and are therefore grown during the summer months in Minnesota.



Native to:
Arabian Peninsula region



TYPES

The most popular variety is Clemson Spineless. It has very few spines on its pods and branches. It also matures quickly with pods appearing in about 56 days. Burgundy okra has pods that are large, deep red in color and tender. While the Stubby variety grows just over 3 feet tall, the Star of David heirloom variety and Cowhorn variety are both known to grow up to 6 to 8 feet tall!



GROWING CONDITIONS

To help okra seeds grow, soak them in water for 12 to 18 hours before planting. This will help soften the hard seed coat. Okra is a heat-loving plant that prefers soil to be higher than 65 F, full sun, and plenty of space to spread. Regular watering is important, especially during pod and flower development. Practice crop rotation to control soil-borne diseases, allowing at least 1 year between plantings.

COMPANION PLANTS

- cucumber
- melon
- peppers
- basil
- flowers

PLANTS TO AVOID

- squash
- sweet potatoes

TIP:

Many okra varieties that don't have the word "spineless" in their name have tiny, fuzzy spines that may cause an itching sensation when in contact with skin. Make sure to wear thick gloves when harvesting these varieties!



PESTS

The Japanese Beetle is known to chew holes in the okra leaves and pods.



Onion



Nutrition Facts	
Serving Size 1/4 cup chopped (25g)	
Servings Per Container 1	
Amount Per Serving	
Calories 10	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 2g	1%
Dietary Fiber 1g	4%
Sugars 1g	
Protein 0g	
Vitamin A 4%	• Vitamin C 8%
Calcium 2%	• Iron 2%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Amaryllidaceae

Plants of this family grow bulbs and have long, grass-like leaves with parallel veins. Flowers are arranged into umbels, round orbs of flowers protruding from a single center point. Edible species like onion, chive, leek and garlic are popular, as well as ornamental garden plants like amaryllis, daffodils, narcissus and snowdrops. The classic onion smell found in the Allioideae subfamily is caused by allyl sulfide compounds.



Native to:
Southwestern Asia



TYPES

Yellow, sweet, and white onions are the most popular types. Yellow onions are versatile and caramelize easily. White onions give a burst of flavor to salsas and guacamole. Sweet onions are a milder onion. Red onions are known for their stronger flavor and longer shelf life. Shallot and pearl onions are smaller and have a shorter growing season. For green onions, also called scallions or bunching onions, the young plant is harvested whole and the slim white bulb and green leaves are sliced thinly and used as a garnish.



GROWING CONDITIONS

Onions are very hardy and are considered a cool-season crop. Most onions are biennials which means that their lifecycle takes 2 years to complete. In the first year, the seed grows and forms modified leaves and tiny bulbs underground. In the second year the bulb matures and is ready to harvest at the end of the growing season. Onions do best in full sun and loose, mulched soil.

COMPANION PLANTS

- broccoli
- kale
- Brussels sprouts
- cabbage
- tomatoes
- lettuce
- strawberries
- peppers

PLANTS TO AVOID

- peas
- beans
- sage
- asparagus
- garlic
- leeks
- shallots

TIP:

To get big bulbs, fertilize onions every few weeks with nitrogen. Once the onions push the soil away and the bulbs begin to swell, stop fertilizing.



PESTS

Onion flies lay their eggs on onion bulbs. Once eggs hatch, larvae will feast on the bulb and root system.



Photo courtesy of University of Minnesota Extension

Pea



Nutrition Facts

Serving Size 1 cup sugar snap peas in pod (85g)
Servings Per Container 1

Amount Per Serving

Calories 35 Calories from Fat 0

% Daily Value*

Total Fat 0g **0%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 0mg **0%**

Total Carbohydrate 6g **2%**

Dietary Fiber 2g **8%**

Sugars 3g

Protein 2g

Vitamin A 20% • Vitamin C 80%

Calcium 4% • Iron 10%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

Calories: 2,000 2,500

Total Fat Less than 65g 80g

Saturated Fat Less than 20g 25g

Cholesterol Less than 300mg 300mg

Sodium Less than 2,400mg 2,400mg

Total Carbohydrate 300g 375g

Dietary Fiber 25g 30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Family: Fabaceae (legumes)

This plant family has restorative properties for the soil as they fix nitrogen and should be a staple in any crop rotation. From this family seeds and their pods are harvested. Some members, like peas, prefer cooler weather and are grown spring and fall, while others, such as beans, need warmer weather and are grown during the summer in Minnesota.



Native to:
Mediterranean region



TYPES

Shelling peas or common peas, which are grown for mature peas, the shells are inedible. Sugar snap peas have peas that are semi-developed, but the pod is still edible. Snow peas are grown for immature peas that also have an edible pod.



GROWING CONDITIONS

Peas need moderate watering until they flower, then low watering. They have low nutrient requirements and return nitrogen to soil. Peas generally don't do well in hot temperatures (85 F and above) as it stops flowering and growth. They are best grown in spring or fall. They're one of the first crops to seed in the spring. However, growing will be better once the soil heats up a bit (50 to 60 F). Peas usually need some kind of support, even bush types, as they have tendrils that reach out and grab.

COMPANION PLANTS

- beans
- carrots
- celery
- corn
- cucumber
- eggplant
- peppers
- radish
- spinach
- turnip

PLANTS TO AVOID

- onion family

TIP:

Peas can also be harvested as young seedlings (3 inches tall). These are called "pea shoots!" They make for nutritious salad and sandwich toppers.



PESTS

Aphids feed off the pea plant's roots, slowing plant growth and leaving U-shaped notches around the edges of plants.



Pepper



Nutrition Facts

Serving Size 1 cup bell peper strips (149g)
Servings Per Container 1

Amount Per Serving

Calories 30 **Calories from Fat 0**

% Daily Value*

Total Fat 0g **0%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 0mg **0%**

Total Carbohydrate 7g **2%**

Dietary Fiber 3g **12%**

Sugars 4g

Protein 1g

Vitamin A 10% • Vitamin C 200%

Calcium 2% • Iron 2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

		Calories: 2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Family: Solanaceae (Nightshade)

Solanaceae are a family of flowering plants. Fruits of flowers (eggplants, tomatoes, peppers) and tubers (potatoes).

Many members of this family contain potent alkaloids and some are highly toxic to humans. This family is characterized by flowers in clusters of five, with five stamens and one superior ovary. Most species in this family prefer warmer weather and are best grown in the warmth of the summer.



Native to:
South American region



TYPES

The pepper plant is known for its many varieties that range from small to large and sweet to spicy. Most commonly found on the American dinner plate are red, orange or yellow bell peppers. Poblano peppers are another common variety with a mildly spicy flavor featured in many Mexican dishes. Jalapeno, serrano, habanero and chili are common varieties of hot peppers. There are more than 50,000 varieties of peppers found in the world!



GROWING CONDITIONS

In Minnesota, it's best to plant peppers late in the spring and harvest in the heat of the summer. Peppers require full sunlight, consistent watering and well-drained, nutrient-rich soil. Peppers grow best if supported by a stake or small tomato cage in order to help bear the weight of the fruit.

COMPANION PLANTS

- carrots
- cucumber
- radish
- squash
- eggplant
- spinach
- lettuce
- Swiss chard

PLANTS TO AVOID

- Brassica family members
- fennel
- apricot trees

TIP:

If there are any predictions of frost in a late spring or early fall cold spell, be sure to cover your pepper plants.



PESTS

Cutworms attack young pepper seedlings by cutting through their stems.



Photo courtesy of University of Minnesota Extension

Potato



Nutrition Facts

Serving Size 1 baked 2 1/4 in. to 3 1/4" Potato (173g)
Servings Per Container 1

Amount Per Serving

Calories 160 **Calories from Fat 0**

% Daily Value*

Total Fat 0g **0%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 15mg **1%**

Total Carbohydrate 37g **12%**

Dietary Fiber 4g **16%**

Sugars 2g

Protein 4g

Vitamin A 0% • Vitamin C 30%

Calcium 2% • Iron 10%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Family: Solanaceae (Nightshade)

Solanaceae are a family of flowering plants. Fruits of flowers (eggplants, tomatoes, peppers) and tubers (potatoes).

Many members of this family contain potent alkaloids and some are highly toxic to humans. This family is characterized by flowers in clusters of five, with five stamens and one superior ovary. Most species in this family prefer warmer weather and are best grown in the warmth of the summer.



Native to:
South American region



TYPES

There are more than 200 varieties of potatoes sold in the United States. These potatoes can be grouped into three categories: starchy, waxy and all-purpose. Starchy potatoes are great for baking, frying, boiling and mashing. The most common is russet. Waxy potatoes are ideal for roasting. Red potatoes fall in this category. All-purpose potatoes include Yukon Gold, White Rose and Purple potatoes.



GROWING CONDITIONS

Potatoes can be planted once soil temperature warms to 40 F. This can be as early as 6 weeks before the average last frost! Plant potatoes in rich, well-drained soil. Potatoes are not grown from seed. Instead, chunks of potato tubers are planted. Seed potatoes are cut into pieces and new plants spring up from each eye. When the green tops of the plants begin to shrivel and turn brown, the potatoes are ready to harvest.

COMPANION PLANTS

- cabbage
- corn
- beans
- horseradish
- lettuce
- spinach
- chamomile
- basil
- yarrow
- parsley
- thyme
- petunias
- alyssum

PLANTS TO AVOID

- raspberries
- tomatoes
- cucumber
- squash
- pumpkin
- carrots
- asparagus
- fennel
- turnip
- onion
- sunflowers
- other members of the Solanaceae family

TIP:

Throughout the growing season, hill your potatoes by piling a few inches of soil around the stems, giving even the topmost tubers plenty of room to grow.



PESTS

The Colorado Potato beetle will lay brightly colored eggs on the underside of the leaf, and can cause significant damage to the plants.



Radish



Nutrition Facts	
Serving Size 3 small Radishes (6g)	
Servings Per Container 1	
Amount Per Serving	
Calories 0	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 0g	
Protein 0g	
Vitamin A 0%	• Vitamin C 2%
Calcium 0%	• Iron 0%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Brassicaceae (Brassicas, mustard family, cabbage family, cole crops)

Many of the crops in this family are direct descendants of wild mustard, each domesticated for a different harvestable part: leaves (kale), leaf buds (cabbage, Brussels sprouts), stems (kohlrabi), flowers (broccoli, cauliflower) and roots (turnip). This family is sometimes referred to as crucifers as well, because all the flowers have four petals that resemble a cross. They prefer cooler weather, and are best grown in spring and fall. Many leafy members even taste better after undergoing a frost!



Native to:
Mediterranean region



TYPES

Radishes come in many different colors, shapes and sizes. The classic red radish is small and round with red skin and white flesh. It's typically eaten raw on salads, sandwiches or tacos. Daikon radishes are large and oblong, and are typically white, but also come in pink, green and purple. They are often pickled or used in stir-fries. Radish leaves are also cooked and eaten like any other green. Many people enjoy the peppery taste of radish sprouts.



GROWING CONDITIONS

Radishes are known to be one of the easiest and fastest-growing vegetables. They can be planted continuously throughout the spring and fall, with a break during the hot summer months. Radishes should be direct seeded in full sun and loose, moist soil. Thin to 2-inch spacing when seedlings are about 1 week old. Harvest radishes before the flower stem begins to form, otherwise the radish bulbs will become bitter and fibrous.

COMPANION PLANTS

- peas
- leaf lettuce
- tomatoes
- peppers
- cucumber
- nasturtium
- onion
- pole beans

PLANTS TO AVOID

- brassicas
- hyssop

TIP:

If planting in soil with high levels of clay, mix sand in before planting the radishes. This will help loosen the soil and improve soil drainage.



PESTS

Cabbage root maggots carve tunnels into the radish root.



Photo courtesy of University of Minnesota Extension

Spinach



Nutrition Facts	
Serving Size 1 cup fresh (28g)	
Servings Per Container 1	
Amount Per Serving	
Calories 5	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 20mg	1%
Total Carbohydrate 1g	0%
Dietary Fiber 1g	4%
Sugars 0g	
Protein 1g	
Vitamin A 50%	• Vitamin C 15%
Calcium 2%	• Iron 6%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Amaranthaceae (amaranths, beet family)

Leaves (spinach), stems (chard), roots (beets) and seeds (quinoa) are harvested from this family. Many weeds are a part of this family as well (pigweed, lambs quarter). Most species of this family prefer warmer weather, but the crops from it grown in Minnesota can tolerate and prefer cooler temperatures (Swiss chard, spinach, beets).



Native to:
Southwestern and
Central Asia



TYPES

There are three main categories of spinach. Smooth spinach has a flat leaf, usually in the shape of the spade, and is best raw. Savoy spinach has a curly crinkled leaf and is best cooked. The last is a hybrid of the two, semi-savoy, which is somewhat crinkly and can be used raw or cooked.



GROWING CONDITIONS

Spinach can be tricky to grow in Minnesota. It prefers cooler temperatures and is grown in the spring and fall. In the spring, as the days grow longer, the extended daylight can promote bolting, or flowering. Temperatures higher than 80 F will delay growth and force the plant to flower and set seed. If you get discouraged in the spring, the weather may be in your favor in the fall! Spinach needs light watering, but if it experiences drought-like conditions, it will be triggered to bolt. Make sure the soil is always moist especially in the spring. It can also tolerate light shade, so you can try and plan your garden so that it's not in direct sunlight during the hottest part of the day. Try to look for heat- and bolt-resistant varieties.

COMPANION PLANTS

- celery
- onion
- legumes
- cabbage family
- lettuce

PLANTS TO AVOID

- potatoes

TIP:

If you get frustrated, try something new! New Zealand spinach is not a relative, but the taste and texture are very similar and it loves heat!



PESTS

Leaf miners' larvae will mine through leaves and ruin their quality.



Summer Squash



Nutrition Facts

Serving Size 1 cup sliced zucchini
(113g)

Servings Per Container 1

Amount Per Serving

Calories 20 **Calories from Fat 5**

% Daily Value*

Total Fat 0g **0%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 10mg **0%**

Total Carbohydrate 4g **1%**

Dietary Fiber 1g **4%**

Sugars 3g

Protein 1g

Vitamin A 4% • Vitamin C 35%

Calcium 2% • Iron 2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

Calories: 2,000 2,500

Total Fat Less than 65g 80g

Saturated Fat Less than 20g 25g

Cholesterol Less than 300mg 300mg

Sodium Less than 2,400mg 2,400mg

Total Carbohydrate 300g 375g

Dietary Fiber 25g 30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

Family: Cucurbitaceae (cucurbits, gourd family)

They're a heat-loving family. The fruit, and sometimes the flowers, called squash blossoms, are harvested and eaten.

They're generally vining plants with tendrils. Members of the family have separate male and female flowers on the same plant, so pollinators must be present for fruit set, and sometimes need other plants such as nasturtium to attract them.



Native to:

North America and
Central America



TYPES

Summer squash vary in shape, color and taste. Varieties include zucchini, straightneck squash and patty pan. All fruits are best picked when they are young.



GROWING CONDITIONS

Summer squash have similar requirements as winter squash (see pages 68-69), but they are smaller plants so they will need less of everything (space, water, nutrients). Work compost into the soil before planting, or growing in soil high in organic matter, and that should be enough nutrients for the season. They are good producers, so once they are making fruit, harvest every few days! One plant will typically provide more than enough for one person.

COMPANION PLANTS

- beans
- corn
- nasturtium
- radish

PLANTS TO AVOID

- potatoes

TIP:

Summer squash loves heat! Mound the soil or use black plastic mulch to warm up the soil faster in spring. Mulch will later help create prettier fruit by lifting it off the soil.



PESTS

cucumber beetle,
squash bug, squash
vine borer



Swiss Chard



Nutrition Facts		
Serving Size 1 cup Swiss Chard (36g)		
Servings Per Container 1		
Amount Per Serving		
Calories 5	Calories from Fat 0	
% Daily Value*		
Total Fat 0g	0%	
Saturated Fat 0g	0%	
Trans Fat 0g		
Cholesterol 0mg	0%	
Sodium 75mg	3%	
Total Carbohydrate 1g	0%	
Dietary Fiber 1g	4%	
Sugars 0g		
Protein 1g		
Vitamin A 45%	• Vitamin C 20%	
Calcium 2%	• Iron 4%	
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:		
	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g
Calories per gram:		
Fat 9 • Carbohydrate 4 • Protein 4		

Family: Amaranthaceae (amaranths, beet family)

Leaves (spinach), stems (chard), roots (beets) and seeds (quinoa) are harvested from this family. Many weeds are a part of this family as well (pigweed, lambs quarter). Most species of this family prefer warmer weather, but the crops grown from it in Minnesota can tolerate and prefer cooler temperatures (swiss chard, spinach, beets).



Native to:
Southern Europe



TYPES

Swiss chard comes in many different colors. Types can have red, yellow, green, or white stems, and every hue in between. Leaf texture and flavor will differ among varieties as well. Some companies sell “rainbow” mixes, with seeds of different colors combined in one packet so you can have every color in your garden (without having to buy them separately).



GROWING CONDITIONS

One of the easiest plants to grow in Minnesota (as long as there’s no pest issues)! Swiss chard needs moderate water throughout its life, has low nitrogen requirements and can tolerate partial shade. It’s one of the few crops that can be planted in the spring and still produce well into the heat of the summer! If you continuously harvest the outer leaves, you’ll have a plant that lasts till the fall.

COMPANION PLANTS

- bush beans
- broccoli
- Brussels sprouts
- cabbage
- onion

PLANTS TO AVOID

- corn
- melon
- cucumber
- squash
- pole beans

TIP:

Swiss chard “seeds” are actually a small fruit containing many seeds! So whether direct seeding or transplanting, thinning will be required. If direct seeding, wait to thin until leaves are a few inches tall for harvestable baby leaves. If transplanting, be sure to thin soon after sprouting so that each tray cell has one plant.



PESTS

Leaf miners’ larvae will mine through leaves and ruin their quality.



Tomatillo



Nutrition Facts	
Serving Size 1/2 cup chopped tomatillos (66g)	
Servings Per Container 1	
Amount Per Serving	
Calories 20	Calories from Fat 5
% Daily Value*	
Total Fat 0.5g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 4g	1%
Dietary Fiber 1g	4%
Sugars 3g	
Protein 1g	
Vitamin A 2%	• Vitamin C 15%
Calcium 0%	• Iron 2%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Solanaceae (Nightshade)

Solanaceae are a family of flowering plants. Fruits of flowers (eggplants, tomatoes, peppers) and tubers (potatoes). Many members of this family contain potent alkaloids and some are highly toxic to humans. This family is characterized by flowers in clusters of five, with five stamens and one superior ovary. Most species in this family prefer warmer weather and are best grown in the warmth of the summer.



Native to:

Mexico and Central America region



TYPES

Tomatillos range in color from green to purple to yellow. Green varieties include Gigante, Rendidora, Tamayo and Toma Verde. The most common is Rendidora, known for its large fruit and high yields. The purple varieties include Purple Coban, Purple de Milpa and Purple Hybrid. The yellow varieties include Amarylla and Husk. They are rarely found in grocery stores, but feature a sweeter flavor than the green and purple varieties.



GROWING CONDITIONS

Tomatillos are warm season crops that don't tolerate frost. They prefer full sun and moist, well-drained soil. Tomatillos have a tendency to sprawl and therefore do best with a trellis, tomato cage or stakes. This will also keep the fruit off the ground. Tomatillos should be harvested once the fruit fully fills the husk and it has turned from green to tan or brown.

COMPANION PLANTS

- marigolds
- nasturtiums
- basil
- mint
- chives
- parsley
- sage
- garlic
- capsicums
- carrots
- onion
- brassicas

PLANTS TO AVOID

- corn
- kohlrabi
- fennel
- dill
- potatoes
- eggplants

TIP:

Tomatillos are prone to chilling injury (a form of cold damage). Store them above 45 F.



PESTS

The threelined potato beetle can pose as a serious threat to tomatillos if it's allowed to overwinter in the soil.



Photo courtesy of University of Minnesota Extension

Tomato



Nutrition Facts		
Serving Size 1/2 cup chopped tomatoes (90g)		
Servings Per Container		
Amount Per Serving		
Calories 15	Calories from Fat 0	
% Daily Value*		
Total Fat 0g	0%	
Saturated Fat 0g	0%	
Trans Fat 0g		
Cholesterol 0mg	0%	
Sodium 0mg	0%	
Total Carbohydrate 4g	1%	
Dietary Fiber 1g	4%	
Sugars 2g		
Protein 1g		
Vitamin A 15%	• Vitamin C 20%	
Calcium 0%	• Iron 2%	
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:		
	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g
Calories per gram:		
Fat 9 • Carbohydrate 4 • Protein 4		

Family: Solanaceae (Nightshade)

Solanaceae are a family of flowering plants. Fruits of flowers (eggplants, tomatoes, peppers) and tubers (potatoes). Many members of this family contain potent alkaloids and some are highly toxic to humans. This family is characterized by flowers in clusters of five, with five stamens and one superior ovary. Most species in this family prefer warmer weather and are best grown in the warmth of the summer.



Native to:

Western South America and Central America region



TYPES

Tomato varieties can be described as heirloom or hybrid. Heirloom tomatoes are older varieties that self-pollinate and consistently pass down the same traits to their offspring. They are known for their flavors, textures and colors. Hybrid tomatoes come from different parents and produce seeds that don't pass down the same characteristics. They are bred to be more disease-resistant and to have a longer shelf life.



GROWING CONDITIONS

Due to their longer growing season, tomatoes are typically transplanted rather than direct-seeded. Tomatoes should be planted in full sun, in loose, nutrient-rich soil. Stakes and tomato cages are used to support stems and keep tomato fruits off the ground. Store fruits at room temperature. Refrigeration reduces their flavor.

COMPANION PLANTS

- chives
- onion
- garlic
- peppers
- spinach
- lettuce
- arugula
- carrots
- asparagus
- borage
- parsley
- mint
- basil
- marigolds
- nasturtiums

PLANTS TO AVOID

- broccoli
- cabbage
- corn
- kohlrabi
- potatoes
- fennel

TIP:

When planting a tomato transplant, pinch off a few of the lower branches and then plant the root ball so that the newest bottom leaves are just above soil. This will ensure that tomato plants develop a good root system.



PESTS

The tomato fruitworm feeds on both the tomato fruit and leaves and destroys the plant.



Photo courtesy of University of Minnesota Extension

Turnip



Nutrition Facts	
Serving Size 1 cup cubed Turnips (130g)	
Servings Per Container 1	
Amount Per Serving	
Calories 35	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 85mg	4%
Total Carbohydrate 8g	3%
Dietary Fiber 2g	8%
Sugars 5g	
Protein 1g	
Vitamin A 0%	• Vitamin C 45%
Calcium 4%	• Iron 2%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Brassicaceae (Brassicas, mustard family, cabbage family, cole crops)

Many of the crops in this family are direct descendants of wild mustard, each domesticated for a different harvestable part: leaves (kale), leaf buds (cabbage, Brussels sprouts), stems (kohlrabi), flowers (broccoli, cauliflower) and roots (turnip). This family is sometimes referred to as crucifers as well, because all the flowers have four petals that resemble a cross. They prefer cooler weather, and are best grown in spring and fall. Many leafy members even taste better after undergoing a frost!



Native to:
Southwest and Central Asia



TYPES

Turnips can vary in taste (bitter to sweet), color (white, red, yellow, orange, purple), and shape (round to long and conical).



GROWING CONDITIONS

Turnips require moderate water. They don't require many nutrients, but can benefit from organic matter. Before seeding, loosen the soil and work in some compost. They prefer cooler weather (which improves taste) and are best grown in spring or fall.

COMPANION PLANTS

- onion family
- peas

PLANTS TO AVOID

- potatoes

TIP:

Turnips can also be grown for greens! Cut leaves once they're 4 inches tall, just be sure to leave a few behind so the root can continue to grow.



PESTS

The flea beetle eats leaves and creates tiny holes.



Winter Squash and Pumpkin



Nutrition Facts	
Serving Size 1/2 cup cubed Winter Squash (103g)	
Servings Per Container 1	
Amount Per Serving	
Calories 40	Calories from Fat 5
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 9g	3%
Dietary Fiber 3g	12%
Sugars 3g	
Protein 1g	
Vitamin A 110%	• Vitamin C 15%
Calcium 2%	• Iron 2%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Family: Cucurbitaceae (cucurbits, gourd family)

They're a heat-loving family. The fruit, and sometimes the flowers, called squash blossoms, are harvested and eaten. They're generally vining plants with tendrils. Members of the family have separate male and female flowers on the same plant, so pollinators must be present for fruit set, and sometimes need other plants such as nasturtium to attract them.



Native to:
North America and
Central America



TYPES

Winter squash includes pumpkins, butternut, acorn, hubbard, delicata, etc. They vary in taste, texture, shape and color. The fruit can be left on plants until the first frost, but they are typically left in the field, detached from plant, to cure for 1 week in dry sunny weather. This can be done inside as well if weather is not optimal. They are good storage fruits and can last for weeks to months after harvest.



GROWING CONDITIONS

These plants need a very long growing season, so they are typically started as transplants in Minnesota. (They have a sensitive taproot, so be careful when handling.) They need heavy and even watering and have high nutrient requirements, so be sure to work compost into the soil before planting. Give them plenty of space! Less is more, otherwise they will overtake everything in your garden as they vine along the ground. There are some varieties available in more compact bush types if space is a constraint, but they still need enough room as well.

COMPANION PLANTS

- corn
- nasturtium
- radish
- beans

PLANTS TO AVOID

- potatoes

TIP:

Use black plastic mulch or landscape fabric to help warm the soil faster before planting, and then later, this ground cover will help retain moisture and protect the fruit, keeping it lifted off the soil.



PESTS

cucumber beetle, squash bug, squash vine borer



Visit urbanventures.org to learn more about
the farm and volunteer opportunities.



Allina Health