31 North Country Garden Vegetable Profiles

Detailed descriptions, growing instructions, site and soil requirements, varieties, and solutions for managing pests and diseases

Asparagus
Vegetable (Cool Season) - Other
*Asparagus officinalis*
Liliaceae Family

Among the earliest crops in spring, plantings of this hardy perennial can last for decades if well cared for, and the fine foliage makes it a natural for edible landscaping. The tender spears are tastiest when eaten as soon as possible after harvest.

Sunlight: full sun - part shade
Soil conditions: requires well-drained soil; tolerates acid soil; tolerates droughty soil
Prefers loose, deep soils high in organic matter.
Prefers pH near 7.0, but tolerates a wide range.
Add lime and fertilizer before establishment.
Ease-of-care: moderately difficult
Height: 5 to 9 feet
Spread: 2 to 2.5 feet
Flower color: green; Small, yellowish green. Older varieties such as Mary Washington have male and female flowers on separate plants. Male flowers are larger and longer than female.
Foliage color: light green
Foliage texture: fine; Fernlike, finely dissected.
Shape: upright; Tall with fern-like fronds.
Shape in flower: same as above
Tolerates: salt
Special characteristics: not native to North America - Mediterranean bears ornamental fruit - Small, bright red berries on the open-pollinated cultivars only.
Special uses: edible landscaping
How to plant: Propagate by seed, division or separation - Purchase disease-free, 1-year-old crowns for planting. Divide plants in early spring, if desired. Asparagus can also be grown from seed, but requires an extra year to establish.
Germination temperature: 70 F to 77 F
Days to emergence: 10 to 12 - Seed can be saved 3 years.
Maintenance and care: Carefully consider site before planting this long-lived perennial. Test soil and apply phosphorus, potassium and lime as indicated before planting. Avoid frost pockets as late killing frosts will damage spears.
Plant crowns 4 to 6 weeks before average last frost, 18 to 24 inches apart in trenches 8 inches deep. (5 inches deep for Jersey series cultivars.) Spread roots in bottom of trench and cover with 1 to 2 inches of soil. Gradually cover with more soil as the plants grow.
Do not cut back ferns in fall until they die naturally.
**Maintenance and care:** Do not plant until danger of frost has passed and soil has warmed. Germination is poor when soil temperature is below 60 F. Cold air temperatures (even above freezing) can injure plants and reduce yields.

Plant seed one inch deep (deeper if soil is dry), about 2 inches apart, in rows 18 to 36 inches apart. Soaking beans to hasten germination may damage seeds. Do not start seed inside.

For a steady supply of beans, make successive plantings until mid-July. Relay-crop beans following harvest of cool-season crops, such as lettuce, spinach and peas.

Beans require even moisture - about 1 inch per week - especially when flowering and developing pods. If you water, avoid wetting foliage, which encourages disease. Water early in the day so foliage dries quickly. Mulch after second set of true leaves develops to help retain moisture.

Do not use nitrogen fertilizers. Inoculating seed with rhizobium bacteria may increase yields, especially in soils where beans have not been grown before.

Pod set is often poor when temperatures exceed 90 F. Deformed pods may be the result of lack of moisture, poor soil fertility or insect damage during blooming.

A three-year rotation helps reduce some diseases.

**Pests:** Mexican bean beetles - Handpick and destroy beetles and eggs in small plantings. Plant early to avoid this pest. Turn under any infested plants after harvest.

Aphids - A hard stream of water can be used to remove aphids from plants. Wash off with water occasionally as needed early in the day. Check for evidence of natural enemies such as gray-brown or bloated parasitized aphids and the presence of alligator-like larvae of lady beetles and lacewings.

Leafhoppers - Small, light green to gray wedge-shaped insects that suck plant juices, causing stunting, and carrying virus diseases. No cultural control available.

Seedcorn maggot - Avoid heavy manure or organic matter in garden which attract maggot flies and encourages egg laying. Purchase insecticide-treated seed. Use gloves to plant.

Spider mites (two-spotted) - Wash off with water occasionally as needed early in the day. A hard stream of water can be used to remove many mites from plants.

**Diseases:** To reduce disease spread, do not work among wet plants.

Bacterial blights - Avoid wetting foliage if possible. Water early in the day so aboveground plant parts will dry as quickly as possible. Avoid crowding plants. Space apart to allow air circulation. Eliminate weeds around plants and garden area to improve air circulation. Do not save your own seed.

Bean common mosaic virus (BV-1 and NY 15) - Remove and discard or destroy entire infested plant along with immediately surrounding soil and soil clinging to roots. Use resistant varieties: Lancer, Provider, Blue Bush 274, Golden Butterwax, Royal Burgundy, Tendercrop, Improved Tendergreen. Manage insect vectors.

White mold - Avoid wetting foliage if possible. Water early in the day so aboveground plant parts will dry as quickly as possible. Avoid crowding plants. Space apart to allow air circulation. Eliminate weeds around plants and garden area to improve air circulation. In autumn rake and dispose of all fallen or diseased leaves and fruit. Crop rotation is essential.

**Varieties:** There are many varieties of bush beans to choose from. Pod color ranges from dark green to yellow (often called wax beans) and even to purple. Pods may be round or flat. (Romano types typically have broad, flat pods.) French filet beans are slender and you should harvest them when they are 1/8 to ¼ inch in diameter. Many varieties offer resistance to diseases such as anthracnose, bean mosaic virus, halo blight, bacterial blight, and downy and powdery mildews. Be sure to choose resistant varieties if you experience problems with bean diseases in your garden.

You can harvest most varieties as snap beans, shell beans or dry beans. But each variety is usually best at just one of the three stages. Many heirloom varieties are available.

Some varieties recommended for New York include:

**Green pods:**
- Bush Blue Lake
- Charon
- Derby
- Jade
- Provider

**Roma II (Italian flat pod)**
- Tendergreen Improved
- Golden Butterwax
- Golden Rod
- Rœdor

**Yellow pods (wax beans):**
Pod set is often poor when temperatures exceed 90 F. Deformed pods may be the result of lack of moisture, poor soil fertility or insect damage during blooming. A three-year rotation helps reduce some diseases.

**Pests:** Mexican bean beetles - Handpick and destroy beetles and eggs in small plantings. Plant early to avoid this pest. Turn under any infested plants after harvest.

Aphids - A hard stream of water can be used to remove aphids from plants. Wash off with water occasionally as needed early in the day. Check for evidence of natural enemies such as gray-brown or bloated parasitized aphids and the presence of alligator-like larvae of lady beetles and lacewings.

Leafhoppers - Small, light green to gray wedge-shaped insects that suck plant juices, causing stunting, and carrying virus diseases. No cultural control available.

Seedeom maggot - Avoid heavy manure or organic matter in garden which attract maggot flies and encourages egg laying. Purchase insecticide-treated seed. Use gloves to plant.

Spider mites (two-spotted) - Wash off with water occasionally as needed early in the day. A hard stream of water can be used to remove many mites from plants.

**Diseases:** To reduce disease spread, do not work among wet plants.

Bacterial blights - Avoid wetting foliage if possible. Water early in the day so aboveground plant parts will dry as quickly as possible. Avoid crowding plants. Space apart to allow air circulation. Eliminate weeds around plants and garden area to improve air circulation. Do not save your own seed.

Bean common mosaic virus (BV-1 and NY 15) - Remove and discard or destroy entire infested plant along with immediately surrounding soil and soil clinging to roots. Use resistant varieties: Lancer, Provider, Blue Bush 274, Golden Butterwax, Royal Burgundy, Tendercrop, Improved Tendergreen. Manage insect vectors.

White mold - Avoid wetting foliage if possible. Water early in the day so aboveground plant parts will dry as quickly as possible. Avoid crowding plants. Space apart to allow air circulation. Eliminate weeds around plants and garden area to improve air circulation. In autumn rake and dispose of all fallen or diseased leaves and fruit.

Crop rotation is essential.

**Varieties:** Pole bean varieties mirror bush beans. Pod color ranges from dark green to yellow (often called wax beans) and even to purple. Pods may be round or flat. (Romano types typically have broad, flat pods.) French filet varieties are slender and you should harvest them when they are 1/8 to 3/4 inch in diameter. Be sure to choose resistant varieties if you experience problems with bean diseases in your garden. You can harvest most varieties as snap beans, shell beans or dry beans. But each variety is usually best at just one of the three stages.

Many heirloom varieties are available.

Some varieties recommended for New York include:

Green pods:

- Blue Lake
- Fortex
- Kentucky Wonder
- Kentucky Blue

**Broccoli**

Vegetable (Cool Season) - Cabbage Family

*Brassica oleracea var. botrytis* (Broccoli)

Brassicaceae Family

This cool-season crop grows best when daytime temperatures are in the 60s F. Grow in both spring and fall, but avoid mid-summer crops as hot weather can cause premature bolting. Romanesco types are especially handsome choices for edible landscaping.

**Sunlight:** full sun; Can tolerate light shade but will slow maturity.

**Soil conditions:** requires well-drained soil; Prefers fertile soil high in organic matter, pH 6.0 to 7.5. Can tolerate slightly alkaline soil. Needs plentiful, consistent moisture.

**Lifecycle:** annual; Biennial grown as an annual.

**Ease-of-care:** moderately difficult; Requires good soil, timely planting and protection from pests.

**Height:** 2 to 3 feet
Green Valiant
Marathon
The Italian cultivar ‘Romanesco’ is actually a cauliflower, though usually included with broccoli in seed catalogs.
“Broccoflowers” are a broccoli/cauliflower cross.

**Brussels sprouts**
Vegetable (Cool Season) - Cabbage Family
*Brassica oleracea var. gemmifera*
Brassicaceae Family

This cool-season crop is most flavorful after it is “kissed” by frost. Keep plantings moist and well-mulched during the heat of summer, and you will be rewarded with sprouts until Christmas or beyond.

**Sunlight:** full sun; Can tolerate light shade but will slow maturity.
**Soil conditions:** requires well-drained soil; Prefers well-drained, fertile soil high in organic matter, pH 6.0 to 7.5. Can tolerate slightly alkaline soil. Needs plentiful, consistent moisture.
**Lifecycle:** annual; Biennial grown as an annual.
**Ease-of-care:** moderately difficult; Requires good soil, timely planting and protection from pests.
**Height:** 2 to 3 feet
**Spread:** 1.5 to 2 feet
**Foliage color:** medium green; Foliage and sprouts have bluish cast.
**Foliage texture:** medium
**Shape:** upright
**Tolerates:** frost - Frost improves flavor. Harvest continues until Halloween or even Thanksgiving in some areas.
**Special characteristics:** not native to North America - Not known in the wild; Descended from wild Mediterranean kale.
**How to plant:** Propagate by seed
**Germination temperature:** 45 F to 85 F - Will germinate at soil temperatures as low as 40 F.
**Days to emergence:** 5 to 8
**Maintenance and care:** Grow in summer for fall harvest, similar to a fall cabbage or broccoli crop.
Direct seed about 4 months before expected fall frost. Plant seed 3 to 4 inches apart, ¼ to ½ inch deep in rows about 30 inches apart. Thin plants to about 18 inches apart.
Start transplants in late May and transplant in late June or early July. Space plants 18 to 24 inches apart.
Plants have shallow root systems. Avoid even shallow cultivation. Mulch to protect roots, reduce weed competition and conserve moisture.
Use floating row covers to help protect from early insect infestations.
To help reduce disease, do not plant Brussels sprouts or other cole crops in the same location more than once every three or four years.
**Pests:** Cabbage aphids - A hard stream of water can be used to remove aphids from plants. Wash off with water occasionally as needed early in the day. Check for evidence of natural enemies such as gray-brown or bloated parasitized aphids and the presence of alligator-like larvae of lady beetles and lacewings.
Cabbage root maggot - White maggot larvae tunnel in and feed on roots of plants. Damage causes wilting early on, death of plants later on.
Cabbageworms - Handpick and destroy. Row covers may be useful on small plantings to help protect plants from early damage. Put in place at planting and remove before temperatures get too hot in midsummer.
Flea Beetles - Use row covers to help protect plants from early damage. Put in place at planting and remove before temperatures get too hot in midsummer. Control weeds.
Cutworms - Control weeds. Cardboard collars around each plant give good protection.
**Other pests:** Cabbage loopers; Slugs; Nematodes
Pests: Cabbage aphids - A hard stream of water can be used to remove aphids from plants. Wash off with water occasionally as needed early in the day. Check for evidence of natural enemies such as gray-brown or bloated parasitized aphids and the presence of alligator-like larvac of lady beetles and lacewings. Cabbage root maggot - White maggot larvae tunnel in and feed on roots of plants. Damage causes wilting early on, death of plants later on. Cabbage worms - Handpick and destroy. Row covers may be useful on small plantings to help protect plants from early damage. Put in place at planting and remove before temperatures get too hot in midsummer. Flea Beetles - Use row covers to help protect plants from early damage. Put in place at planting and remove before temperatures get too hot in midsummer. Control weeds. Cutworms - Control weeds. Cardboard collars around each plant give good protection.

Other pests: Cabbage loopers; Slugs; Nematodes

Diseases: Clubroot - Locate new plants in part of garden different from previous year's location. If that is not possible, remove infested soil and replace with fresh soil. Purchase healthy transplants or start seed in sterile potting mix or fresh ground. Rogue plants. Remove and discard or destroy entire infested plant along with immediately surrounding soil and soil clinging to roots. If soil infested, add lime to raise soil pH to 7.2 Purple blotch (Alternaria porri) - Avoid wetting foliage if possible. Water early in the day so aboveground plant parts dry as quickly as possible. Avoid crowding plants, allowing air circulation. Eliminate weeds around plants and garden area to increase air circulation. Practice plant sanitation. When plants are not wet, remove and destroy affected plant parts. In autumn rake and destroy all fallen or diseased leaves and fruit.

Other diseases: Cabbage yellows; Black rot; Black leg

Varieties: Plant early, midseason and late varieties to spread out harvest. Early varieties tend not to store well. Late varieties tend to be better for storage or for making sauerkraut. Some varieties are resistant to certain diseases and insects. Varieties may vary in head size, shape (round, flat, conical) and colors (green, red or purple). Savoy cabbage has wrinkled leaves, and is sometimes classed in a different group, Brassica oleracea var. sabauda. Savoy varieties are prized for their flavor as well as their good looks.

Varieties recommended for New York include:

Early season:
- Jersey Wakefield
- Heads Up

Midseason:
- Savoy Chieftain
- Market Prize – hybrid, yellows resistant
- Ruby Perfection -- hybrid

Late season:
- Huron -- hybrid
- Pacifica
- Tastie
- Savoy Ace-- hybrid
- Savoy King -- hybrid
- Lenno

Carrots
Vegetable (Cool Season) - Parsley Family
Daucus carota var. sativus
Umbelliferae Family

Careful attention to the soil makes these Vitamin A-rich roots a snap to grow. Plant in deep, stone-free soil (a raised bed is great) with a fine surface. Thin and weed carefully, and mulch to keep soil cool.

Sunlight: full sun; Will tolerate very light shade.

Soil conditions: requires well-drained soil

Good quality roots require plentiful moisture and soil that is deep, loose, free of stones, and high in organic matter. Roots can become twisted and forked in heavy, stony soil. Prefers pH of 6.0 to 6.8 but can tolerate 5.5 to 7.5. Requires only moderate nitrogen. Too much can cause root branching.
Choose short-season varieties for early planting and summer eating. Choose longer-season varieties for fall harvest and storage.

Some varieties recommended for New York include:

- Bolero
- Cosmic Purple
- Healthmaster
- Royal Chantenay
- Kinko
- Rumba

**Cauliflower**

Vegetable (Cool Season) - Cabbage Family  
*Brassica oleracea var. botrytis* (Cauliflower)

Brassicaceae Family

The most finicky and difficult of the cole (cabbage family) crops to grow, cauliflower flourishes when temperatures are moderate. Purple (left), orange and yellow-green colored varieties make good addition to flower gardens.

**Sunlight:** full sun; Can tolerate light shade but will slow maturity. Light shade can be beneficial in warm weather.

**Soil conditions:** requires well-drained soil; Prefers well-drained, fertile soil high in organic matter, pH 6.0 to 7.5. Can tolerate slightly alkaline soil. Needs plentiful, consistent moisture.

**Lifecycle:** annual; Biennial grown as an annual.

**Ease-of-care:** difficult; In addition to tying heads to blanch white-headed varieties, cauliflower requires good soil, timely planting and protection from pests.

**Height:** 1 to 2 feet  
**Spread:** 1.3 to 3 feet  
**Foliage color:** medium green; dark green - Some varieties have white stems and veins.  
**Foliage texture:** medium  
**Shape:** cushion, mound or clump  
**Tolerates:** frost - Mature heads will not tolerate hard freezes.

**Special characteristics:** not native to North America - Not known in the wild. Descended from wild Mediterranean kale.

**How to plant:** Propagate by seed  
**Germination temperature:** 45 F to 85 F - Will germinate at soil temperatures as low as 40 F.  
**Days to emergence:** 4 to 7 - Seed can be saved 5 years.

**Maintenance and care:** Most finicky of the cole (cabbage family) crops. Heads will not develop properly in hot or dry weather, so timing is crucial. Will tolerate cold as well as other cole crops in spring, but mature heads are not resistant to hard freezes.

Sow seeds indoors 4 to 6 weeks before average last spring frost. Keep soil warm (about 75 F), until germination. Then keep plants around 60 F. Provide direct sun so plants don’t get leggy. When plants are 4 to 6 weeks old, transplant into garden 15 to 24 inches apart in rows 24 to 36 inches apart. Wait until soil temperature is 50 F or above and danger of frost is past before transplanting.

Larger, older transplants are more likely to bolt when exposed to cool temperatures in the garden. Transplant when plants have four or five true leaves.

Some cultivars will form small “button” heads when the weather turns warm following a 10-day stretch when high temperatures only reach the 40s F.

Direct seeding is more difficult than with other cole crops, especially in spring. For fall crops, plant seed in late-spring early summer ½ to ¾ inch deep, about 3 inches apart. Thin to final spacings. Or start transplants in late May and transplant in late June or early July.

Plants have shallow root systems. Avoid even shallow cultivation. Mulch to protect roots, reduce weed competition and conserve moisture.

To preserve the white color of the curd, use string or rubber bands to secure outside leaves over the head when it is about 2 to 3 inches in diameter. From tying to harvest may take less than a week in summer or as long as a month in fall.
Shape: cushion, mound or clump, upright
Tolerates: frost - Will tolerate light frost but can be damaged by a moderate frost.
Special characteristics: not native to North America - Mediterranean origin.
How to plant: Propagate by seed
Germination temperature: 70 F to 75 F - Optimum when starting indoors.
Days to emergence: 14 to 21 - Seed can be saved 5 years.
Maintenance and care: Start plants inside about 10 to 12 weeks before last frost. Plant several seeds per cell.
Seeds need light to germinate, so don’t cover seed deeply. Keep soil moist and warm (about 70 F to 75 F) until seeds germinate in 2 to 3 weeks. After germination, grow inside in a cool location (about 60 F to 70 F). Thin to one seed per cell.
Plants will withstand light frost, but 10 days with night temperatures below 40 and days below 55 F can cause bolting. So harden plants by reducing water, not lowering temperature.
Set out transplants 6 to 12 inches apart, rows 18 to 36 inches apart, about 2 weeks before average last frost.
Plants are shallow-rooted and require consistent moisture. Lack of water will make stalks fibrous and bitter.
Mulch to retain moisture, suppress weeds and avoid disturbing roots when cultivating.
For a milder flavor, blanch by wrapping stalks two weeks before harvest with paper, a cardboard milk carton or other material.
Pests: Aphids; Tarnished plant bug; Cabbage loopers; Whiteflies; Cutworms
Use floating row covers early in the season, and collars if cutworms are present.
Diseases: Leaf blights; Celery mosaic
Black heart - calcium deficiency, add lime
Celery diseases are rarely a problem in home gardens.
Varieties: Look for different days to maturity, bolt-resistance, and color - green, red or yellow “self-blanching” types.

Cucumbers
Vine, Vegetable (Warm Season) - Cucurbit
Cucumis sativus
Cucurbitaceae Family

Whether for pickling or slicing, cucumbers are easy to grow if you give them good soil, full sun and sufficient moisture, and wait for weather to warm before planting.

Sunlight: full sun
Soil conditions: requires well-drained soil; requires high fertility
Well-drained, fertile soil, high in organic matter with near-neutral pH. Consistent, plentiful moisture needed until fruit is ripening. May develop bitter taste in dry sites. Cucumbers are heavy nitrogen feeders and require fertile soil.
Special locations: outdoor containers - Use bush varieties and keep well watered.
Lifecycle: annual
Ease-of-care: easy; Cucumbers are not hard to grow if you provide good soil, plenty of moisture and full sun, wait for soil and weather to warm before planting, and use fabric row covers if pests are a problem.
Height: 1 to 6 feet; Vining varieties can climb up to 6 feet with support, or hug the ground if allowed to sprawl.
Spread: 1 to 6 feet; Bush varieties take up only 2 or 3 square feet, while unsupported vining varieties can run along the ground for 6 or more feet.
Bloom time: mid-summer; late summer; early fall
Flower color: yellow
Foliage color: medium green
Foliage texture: medium
Shape: upright; climbing / vine
Shape in flower: same as above
Diseases: Bacterial wilt (Erwinia tracheiphila) - Remove and discard or destroy infested plants. Control cucumber beetles that spread the bacteria. (See striped or spotted cucumber beetles.) Control as soon as they appear. Some varieties are less susceptible to bacterial wilt but may not be readily available.
Powdery mildew - Avoid crowding plants. Space apart to allow air circulation. Eliminate weeds around plants and garden area to improve air circulation. In autumn, rake and dispose of all fallen or diseased leaves and fruit. Plant resistant varieties such as Marketmore 76, Slicemaster and Raider.
Scab - Avoid wetting foliage if possible. Water early in the day so aboveground plant parts will dry as quickly as possible. Avoid crowding plants. Space apart to allow air circulation.
Cucumber mosaic virus - Remove and discard or destroy infested plants. Plant resistant varieties such as Pacer, Marketmore 76, Dasher II, Slicemaster, Spacemaster and Sweet Success. Manage aphids that spread virus. Eliminate perennial weeds such as milkweed, marshcress and yellow rocket; and avoid planting next to susceptible ornamentals.
Other diseases: Anthracnose; Leaf spot

Varieties: When choosing cucumber varieties, keep in mind:
Picking varieties bear short fruit (usually 3 to 4 inches) with thin skins and spines, usually with a stippled color pattern ranging from dark green at the stem to light green at the blossom end. They are usually ready to harvest sooner than slicing varieties, but harvest only lasts about 7 to 10 days.
Slicing varieties have longer fruit (usually 7 to 8 inches) with a thick skin. Their coloring is sometimes stippled but is usually a uniform dark green. They usually start to bear a week or so later than pickling varieties, but harvest may continue for 4 to 6 weeks.
Vining varieties produce more fruit than bush varieties, but they take up much more space. Bush varieties bear fruit slightly earlier than vining varieties, and are easier to care for and harvest.
"Burpless" varieties have been selected to eliminate gas build-up that affects some people.
Seedless European varieties bred for greenhouse production usually perform poorly in gardens.
In the coldest areas of the state, choose early-season varieties and/or use black plastic mulch, row covers, and other season extenders to speed soil warming and protect plants. Choose disease-resistant varieties to reduce the disease problems.
Some varieties recommended for New York:

Slicing:
Spacemaster - Scab- and mosaic-resistant, dwarf vine
Sweet Slice - hybrid, Scab- and mosaic-resistant, non-bitter
Marketmore 80 - Scab- and mosaic-resistant, Powdery mildew resistant or tolerant, non-bitter
Marketmore 76 - Scab- and mosaic-resistant, Powdery mildew resistant or tolerant
Burpless Hybrid II - Mosaic resistant
Orient Express
Raider
Greensleeves

Pickling:
Regal - hybrid, Scab- and mosaic-resistant
National Pickling

Several other species in the genus Cucumis are also called cucumbers:
West Indian gherkins, Cucumis anguria. Gherkin pickles are usually just immature common cucumbers, Cucumis sativus.
Chinese or Asian cucumbers, Cucumis melo var. conomon. These are the same species as melons and cantaloupes. Often much longer than common cucumbers (up to 20 inches), Asian cucumbers produce few seeds and are "burpless." Grow on trellises if you want straight fruit.
African horned cucumber, Cucumis metuliferus. Often sold under the tradename kiwano, it is more commonly used like a fruit
**Pests:** Aphids - A hard stream of water can be used to remove aphids from plants. Wash off with water occasionally as needed early in the day. Check for evidence of natural enemies such as gray-brown or bloated parasitized aphids and the presence of alligator-like larvae of lady beetles and lacewings.
Flea beetles - Control weeds. Use row covers to help protect plants from early damage. Put in place at planting and remove before temperatures get too hot or plants start to flower.
Colorado potato beetles - Handpick beetles, larvae and eggs.
Cutworms - Use cardboard collars around transplants if cutworms are a problem.

**Diseases:** Verticillium wilt - Most serious disease of eggplant. Remove and destroy entire infested plant along with immediately surrounding soil and soil clinging to roots. Set into soil never planted to tomatoes, peppers, or strawberries. If you cannot, locate new plants in a part of the garden different from previous year’s location, remove infested soil and replace with fresh soil.

**Varieties:** Heat-loving eggplants may be difficult to grow successfully. Look for short-season varieties that will fruit under cool New York conditions. Asian varieties are usually long and thin. Their skins are often thin enough that they don’t need peeling.
Varieties recommended for New York include:

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<tr>
<th>Early varieties:</th>
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<tr>
<td>Ichiban- hybrid, long</td>
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<td>Dusky- hybrid</td>
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<td>Early Beauty- hybrid</td>
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<td>Little Fingers- long</td>
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<th>Midseason varieties:</th>
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<tr>
<td>Black Magic- hybrid</td>
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<td>Classic- hybrid</td>
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<td>Black Beauty</td>
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<tr>
<td>Neon</td>
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<td>Ghostbuster- hybrid, white</td>
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**Garlic**

Vegetable (Cool Season) - Onion Family

*Allium sativum var. sativum and ophiosco*

Alliaceae Family

Synonym: *Allium ampeloprasum*

Easy to grow and productive - a pound of cloves can produce 7 to 10 pounds of garlic - the “stinking rose” needs rich, well-drained soil, full sun and excellent weed control.

**Sunlight:** full sun

**Soil conditions:** requires well-drained soil; requires high fertility - Well-drained, fertile, with plenty of organic matter. Slightly dry sites preferable. Tolerates wide pH range but prefers slightly acid soil (6.2 to 6.8).

**Lifecycle:** annual; Perennial grown as an annual. (Fall-planted, harvested the following summer.)

**Ease-of-care:** easy; Easy if you have rich well-drained soil and good weed control.

**Height:** 1 to 2 feet

**Spread:** 0.5 to 1 feet

**Foliage color:** medium green

**Foliage texture:** medium

**Shape:** upright

**Shape in flower:** same as above

**Tolerates:** frost

**Special characteristics:** not native to North America

**Special uses:** edible flowers

**How to plant:** Propagate by division or separation – Cloves must be exposed to temperatures below 65 F or they may fail to form bulbs when planted. Plants may produce flowers, but they are usually sterile.

**Maintenance and care:** Garlic prefers cool weather when developing foliage, and warm weather when bulbs enlarge.

Choose a weed-free, well-drained location. Raised beds are ideal. Do not plant where other onion family crops have been grown in the past 3 years.
Tolerates: frost - Flavor improved when plants are “kissed” by frost.
Special characteristics: not native to North America - Not known in the wild. Descended from wild Mediterranean kale.
Special uses: edible landscaping
How to plant: Propagate by seed
Germination temperature: 45 F to 85 F - Will germinate at soil temperatures as low as 40 F.
Days to emergence: 4 to 7; Seed can be saved 4 years.
Maintenance and care: Direct seed about three months before expected fall frost. Plant seeds ¼ to ½ inch deep, 1 inch apart in rows 18 to 30 inches apart. Thin to 12- to 18-inch spacings. Eat or transplant thinnings. Similar to cabbage and other cole crops, you can also set out transplants in spring 4 to 6 weeks before average last frost, 12 inches apart, rows 18 to 24 inches apart. Doesn't seem to be as troubled by pests as most other cole crops. Use floating row covers to help protect from early insect infestations.
To help reduce disease, do not plant kale or other cole crops in the same location more than once every three or four years.
Pests: Cutworm; Cabbage loopers; Cabbageworms; Flea beetles; Cabbage root maggots; Cabbage aphids; Slugs and snails; Nematodes - Usually not as susceptible to pest damage as other cole crops.
Diseases: Clubroot; Black rot; Black leg; Alternaria - To help reduce disease, do not plant kale or other cole crops in the same location more than once every three or four years.
Varieties: Look for different colors, days to harvest. Some varieties have curly or savoyed leaves resembling parsley. Colorful ornamental varieties tend to be less flavorful.
Red Russian kale is a different species, Brassica napus var. pabularia, but cultivated similarly.
Some varieties recommended for New York include:
- Dwarf Green Curled
- Winterbor - hybrid
- Vates
- Red Russian
- Blue Knight - hybrid

Lettuce
Vegetable (Cool Season) - Salad Greens
Lactuca sativa
Asteraceae Family

With the variety of colors, shapes and flavors available, your salads may never be the same. Lettuce is adaptable to many growing conditions, but likes it cool - 60 F to 65 F. Grow in spring and fall, and slow bolting by shading summer crops.

Sunlight: full sun; part shade - Yields best in full sun. Part shade helpful when it’s hot.
Soil conditions: requires well-drained soil; Tolerant of a wide range of soils, but prefers well-drained, cool, loose soil with plentiful moisture and pH 6.2 to 6.8. Sensitive to low pH. Lime to at least 6.0.
Special locations: outdoor containers
Lifecycle: annual
Ease-of-care: easy
Height: 0.5 to 2 feet
Spread: 0.5 to 2 feet
Foliage color: light green; medium green; dark green; red; purple; variegated
Foliage texture: medium
Shape: cushion, mound or clump; Romaine (Cos) varieties tend toward upright.
Tolerates: frost - Will withstand light to moderate frost. Hardened seedlings more tolerant than mature plants.
Special characteristics: not native to North America - Mediterranean origin. Was cultivated by Egyptians 6,500 years ago.
Special uses: edible landscaping
Summer Bibb  
Winter Density  
Four Seasons  
French: Sierra  
Tom Thumb  
Ithaca

Butterhead:  
Dark Green Boston  
Sangria  
Buttercrunch  

Crisphead (Iceberg):  
Burpee Iceberg  
Great Lakes 659 – fall  

Esmerelda  

Summertime

**Melons (See separate listing for watermelon.)**

Vegetable (Warm Season) - Cucurbit  
Also known as muskmelon, cantaloupe, honeydew melon  
*Cucumis melo*  
Cucurbitaceae Family

Heat-loving melons can be a challenge to grow in cooler regions of New York. To increase success, choose short-season varieties, start them inside, warm soil with black plastic or IRT mulch, and protect young plants with fabric row covers.

**Sunlight:** full sun  
**Soil conditions:** requires high fertility; Prefers warm, well-drained, soil, high in organic matter with pH 6.5 to 7.5. Consistent, plentiful moisture needed until fruit is about the size of a tennis ball. Soil temperatures below 50 F slow growth. Consider using black plastic and fabric row covers to speed soil warming. Sandy or light-textured soils that warm quickly in spring are best.  
**Special locations:** outdoor containers - Bush varieties can be grown in large containers on patios, decks, etc.  
**Lifecycle:** annual, Tender annual.  
**Ease-of-care:** moderately difficult - In northern New York, success requires starting plants indoors, using plastic mulch to warm soil, and fabric row covers to protect young transplants.  
**Height:** 1 to 1.5 feet  
**Spread:** 3 to 12 feet  
**Foliage color:** medium green  
**Foliage texture:** coarse  
**Shape:** low and trailing; climbing / vine  
**Special characteristics:** not native to North America - Origins uncertain. Has been cultivated since ancient time in Asia, West Africa and Mediterranean regions.  
**How to plant:** Propagate by seed  
**Germination temperature:** 60 F to 95 F  
**Days to emergence:** 3 to 5 - In very warm (90 F) soil. About 10 days at 70 F. Seed can be saved 4 years.  
**Maintenance and care:** Choose fast-maturing varieties, start plants inside, use black or IRT plastic mulch to warm soil and use fabric row covers to protect plants. Direct-seed 1 to 2 weeks after average last frost when soil is 70 F or warmer. Plant ⅛ inch deep, 6 seeds per hill, hills 4 to 6 feet apart; or 1 foot apart in rows 5 feet apart. Can plant at closer spacings if trellised. Thin to 2 to 3 plants per hill.  
For transplanting, sow seeds indoors ¼ inch deep in peat pots (2-inch square or bigger), 2 to 4 weeks before setting out. Plants should have one or two true leaves when transplanted.  
Transplant at same spacings as direct-seeded crops - 2 to 3 plants per hill in hills spaced 4 to 6 feet apart, or 1 to 2 feet apart in rows 5 feet apart. Transplants are delicate and roots are sensitive to disturbance. If you need to thin, use scissors. Keep soil intact around plant when transplanting.  
Mulch plants after soil has warmed to help maintain consistent moisture and suppress weeds.  
If using fabric row covers, remove at flowering to allow pollination by bees. Good pollination is critical to fruit set.
Onions
Vegetable (Cool Season) - Onion Family
Also known as scallions, bunching onions, green onions
*Allium cepa var. cepa*
Alliaceae Family

Whether harvested early for scallions (green onions), for summer meals, or winter storage, onions need rich, well-drained soil and good weed control. Tightly spaced green onions fit well in ornamental plantings.

**Sunlight:** full sun

**Soil conditions:** requires well-drained soil; requires high fertility - Well-drained, rich soil, high in organic matter, neutral pH. Optimum pH is 6.2 to 6.8. Requires plentiful, even moisture for good yields.

**Lifecycle:** annual; Biennial grown as annual.

**Ease-of-care:** moderately difficult; Easy if you have rich well-drained soil and good weed control.

**Height:** 1 to 3 feet

**Spread:** 0.5 to 1 feet

**Bloom time:** mid-summer; Usually does not flower unless grown from sets that are too large (more than ½ to ¾ inches in diameter), or young plants (direct seeded or transplanted) are stressed by abnormally cold weather.

**Foliage color:** medium green

**Foliage texture:** medium

**Shape:** upright

**Tolerates:** frost

Special characteristics: not native to North America - Unknown in wild. Probably originated in the Middle East or Asia.

**Special uses:** edible landscaping

**How to plant:** Propagate by seed - To grow your own onion sets, sow seeds thickly in a block in midsummer. About 2 months after planting, roll down the tops, forcing the plants to form small bulbs. (Those about the size of a dime work best.) After tops dry, clip them off, leaving about ½ inch of stem. Cure and store in a cool, dry place as you would onions for eating. Plant your sets the following spring.

**Germination temperature:** 45 F to 95 F

**Days to emergence:** 4 to 5; Seed can be saved 1 year. - Longer if stored properly in cool, dry location.

**Maintenance and care:** Can be direct-seeded, grown from transplants started inside, or from sets -- small bulbs about ½-inch in diameter grown from seed the previous season.

Choose a weed-free, well-drained location. Raised beds are ideal. Onions are good for intercropping with other garden plants, especially early-maturing spring greens. Do not plant where other onion family crops have been grown in the past 3 years.

Direct-seeding in the garden may not allow enough time for long-season varieties to mature, but is fine for shorter-season varieties or for scallions - onions harvested before the bulb forms.

Direct-seed in spring when the soil reaches 50 F. Plant seed ¼ inch deep, ½ inch apart, in rows 12 to 18 inches apart. Thin to 4-inch spacings for large bulbs, 2-inch spacings for smaller bulbs but higher yields, or 1-inch spacings for scallions.
Lifecycle: annual; Biennial grown as an annual.
Ease-of-care: moderately difficult; Requires deep, well-prepared soil, early planting, and good early weed control.
Height: 2 to 3 feet
Spread: 0.5 to 1 feet
Foliage color: medium green
Foliage texture: medium
Shape: cushion, mound or clump; Leaves arise from spherical swollen stem.
Tolerates: frost
Special characteristics: not native to North America - Mediterranean origin
How to plant: Propagate by seed
Germination temperature: 50 F to 85 F
Days to emergence: 10 to 21 - Germination may take as long as 3 to 4 weeks with soil temperature at 50 F. - Seed can be saved 1 year. - Seed does not store well.
Maintenance and care: Sow seeds ½ inch deep, 1 inch apart, in rows 18 to 24 inches apart, in early spring. Seeds germinate slowly, usually in about 2 to 3 weeks (longer in cold soils). To speed germination, keep soil moist. Sow along with radishes to break soil crust and mark row. Thin to 3- to 4-inch spacings. Trim instead of pulling to avoid disturbing roots of remaining plants. Mulch to suppress weeds and retain moisture. Hill soil around base of plants to prevent greening of root shoulders.
Pests: Avoid planting on ground that was in sod the previous season. Use fabric covers to exclude insects. Carrot weevil - Clean up garden debris in autumn. Beneficial nematodes are available. Apply as directed on label. Leafhopper - Leafhoppers spread disease. No cultural control is available.
Varieties: Choose shorter-rooted varieties if your soil is not deep, light and stone-free.
Varieties recommended for New York include:
Hollow Crown
All American
Harris' Model

Peas
Vegetable (Warm Season) - Other
Also known as garden peas, shelling peas, snap peas, sugar peas, sugar snap peas, snow peas, Chinese peas, edible-podded peas,
Pisum sativum
Leguminosae Family

Like sweet corn, peas are at their tastiest immediately after harvest. Whether you choose shell or edible-pod peas, they grow best during spring and early summer when temperatures are between 60 F to 75 F.

Sunlight: full sun; part shade - Yields best in full sun.
Soil conditions: requires well-drained soil; Prefers well-drained soil, average fertility, high in organic matter with pH 6.0 to 7.0. Widely adapted, but prefers cool, damp weather. Good soil structure is important. Avoid compacting soil by working it when it’s still too wet.
Lifecycle: annual
Ease-of-care: easy
Height: 1 to 8 feet
Spread: 0.5 to 1 feet
Bloom time: mid-spring; late spring; early summer; mid-summer
Flower color: violet; white
Foliage color: light green; blue-green
Foliage texture: fine - Leafless varieties are particularly fine.
Dry peas or field peas (var. *arvense*): You allow these to mature and harden, then dry, store and cook for soups and other dishes.

Look for different maturity dates and heights. Some bush varieties grow just 1 to 2 feet tall and need little or no support. Bush varieties produce a determinate number of flowers and fruit. Viny types may grow 5 to 6 feet or more and need trellising for good yields and easy picking. They continue producing an indeterminant number of flowers and fruit over a prolonged period.

If growing fall crops, look for powdery-mildew-resistant varieties.

Some varieties recommended for New York include:

- **Early shell:**
  - Sparkle
  - Early Market
  - Maestro
  - Frosty
  - Lincoln
  - Green Arrow

- **Late shell:**
  - Little Marvel
  - Knight
  - Novella
  - Wando
  - Mr. Big - hybrid

- **Snow pea:**
  - Oregon Sugar Pod II
  - Little Sweetie
  - Mammoth Melting Sugar
  - Dwarf Gray Sugar

  - Edible pod (Snap) pea:
    - Sugar Ann
    - Early Snap

  - Progress No. 9
  - Olympia

  - Super Sugar Mel
  - Sugar Snap

**Peppers**

Vegetable (Warm Season) - Tomatoes, Peppers, Eggplant

Also known as Bell peppers, Hot peppers

*Capsicum annuum* (*culinary*)

Solanaceae Family

Sometimes peppers are a challenge to grow in cooler areas of New York. The many varieties of sweet and hot peppers thrive on full sun, warm weather, well-drained soil and modest fertility.

**Sunlight:** full sun

**Soil conditions:** requires well-drained soil; Well-drained, light, moderately fertile soil, high in organic matter. Needs steady supply of water for best performance.

**Special locations:** outdoor containers - Provides attractive plants and ornamental as well as edible fruit.

**Lifestyle:** annual; Grown as a tender annual in New York; Perennial in tropical regions

**Ease-of-care:** moderately difficult; Fruiting can be temperamental. Requires warm temperatures. Using black plastic and row covers can speed early growth.

**Height:** 1 to 3 feet

**Spread:** 1 to 3 feet

**Bloom time:** early summer; mid-summer; late summer

**Flower color:** white

**Foliage color:** dark green

**Foliage texture:** medium

**Shape:** upright

**Shape in flower:** same as above

**Special characteristics:** not native to North America - Native to tropical America.

Bears ornamental fruit - Green bell peppers turn red when fully ripe. Other varieties are yellow, orange, purple and chocolate brown. Hot peppers, chiles, and others come in many interesting shapes.

**Special uses:** edible landscaping

**How to plant:** Propagate by seed

**Germination temperature:** 70 F to 95 F - Will not germinate below 55 F.
Early Sunsation - yellow, Bacterial leaf spot resistant strains 1, 2, and 3 are noted

Hungarian Wax
Cayenne
Jalapeño
Super Chili - hybrid

Joe Parker
Cubanelle
Italian Sweet

Potatoes
Vegetable (Warm Season) - Other, Root Crop
*Solanum tuberosum*
Solanaceae Family

A nutritional mother lode, potatoes are easy to grow as long as they have full sun, moderate temperatures, and light, rich, acidic, well-drained soil. Try varieties with colors, shapes and flavors you won't find in the supermarket.

**Sunlight:** full sun; Requires at least 6 hours of sun each day.

**Soil conditions:** requires acid soil; requires well-drained soil - Prefers well-drained, light, deep, loose soil, high in organic matter. Unlike most vegetables, potatoes perform best in acid soil with pH 4.8 - 5.5. (Scab is less of a problem at low pH. If pH is more than 6.0, use scab-resistant varieties.) Needs plentiful, consistent moisture.

**Special locations:** outdoor containers - Sometimes grown in barrels etc. filled with compost.

**Lifecycle:** annual; Herbaceous perennial grown as an annual - Late spring frosts can damage foliage, but growth will usually rebound quickly from underground parts.

**Ease-of-care:** easy; Growing is easy if you have the right site and soil. Pests aren't usually as bad in garden settings as in commercial fields. Fun to grow with kids, especially if you use the deep mulching method.

**Height:** 1.5 to 3 feet

**Spread:** 1.5 to 3 feet

**Flower color:** violet

**Foliage color:** medium green

**Foliage texture:** medium

**Shape:** cushion, mound or clump

**Shape in flower:** same as above; Flowers relatively inconspicuous.

**Special characteristics:** not native to North America - Native to the Andes Mountains in South America.

**How to plant:** Propagate by division or separation - Grown from seed potatoes -- tubers grown the previous season.

**Germination temperature:** 40 F - Do not plant seed potatoes until soil reaches 40 F.

**Days to emergence:** 14 to 28 - Sprouts from seed potatoes should emerge in 2 to 4 weeks depending on soil temperature.

**Maintenance and care:** Potatoes perform best in areas where summers are cool (65 F to 70 F), but are widely adapted.

Potatoes require well-drained soil. (They will rot under prolonged cold, wet conditions.) If your soil is poorly drained or a heavy clay, consider using raised beds. Adding organic matter (compost, cover crops, well-rotted manure or leaves) is a good way to improve soil before growing potatoes. Go easy on organic matter sources high in nitrogen (such as manure) and nitrogen fertilizer as too much nitrogen can encourage lush foliage at the expense of tuber production.

Unlike most vegetables, potatoes perform best in acid soil with pH 4.8 - 5.5. Use scab-resistant varieties with pH above 6.0. Because most other garden vegetables perform best at near-neutral pH, it's usually not feasible to
Diseases: Early blight and Late blight - Use certified seed. Avoid wetting plant foliage if possible. Water early in the day so above ground plant parts will dry as quickly as possible. Avoid crowding plants. Space apart to allow air circulation. Eliminate weeds around plants and garden area to improve air circulation. In autumn, rake and dispose of all fallen or diseased leaves and tubers. Locate new plants in a part of the garden different from previous year's location. Resistant or moderately resistant varieties include Allegany, Elba, Rosa and Sebago. The fungus that causes late blight has recently become a major threat to home gardens and commercial growers because of the migration of new strains (genotypes) into the United States. The disease can readily spread from home gardens to commercial fields. Verification of a late blight diagnosis and implementation of prompt control measures are highly recommended. The newly arrived strains are more aggressive than previous strains. Cultural control measures such as those listed above may not adequately control these new strains.

Scab - Use certified seed. Locate new plants in a part of the garden different from previous year's location. If that is not possible, remove infested soil and replace with fresh soil. Lower soil pH to 5.2 with sulfur. Plant resistant varieties: Chieftain, Norland, Russet Burbank, Russet Rural and Superior.

Viral diseases - Use certified seed. Control aphids.

Varieties: When choosing varieties, consider:

Season: Spread out your harvest by choosing early (ready to harvest in about 65 days), mid-season (80 days) and late (more than 90 days) varieties.

Skin and flesh colors: Range from purple, red, pink, gold and yellow, in addition to the usual white. Potato varieties have a range of subtle flavors, too.

Size: From huge baking potatoes to tiny fingerlings that bake or microwave quickly.

Also look for scab-resistant varieties if soil pH is greater than 6.0.

Some varieties recommended for New York include:

Early:
- Andover
- Superior - scab resistant
- Norland - red, scab resistant
- Carole

Mid Season:
- Chieftain - red, high yielding, large
- Reba
- Russet Bake-King - russet, good baker
- Yellow Finn - yellow flesh
- Purple #5 - purple flesh

Late Season:
- Elba
- Genesee
- Katahdin - good yields

Pumpkins

Vegetable (Warm Season) - Cucubit
- Cucurbita maxima, C. pepo, C. moschata, C. argyrosperma

Cucurbitaceae Family

With fertile soil and a long enough growing season, it's easy to grow your own Jack-o-lanterns -- if you have enough space. Choose varieties bred for flavor if you want to make pies.

Sunlight: full sun

Soil conditions: requires well-drained soil; requires high fertility - Prefers well-drained, fertile, loose soil, high in organic matter with pH between 5.8 and 6.8. Plentiful and consistent moisture is needed from the time plants emerge until fruits begin to fill out.

Lifecycle: annual; Tender annual

Ease-of-care: easy - If you have plenty of space, good soil and a long enough growing season, pumpkins are easy to grow.

Height: 1.5 to 3 feet
Scab - Avoid wetting foliage if possible. Water early in the day so aboveground plant parts will dry as quickly as possible. Avoid crowding plants. Space apart to allow air circulation.

Other diseases: Viral diseases; Downy mildew

**Varieties:** Whether they are *Cucurbita pepo* (the same species as summer squash) *C. moschata*, *C. argyrosperma* or *C. maxima*, most pumpkin varieties produce sprawling vines. If space is tight, there are a few bush or semi-bush varieties that take less space.

If you plan to make pies rather than Jack-o-lanterns, look for varieties bred for flavor (most are *C. moschata*). Ornamental types (most are *C. pepo*) range from tennis-ball-sized novelties (great for kids to decorate with paint) to behemoths weighing hundreds of pounds (most are of these giants are *C. maxima*). Lumina is a white pumpkin that is also great for painting.

Some varieties, such as Baby Bear, have very thin seed hulls, making them a great choice if you plan to toast the seeds for snacks.

Some larger varieties require long growing seasons and may not mature in cooler areas of New York.

Some varieties recommended for New York include (Big- A) (Small- B):

- Autumn Gold - A, hybrid
- Small Sugar - B
- Baby Pam - B
- Jackpot - hybrid
- Spookie
- Howden - A
- Baby Bear
- Rocket - A, hybrid
- Tom Fox - A
- Spooktacular - hybrid
- Goldrush - A, hybrid
- Merlin - A, hybrid, Powdery mildew resistant
- Lil’ Ironsides - B, hybrid
- Lumina - white, B, hybrid
- Magic Lantern - hybrid, Powdery mildew resistant
- Wizard - hybrid
- Howdy Doody - hybrid

**Mini:**

- Munchkin
- Baby Boo
- Jack-be-little

**Giant:**

- Big Max
- Atlantic Giant
- Prizewinner

**Radishes**

*Vegetable (Cool Season) - Cabbage Family*

Also known as spring radishes, summer radishes, winter radishes, Oriental radishes, Daikon, Japanese radishes, Chinese radishes

*Raphanus sativus*

Brassicaceae Family

Easy to grow and ready to harvest in just 3 to 6 weeks. Make plantings of cool-season spring radishes every week or two for a continuous harvest until hot weather hits. Don’t forget winter varieties that produce large, fall-harvested roots.

**Sunlight:** full sun; part shade

Yields best in full sun.

**Soil conditions:** requires well-drained soil; Prefers well-drained, loose soil, high in organic matter, free from stones, with pH 5.8 to 6.8. Needs plentiful, consistent moisture.

**Lifecycle:** annual; A few winter radish varieties are biennials.

**Ease-of-care:** easy

**Height:** 0.5 to 1.5 feet

**Spread:** 0.5 to 0.75 feet

**Foliation color:** medium green
This tart, easy-to-grow perennial is great for pies and jams, especially when coupled with strawberries. It comes to life when temperatures rise into the 40s F, making it one of the earliest spring crops.

**Sunlight:** full sun; part shade  
Yields best in full sun.

**Soil conditions:** requires well-drained soil; Well-drained, deep, fertile soil, high in organic matter, pH 5.5 to 6.5. Yields best with plentiful, consistent moisture.

**Lifecycle:** perennial

**Ease-of-care:** easy

**Height:** 2 to 3 feet; Flower stalks may reach 5 feet tall.

**Spread:** 3 to 4 feet

**Bloom time:** early summer; Remove flower stalks to increase production.

**Flower color:** white

**Foliage color:** medium green

**Foliage texture:** coarse

**Shape:** cushion, mound or clump

**Shape in flower:** flower stalks with upright spikes

**Tolerates:** frost - Hard freezes in late spring can damage leaf stems.

**Special characteristics:** not native to North America; Needs extended temperatures below 40 F.

**Special uses:** edible landscaping

**How to plant:** Propagate by division or separation - All cultivars are hybrids and do not breed true from seed.

**Maintenance and care:** Carefully consider location before planting this long-lived perennial. If possible, establish planting area and improve soil the season before planting. Plant dormant crowns, as soon as you can work the soil in spring. You can cut crowns into pieces, but make sure each has at least one strong bud. Plant 1 to 3 inches deep and 2 to 3 feet apart. Mulch to suppress weeds and retain moisture. Plants require little or no fertilizer. Remove flower stalks as they appear the first year to give strength to developing plant. Do not harvest any leaf stems until plants are well-established the second year. Removing flower stalks helps plants channel energy into leaf stem production. Growth slows and flower stalks form when temperatures warm in summer. Growth may continue if you have adequate moisture and remove flower stalks. Horseradish makes a good companion crop, as both are long-lived perennials. Renovate beds when plants become crowded and leaf stems small (usually in 5 to 15 years) by dividing crowns and replanting in fall or spring.

**Pests:** Rhubarb is relatively trouble-free. Some potential pests include: Rhubarb curculio - Handpick adults. Remove broadleaved weeds from area.  
Other pests: Potato stem borer; Mites

**Diseases:** Rhubarb is relatively trouble-free. Some potential diseases include: Fungal leaf spot - Avoid wetting foliage if possible. Water early in the day so aboveground plant parts will dry as quickly as possible. Avoid crowding plants. Space apart to allow air circulation. Eliminate weeds around plants and garden area to improve air circulation. Practice plant sanitation. When plants are not wet, carefully remove and destroy or discard affected plant parts. In autumn, rake and dispose of all fallen or diseased leaves and stalks.  
Other diseases: Phytophthora crown rot - Can be a problem in poorly drained soils.

**Varieties:** Look for different stem colors -- pink, red or green.  
Ornamental varieties are different *Rheum* species.  
Some varieties recommended for New York include:  
Canada Red  
MacDonald Crimson  
Ruby  
Valentine  
Victoria
This easy-to-grow, nutritious, cool-season crop is among the first greens ready to harvest. But plant it early because it’s quick to turn bitter and go to seed (bolt) as the weather warms and the days lengthen. Dark green color and handsome texture of savoyed varieties are great for edible landscaping.

**Sunlight:** full sun; part shade  
**Soil conditions:** requires well-drained soil; Well-drained, fertile soil, high in organic matter. Plentiful, consistent moisture. Tolerates slightly alkaline soils but is sensitive to acid soils. pH should be at least 6.0, but preferably in the 6.5 to 7.5 range.  
**Special locations:** outdoor containers  
**Lifecycle:** annual  
**Ease-of-care:** moderately difficult; Must be planted early and grown when temperatures are cool. Needs consistent moisture. Will go to see (bolt) if too dry, or when days lengthen and temperatures warm.  
**Height:** 0.5 to 1 feet  
**Spread:** 0.5 to 1 feet  
**Foliage color:** dark green  
**Foliage texture:** medium; Varieties with savoyed (curly) leaves add interest for edible landscaping.  
**Shape:** cushion, mound or clump  
**Tolerates:** frost - Young plants can withstand temperatures as low as 15 F to 20 F.  
**Special characteristics:** not native to North America - Not known in wild. Thought to be first cultivated in Afghanistan and Tajikistan.  
**Special uses:** edible landscaping  
**How to plant:** Propagate by seed  
**Germination temperature:** 40 F to 75 F - May fail to germinate in warm soils.  
**Days to emergence:** 6 to 10 - About 3 weeks at 50 F. About 5 days at 77 F, but germination drops to about 30 percent. - Seed can be saved 2 years.  
**Maintenance and care:** As soon as you can work the soil in spring, sow seed ½ inch deep, 1 inch apart in rows 12 to 18 inches apart (or broadcast seed across a wider area). Thin to 2- to 6-inch spacings. Closer spacings can stress plants and cause them to go to seed (bolt) sooner.  
Early planting is critical as dry soil, heat and lengthening days also encourage bolting. Later plantings benefit from some light shade from other crops. Follow early plantings with warm-season crops such as tomatoes or beans.

Make succession plantings every week or two until average last frost date. Use bolt-resistant varieties for later plantings. Sow again in mid- to late summer for fall harvest. Seeds do not germinate well in warm soil, so increase seeding rate to compensate. Or pre-germinate seeds by placing them between sheets of moist paper towel in a plastic bag and refrigerating until they sprout.  
Spinach seedlings are difficult to transplant. For spring crops, start inside only if your garden stays too wet in spring to allow direct seeding. Start transplants inside about 3 to 6 weeks before last frost.  
Spinach is shallow-rooted and requires consistent moisture to prevent bolting. Water to keep soil moist. Mulch after plants are well established to maintain moisture and suppress weeks. Use floating row covers to prevent insect damage.  
Do not overfertilize with nitrogen. Only apply supplemental fertilizer if leaves are pale green. Add lime to make sure pH is at least 6.0. You should suspect that your soil is too acid if germination is poor and leaf tips and margins are yellow or brown.  
Plant in fall and mulch heavily for early spring crop.  
**Pests:** Leaf miners - Cover plants with fine netting or cheesecloth or floating row cover to protect plants from adult flies. Handpick and destroy infested (mined) leaves. Control weeds.  
**Varieties:** Choose slow-bolting varieties for later spring plantings. Disease resistance is more important for fall crops. Savoyed (curly) leaves are handsome and keep better, but are harder to clean.  
New Zealand and Malabar spinach are warm-season greens similar to spinach, but different species. (New Zealand spinach is covered separately in this growing guide. Malabar spinach is not.)  
Some varieties recommended for New York include:
Sunlight: full sun

Soil conditions: requires well-drained soil; requires high fertility - Prefers well-drained, fertile, loose soil, high in organic matter with pH between 5.8 and 6.8. Plentiful and consistent moisture is needed from the time plants emerge until fruits begin to fill out.

Special locations: outdoor containers - Requires large container and frequent watering.

Lifecycle: annual; Tender annual

Ease-of-care: easy

Height: 1 to 3 feet; Most summer squash grow on compact vines, in contrast to the sprawling vines of most winter squash and pumpkins.

Spread: 2 to 4 feet

Bloom time: mid-summer; late summer; early fall

Flower color: yellow

Foliage color: medium green; Some varieties have interesting "water marks" on their foliage.

Foliage texture: coarse

Shape: cushion, mound or clump; climbing / vine - Most summer squash varieties form a compact, bushy vine.

Shape in flower: same as above

Special characteristics: native to North America

Special uses: edible flowers - Flowers are sometimes battered and fried or stuffed. - edible landscaping

How to plant: Propagate by seed

Germination temperature: 60°F to 105°F - Will not germinate in cold soil. Wait to plant until soil reaches at least 65°F -- preferably 70°F or more. Germinates best at 95°F.

Days to emergence: 5 to 10 - Should germinate in less than a week with soil temperature of 70°F and adequate moisture. - Seed can be saved 6 years.

Maintenance and care: Squash like warm soil and are very sensitive to frost. So don’t be in a rush to plant early in spring. Wait until danger of frost has passed and soil has warmed to about 70°F, or about 2 weeks after the last frost date.

Start inside in 2- to 3-inch pots or cells 3 to 4 weeks before transplanting outside. Sow 3 or 4 seeds per pot and thin to one or two plants by snipping off the weaker plants to avoid damaging the roots of those that remain. Harden off by cutting back on water and reducing temperature before transplanting. Plant transplants out in the garden about 1 to 2 feet apart after all danger of frost has passed.

To hasten first harvest by as much as 2 weeks, use black plastic mulch to warm soil before direct seeding or transplanting. Early fruits are sometimes wrinkled, turn black or rot due to poor pollination. At the end of the season, remove or till in vines to reduce mildew. Use row covers to protect plants early in the season and to prevent insect problems. Remove cover before flowering to allow pollination by insects or when hot weather arrives.

Mulching plants helps retain moisture and suppress weeds. Mounding soil around the base of the plants can discourage squash borers from laying eggs.


Squash vine borer - Remove by hand and destroy.

Striped cucumber beetles - Construct tents of fine netting or cheesecloth or use floating row covers over young plants. Put in place at planting and remove at flowering. Control of beetles may be a factor in preventing bacteria wilt

Diseases: Bacterial wilt (Erwinia tracheiphila) -

Remove and destroy infested plants. If striped or spotted cucumber beetles appear control as soon as possible. Powdery mildew - Avoid wetting foliage if possible. Water early in the day so that aboveground parts will dry as quickly as possible. Avoid crowding plants and eliminate weeds around plants and garden area to improve air circulation.

Scab - Avoid wetting foliage if possible. Water early in the day so that aboveground parts will dry as quickly as possible. Avoid crowding plants and eliminate weeds around plants and garden area to improve air circulation. Viral disease - Remove and destroy entire infested plant along with immediately surrounding soil and soil clinging to roots. Eliminate wild cucumber and milkweed nearby. Plant variety Multipik to mask symptoms on
How to plant: Propagate by seed

Germination temperature: 60 F to 105 F - Will not germinate in cold soil. Wait to plant until soil reaches at least 65 F -- preferably 70 F or more. Germinates best at 95 F.

Days to emergence: 5 to 10 - Should germinate in less than a week with soil temperature of 70 F and adequate moisture. - Seed can be saved 6 years.

Maintenance and care: Squash like warm soil and are very sensitive to frost. So don’t be in a rush to plant early in spring. Wait until danger of frost has passed and soil has warmed to about 70 F, or about 2 weeks after the last frost date.

Start plants inside in 2- to 3-inch pots or cells 3 to 4 weeks before transplanting outside. Sow 3 or 4 seeds per pot and thin to one or two plants by snipping off the weaker plants to avoid damaging the roots of those that remain. Harden off by cutting back on water and reducing temperature before transplanting. Plant transplants out in the garden at the same final spacings above after all danger of frost has passed.

Black plastic mulch can speed growth, especially in cool, short-season areas. At the end of the season, remove or till in vines to reduce mildew. Use row covers to protect plants early in the season and to prevent insect problems. Remove before flowering to allow pollination by insects or when hot weather arrives.

Mulching plants helps retain moisture and suppress weeds. Mounding soil around the base of the plants can discourage squash borers from laying eggs.

Squash vine borer - Remove by hand. Butternut squash is resistant.
Striped cucumber beetles - Construct tents of fine netting or cheesecloth or use floating row cover over young plants. Put in place at planting and remove before flowering. Control of beetles may be a factor in preventing bacterial wilt.

Diseases: Bacterial wilt (Erwinia tracheiphila) - Remove and destroy infested plants. Control cucumber beetles if they appear.
Powdery mildew - Avoid wetting foliage if possible. Water early in the day so aboveground plant parts will dry as quickly as possible. Avoid crowding plants. Space apart and eliminate weeds around plants and garden area to improve air circulation.
Scab - Avoid wetting foliage if possible. Water early in the day so aboveground parts can dry as quickly as possible. Avoid crowding plants. Space apart and eliminate weeds around plants and garden area to improve air circulation. In autumn, rake and dispose of all diseased leaves and fruit. Do not save your own seed.
Viral disease - Remove and destroy entire infested plant along with immediately surrounding soil and soil clinging to roots. Eliminate wild cucumber and milkweed nearby. Control aphids early in the season.
Other diseases: Downy mildew

Varieties: Whether they are Cucurbita pepo (the same species as summer squash) C. moschata, or C. maxima, most varieties of winter squash produce sprawling vines. If space is tight, grow bush or semi-bush varieties.
Winter squash come in a staggering array of sizes, shapes and colors. If your season is short, avoid varieties that require a long growing season (100 or more days).
'Cornell's Bush Delicata' is a 2002 All-America selection that combines the flavor or an heirloom Delicata with good resistance to powdery mildew and compact growth habit.

Some varieties recommended for New York include:

- Ponca (small fruit)
- Puritan
- Table Ace (bush) - hybrid
- Ebony
- Table Queen
- Carnival (multicolored, semi bush) - hybrid
- Butternut Type:
  - Waltham
  - Harris Butternut (semi-bush) - hybrid
- Acorn Type:
  - Table King
  - Tuffy
  - Buttercup/Kabocha Type:
  - Sweet Mama - hybrid
  - Autumn Cup
- Hubbard Type:
  - Zenith - hybrid
  - Burgess Buttercup
  - Honey Delight
  - Ambercup
  - Sweet Meat
Starting your own plants from seed gives you more choices of which variety to grow. But if you start your own plants, be sure you have a place where they can get enough light. Even a sunny, south-facing window is barely adequate. Consider using a grow light to supplement sunlight.

Don’t start plants too early. Sow seeds indoors 6 to 8 weeks before transplanting outside. Plant them 1/8 inch deep in sterile seed starting mix in flats or cells. Seeds germinate best at 75 F to 90 F. Then grow transplants at about 70 F.

Don’t rush to transplant, either. Cold soil and air temperatures can stress plants. Wait at least a week or two after the last frost. Nighttime temperatures should be consistently above 45 F. Use black plastic mulch to warm soil and/or row covers, hot caps or other protection to keep plants warm early in the season. Remove covers whenever temperatures exceed 85 F.

Harden off plants before transplanting by reducing water and fertilizer, not by exposing to cold temperatures, which can stress them and stunt growth. Transplants exposed to cold temperatures (60 F to 65 F day and 50 F to 60 F night) are more prone to catfacing.

Space transplants:
12 to 24 inches apart for determinate varieties
14 to 20 inches apart for staked indeterminate varieties
24 to 36 inches apart for unstaked indeterminate varieties

Unlike most plants, tomatoes do better if planted deeper than they were grown in containers. Set them in the ground so that the soil level is just below the lowest leaves. Roots will form along the buried stem, establishing a stronger root system.

To reduce root disease risk, don’t plant on soils that have recently grown tomatoes, potatoes, peppers or eggplant for at least two years.

Mulch plants after the soil has warmed up to maintain soil moisture and suppress weeds. Tomatoes need a consistent supply of moisture. If it rains less than 1 inch per week, water to make up the difference.

Many factors (in addition to your choice of variety) affect total yield, first harvest and fruit quality. Raised beds, black plastic mulch and providing consistent moisture by watering or through drip irrigation are good ways to improve all three.

How you provide support to plants can also affect performance. Determinate varieties do not need staking. But staking and pruning indeterminate varieties can hasten first harvest by a week or more, improve fruit quality, keep fruit cleaner, and make harvest easier. Staking and pruning usually reduces total yield, but fruits will tend to be larger. Staked and pruned plants are also more susceptible to blossom end rot and sunscald. Allowing indeterminate varieties to sprawl reduces labor, but takes up more space and plants are more prone to disease.

Wooden tomato stakes are typically about 6 feet long and 1 ½ inch square, but you can use similar materials.

Drive stakes at least 8 to 10 inches deep at or soon after transplanting so as not to damage roots.

Prune tomatoes to one or two vigorous stems by snapping off “suckers” (stems growing from where leaf stems meet the main stem) when they are 2 to 4 inches long. Tie stems to stake with soft string, twine or cloth, forming a figure-8 with the stem in one loop and the stake in the other. This gives the stem room to expand without being constricted. Start about 8 to 12 inches above the ground and continue to tie at similar intervals as the plant grows. As an alternative to using individual stakes, grow several plants in a row between heavy-duty stakes or posts spaced about 4 feet apart, and use twine to weave in and out around posts and plants.

Growing tomatoes in cages is a good compromise between labor-intensive staking and just letting them sprawl. You can purchase tomato cages at your local garden center, or simply bend a 6-foot-long piece of 4- to 6-inch wire mesh into a cylinder about 22 inches in diameter. (Cattle fencing or concrete reinforcing wire mesh work well for this.) Place cage around plants soon after transplanting and anchor with stakes.

Avoid excessive N applications, which can cause excessive foliage and poor fruit set. Also avoid using fresh manure or high nitrogen fertilizers (those with three or more times nitrogen than phosphorus or potassium). Poor fruit set can also be caused by heavy rainfall or temperatures that are either too high (above 90 F) or too low (below 55 F).

On most soils, you can sidedress about 1/2 cup of 5-10-5 per plant and work shallowly into the top inch of soil when fruits are about 1 inch in diameter and again when harvest begins.

To avoid other common tomato problems:
Disease tolerance: Tomatoes were originally desert plants. So they don't naturally have strong resistance to plant diseases that thrive under our generally humid conditions. Fortunately, many hybrids have been bred specifically for disease resistance, and some open-pollinated varieties tolerate certain diseases. Some varieties recommended for New York include:

Cherry: Sungold - hybrid
Grape: Jubilee - hybrid

Early Cherry
Supersweet 100 - hybrid

Extra Early:
Currant
Cosmonaut Volkove

Early:
Cascade - hybrid, verticillium tolerant, fusarium tolerant
Sunrise - hybrid, verticillium tolerant, fusarium tolerant, tobacco mosaic virus tolerant

Springset - hybrid, verticillium tolerant, fusarium tolerant
Early Girl
Lemon Boy
Moscovich - heirloom

Gold Dust - hybrid, verticillium tolerant
Taxi - hybrid

Main Season:
Ultra Sweet - hybrid, verticillium tolerant, fusarium tolerant, root knot nematode tolerant
Basket Vee - verticillium tolerant
Better Boy - hybrid, verticillium tolerant, fusarium tolerant
Big Beef - hybrid, verticillium tolerant, root knot nematode tolerant, tobacco mosaic virus tolerant
Harvest Vee - verticillium tolerant, fusarium tolerant
Celebrity - hybrid, verticillium tolerant, fusarium tolerant, root knot nematode tolerant
Jet Star - hybrid, verticillium tolerant, fusarium tolerant, root knot nematode tolerant

Paste:
Nova
Roma - verticillium tolerant, fusarium tolerant
Viva Italia
La Rossa - hybrid
SanRemo
Del Oro - round fruited, hybrid
Classica - hybrid

Plum Dandy - hybrid
La Roma - hybrid

Turnips

Vegetable (Cool Season) - Cabbage Family
Also known as summer turnips

Brassica rapa var. rapa
Brassicaceae Family

Fast-growing spring turnip crops are best harvested while the weather is still cool. The flavor of fall crops is improved by light frost. Don’t forget the greens which are delightful raw or cooked.

Sunlight: full sun; part shade

Soil conditions: requires well-drained soil; Prefers well-drained, fertile soil high in organic matter, pH 6.0 to 7.5. Can tolerate slightly alkaline soil. Needs plentiful, consistent moisture. Loosen soil deeply or grow in raised beds to encourage good root development. Will tolerate less-than-ideal conditions, but poor soil will slow growth and hurt quality and flavor.

Lifecycle: annual; Biennial grown as an annual.
Spread: 3 to 20 feet
Foliage color: medium green
Foliage texture: coarse
Shape: low and trailing; climbing / vining
Special characteristics: not native to North America
How to plant: Propagate by seed
Germination temperature: 60 F to 95 F
Days to emergence: 3 to 5 - In very warm (90 F) soil. About 10 days at 70 F. - Seed can be saved 4 years.
Maintenance and care: To ensure ripening, choose fast-maturing, small-fruited cultivars, start plants inside, and use black or IRT plastic mulch and fabric row covers to warm soil and protect plants.
Sow seeds indoors ¼ inch deep in peat pots (2-inch square or bigger), 2 to 4 weeks before setting out. Set outside 2 weeks after average last frost, 3 plants per hill, hills 3 feet apart each way for bush varieties, or 3 feet apart in rows 8 feet apart for vining types. Transplants are delicate. Keep soil intact when transplanting. Mulch plantings after soil has warmed to help maintain consistent moisture and suppress weeds. If using fabric row covers, remove at flowering to allow pollination by bees. Good pollination is critical to fruit set.
Plants require consistent moisture until pollination. Once fruit are about the size of a tennis ball, only water if soil is dry and leaves show signs of wilting.
To prevent insect damage to developing fruits, place watermelons on pots or pieces of wood.
If growing melons on a trellis, support fruit with slings made from netting, fabric, or pantyhose. Trellising improves air circulation around plants and can help reduce foliar disease problems. Choose small-fruited varieties and reduce plant spacing.
Avoid planting cucumber family crops (melons, squash, pumpkins) in the same spot two years in a row.
Pests: Striped or spotted cucumber beetles - Construct tents of fine netting or cheesecloth or use floating row cover over young plants. Put in place at planting and remove at flowering. Control beetles to prevent bacterial wilt.
Aphids - A hard stream of water can be used to remove aphids from plants. Wash off with water occasionally as needed early in the day. Check for evidence of natural enemies such as gray-brown or bloated parasitized aphids and the presence of alligator-like larvae of lady beetles and lacewings.
Squash vine borer - Cut open vines and remove by hand.
Squash bugs - Handpick. Bury or compost plant residues after harvest.
Flea beetles - Use row crop covers to help protect plants from early insect damage. Put in place at planting and remove at flowering. Control weeds.
Diseases: Powdery mildew - Avoid wetting plants if possible. Water early in the day so aboveground plant parts dry as quickly as possible. Avoid crowding plants. Space apart to allow air circulation. Eliminate weeds around plants and garden area to improve air circulation.
Cucumber mosaic virus - Remove and destroy infested plants. Control cucumber beetles and aphids as soon as they appear.
Scab - Avoid wetting foliage if possible. Water early in day so aboveground plant parts dry as quickly as possible. Avoid crowding plants. Space apart for air circulation.
Fusarium wilt - Locate new plants in a part of the garden different from previous year's location. If that is not possible, remove infested soil and replace with fresh soil. Plant tolerant varieties.
Other diseases: Anthracnose; Phytophthora
Varieties: When choosing varieties, match days to harvest with the length of your growing season. (Keep in mind that you will plant well after the last frost date and want to make sure your crop ripens well before first frost in fall.) If you have a long enough season, choose varieties with different maturity dates to spread out your harvest, or stagger planting dates of a single variety.
Bush varieties have more compact vines, some just 3 feet long. Also base your variety choices on disease resistance, fruit size (stick with smaller fruits in short-season areas or if you plan to trellis the vines), flavor, and color.
Seedless varieties may have poor germination and early seedling vigor.
Some varieties recommended for New York include: