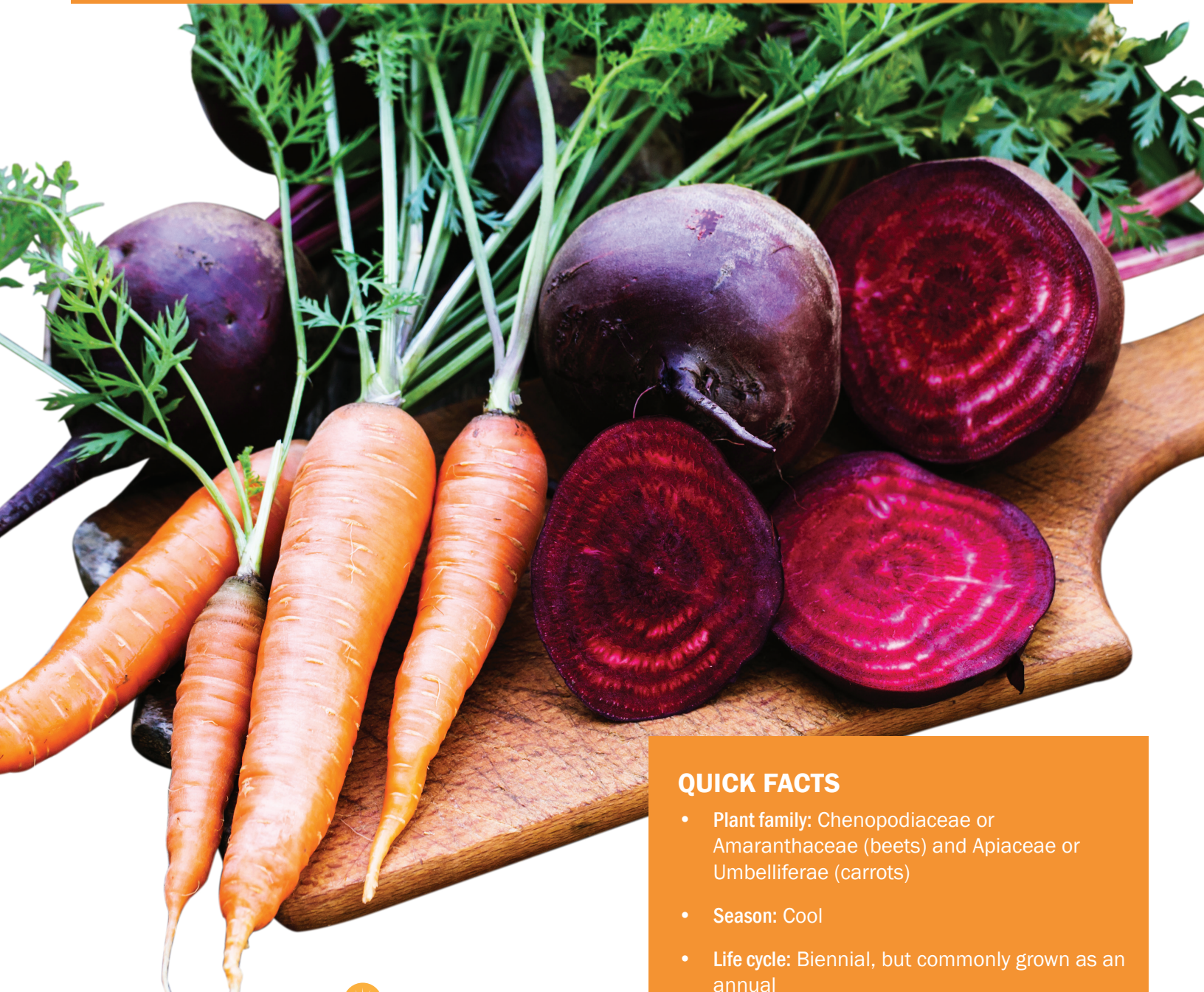


SUSTAINABLE GARDENING

FOR SCHOOL AND HOME GARDENS

Beet & Carrot

Beta vulgaris and *Daucus carota*



QUICK FACTS

- Plant family: Chenopodiaceae or Amaranthaceae (beets) and Apiaceae or Umbelliferae (carrots)
- Season: Cool
- Life cycle: Biennial, but commonly grown as an annual
- Transplant to first harvest: 50-70 days (beets), 70-90 days (carrots)

History

Beets are members of the Chenopodiaceae (or Amaranthaceae) family, also known as the beet or Goosefoot family, which includes other cool-season crops like spinach, Swiss chard, orach and quinoa (see Figure 1).

The beet, or beetroot, is an ancient crop dating back to 2000 B.C. Beets were likely domesticated in the Mediterranean region, taken to Babylonia around the eighth century B.C. and introduced into China in 850 A.D. The Romans ate beets in the third and fourth centuries, as they were believed to promote good health. Records of beet root recipes have been traced to England in the 14th century. Originally, only beet greens were grown, but by the mid-1500s an improved beet root variety was developed, and beets became an important food crop in Germany and France. Beets were brought to the U.S. by early colonists. In the 1800s red, white and yellow beets were widely grown and served as an important survival crop stored and consumed throughout the winter. See Figure 3.



Figure 1. Beets belong to the Chenopodiaceae plant family (or the larger Amaranthaceae family), along with Swiss chard, spinach, quinoa and many more.

Carrots are members of the Apiaceae or Umbelliferae family (also known as the carrot family), which includes many flowering plants and herbs like celery, fennel, parsley and dill (see Figure 2).

The carrot is thought to be a descendant of the wildflower Queen Anne's lace. It was likely native to Afghanistan around 3000 B.C. and had yellow or purple roots. Carrots then spread to the eastern Mediterranean and Spain around the 12th century. It was originally cultivated for medicinal purposes and didn't become an important food crop until the 16th century. The original carrot was yellow or purple, but by the 1500s, the first reports of orange carrots appeared, and carrots had become known throughout Europe. Orange carrot varieties weren't developed until the mid-1700s in the Netherlands. This food crop was brought to the U.S. by early colonists, who shared the plant with Native Americans. It is thought that transportation of carrots to North America is also how Queen Anne's lace, the widespread wildflower, was introduced to the New World. See Figure 3.

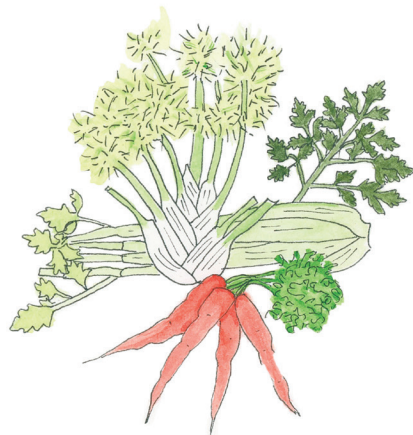


Figure 2. Carrots belong to the Apiaceae or Umbelliferae plant family, along with celery, fennel, parsley and many more.

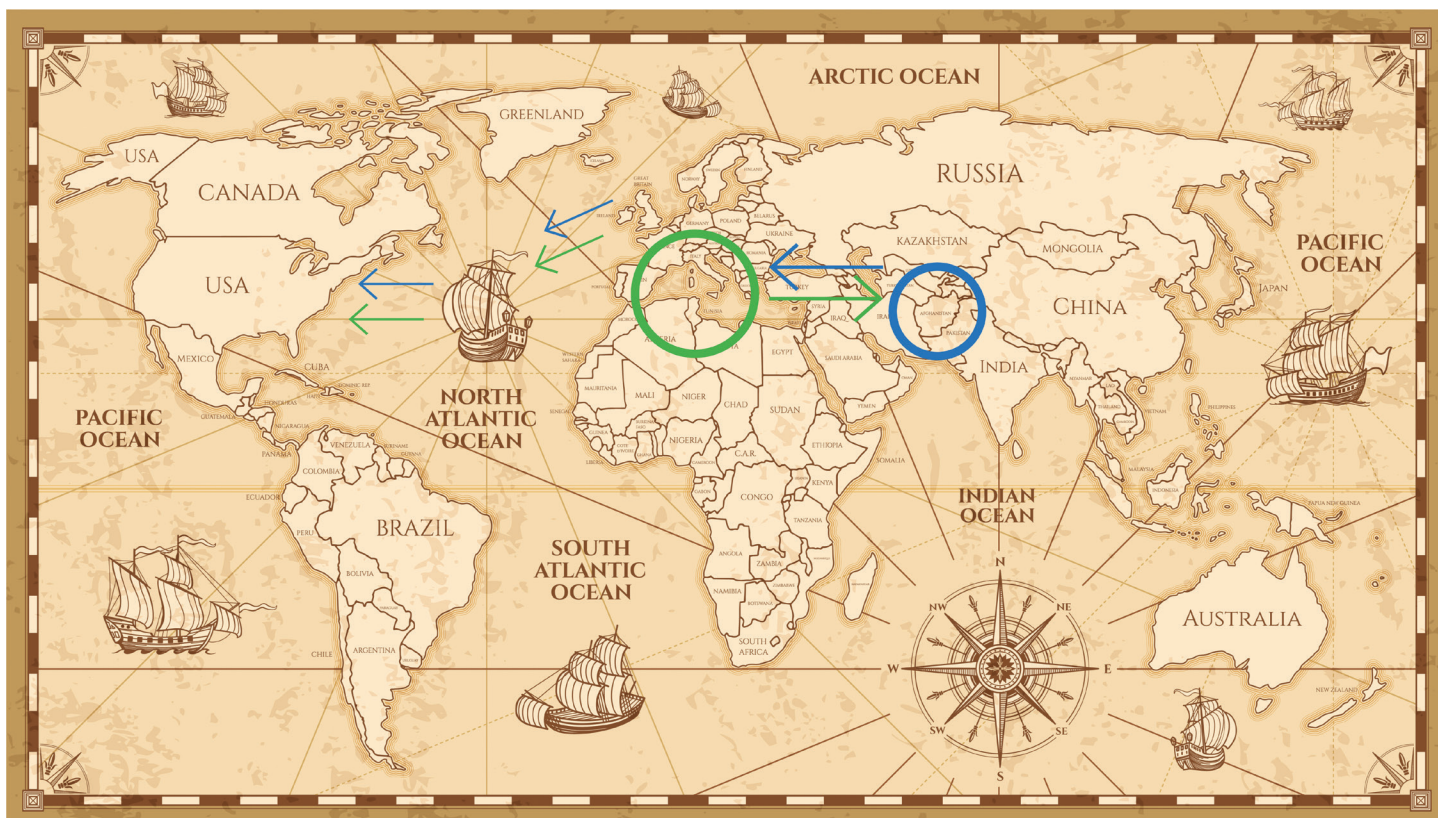


Figure 3. Map showing the origin and migration of beets (green) and carrots (blue) to the U.S.

Beets and carrots are actually both biennials, which means the plant's life cycle from seed to flower takes

two years, but they are most commonly grown as an annual crop, a crop grown in one season or year.

Growing

Varieties

Beets and carrots are cool-season crops considered root vegetables, as they are grown primarily for their large, fleshy roots. They are frost tolerant and mature in cool weather. Both beets and carrots are considered half-hardy, which means they are resistant to frost and light freezes when acclimated. Beet varieties vary in root shape (oblong or cylindrical) and color (white, red, yellow, pink, orange) with edible petioles (stems) of different colors (white, red or yellow) and green leaves. Some varieties are grown as microgreens and for their tops as beet greens. Beets are generally easy to grow, don't require a lot of space and store well.

Carrot varieties are generally grouped by shape and days to harvest into the following types: (1) Chantenay, (2) Danvers, (3) Nantes and (4) imperator (Figure 4). Chantenay carrots are short in length with broad shoulders tapering down to blunt ends. Danvers carrots are medium in length with broad shoulders tapering down to pointed ends. Nantes carrots are medium in length, evenly slender and cylindrical from shoulder to tip and early maturing. Imperator carrots are the late-maturing standard market type that are long in length, slender and tapering down to pointed ends.



Figure 4. The main types of carrots (top to bottom): Chantenay, Danvers, Nantes and imperator.

Beets and carrots have either open-pollinated varieties, which include heirloom varieties, or hybrid varieties. There are many heirloom varieties of beets and carrots recommended for Louisiana. Heirloom beet varieties include Bull's Blood (French), Chioggia (Italian), Cylindra (Danish) and others. Carrot heirloom varieties include the French, Chantenay, Red Core and Scarlet Nantes. These seeds have been saved for at least 50 years, can be saved each season and replanted, and are open-pollinated. Flowers produced by these root crops are

perfect, containing both male and female parts, but are prone to cross-pollination. If saving seed, different varieties must be separated by a distance of one-third to one-half of a mile to avoid cross-pollination. Generally, it is not recommended to save seed for future planting with hybrid varieties as they are usually not expressed properly in the next generation.

See the recommended beet and carrot varieties for Louisiana in Table 1.

Table 1. Recommended Beet and Carrot Varieties for Louisiana

Variety Name	Description	Days to Harvest & Size	Resistance
Beet			
Bull's Blood	Deep burgundy leaves and roots; candy-striped roots when sliced; great for beet greens; flavorful and tender as baby beet; tolerates low light, heat, and cold; French heirloom variety.	58-60 days (35 days for baby leaf)	
Chioggia	Green tops; medium height; scarlet-pink striped roots; very flavorful; early maturing and vigorous; good shelf life; Italian heirloom variety.	52-60 days 3-4" diameter	
Cylindra	Large green tops good for bunching; burgundy cylindrical roots; tender and sweet; Danish heirloom variety.	54-56 days 5-6" long 2" diameter	Cercospora leaf spot, scab.
Detroit Dark Red	Round, dark red roots with strong tops; uniform and flavorful; good shelf life; adaptable heirloom variety.	55-65 days 3" diameter	Downy mildew, late blight.
Early Wonder Tall Top	Large, vigorous green tops with red veins for bunching; slightly flattened dark red roots; great for beet greens; very productive heirloom variety.	45-55 days (35 days baby leaf, 45 full size leaf) 3-4" diameter	Foliar diseases.
Golden or Yellow Detroit	Vibrant orange-yellow roots with green leaves; productive; open-pollinated.	55 days 3" diameter	Cercospora leaf spot, scab.
Green Top	Bright red roots with flavorful greens; productive; open-pollinated.	52 days 3" diameter	
Kestrel	Deep red globe roots; semiglossy, tall tops; sweet and uniform; good shelf life; heat tolerant hybrid.	55 days 3-4" diameter	Cercospora leaf spot, downy mildew, powdery mildew, Rhizoctonia root and crown rot.
Pacemaker III	Medium, smooth red roots; tall, glossy green tops; flavorful; adaptable to hot and humid regions; heat and drought tolerant hybrid.	53 days 3" diameter	Cercospora leaf spot, powdery mildew, Rhizoctonia root and crown rot.
Red Ace	Medium, strong green tops with red veins for bunching; uniform red roots; sweet and tender; reliable, adaptable and early maturing; good shelf life; productive hybrid.	50-60 days 3" diameter	
Red Cloud	Dark red, large roots; very flavorful and sweet; smooth and vigorous; heat tolerant; hybrid.	50-53 days 3" diameter	
Ruby Queen	Dark red, round roots; smooth, tender and sweet; productive and adaptable; open-pollinated.	52-55 days 3" diameter	
Solo	Dark red, uniform and round roots; dark green tall tops; sweet; hybrid.	50-55 days 3-4" diameter	Cercospora leaf spot, powdery mildew, Rhizoctonia root and crown rot.

Variety Name	Description	Days to Harvest & Size	Resistance
Carrot			
Chantenay Red Core	Blocky, broad-shouldered, deep orange roots; adaptable French heirloom Chantenay type variety.	65-70 days 5.5" long 2.5" diameter	
Danvers 126	Bright orange, conical, tapered roots; strong tops; sweet and resists splitting; reliable, adaptable, productive and heat tolerant; Danvers type; open-pollinated.	70-75 days 6-7" long 2" diameter	
Deep Purple	Dark purple, tapered root; tall, strong, healthy tops; sweet and flavorful; Imperator type hybrid.	73 days 7-8" long	
Imperator	Orange-red, coreless roots; sweet, crisp and tender; hybrid.	74 days 7-9" long	
Mokum	Slender orange roots; short tops; very flavorful, sweet, and tender; early maturing; adaptable and tolerant to warm weather; early Nantes type hybrid.	54 days (36 days baby)	
Nantes Fancy	Dark orange roots with blunt ends; smooth and crisp; good shelf life; productive Nantes type hybrid.	68 days 5-8" long	Alternaria leaf spot.
Purple Haze	Dark purple, tapered root with bright orange interior; medium-short tops; very flavorful; Imperator type hybrid.	73 days 7-8" long	
Scarlet Nantes	Bright red-orange, cylindrical roots; small tops for bunching; fine texture and small core; adaptable French heirloom Nantes type variety.	65-70 days 6-8" long 1.5" diameter	
Sugarsnax 54	Dark orange, tapered, slender roots; strong, medium tops; smooth, sweet, and tender; hybrid.	68 days 9-10" long	Alternaria blight
Thumbelina	Miniature, round, orange root; tender, very flavorful and productive; good shelf life; open-pollinated.	60 days 1-2" globe	
Yellowbunch	Bright yellow roots with strong tops; uniform; Imperator type hybrid.	75 days 7.5-8" long	Alternaria blight.

Notes: Table varieties selected from recommendations from LSU AgCenter, UF Extension, Texas A&M Extension, and Southeastern U.S. Vegetable Crop Handbook. Variety descriptions compiled from Southern Exposure Seed Exchange, High Mowing Organic Seeds, Johnny's Selected Seeds, Sow True Seed, All-America Selections, Reimer Seeds, Hoss Tools, and Seedway.

Other recommended varieties for Louisiana include:

Beet: Bohan, Centurion, Chariot, Scarlet Supreme

Carrot: Apache, Choctaw, Enterprise, Maverick, Navajo, Nelson

When and How to Plant

Beets are frost hardy and may be planted four to six weeks before the last frost date. As a cool-season crop, the soil temperature range for germination is 50 to 85 degrees Fahrenheit, but optimally the temperature is 75 to 85 F.

Beet and carrot seeds should not be sown if the soil temperature is over 95 F or below 40 F, as this will reduce germination success. The use of a soil temperature map can help guide planting decisions.

Seedlings may survive a light frost but should be planted after any risk of a heavy freeze.

Beets and carrots are usually direct-seeded outside at a shallow one-eighth inch to one-quarter inch depth in rows (see Figure 5). When direct-seeding outside, it is recommended to scatter seeds (broadcast) in a 2-inch wide furrow or line that is about a quarter-inch deep. Lightly cover with soil or compost and water in. Beds should be firm before planting and soil should be firmed over the seed at planting to create good contact of seed with the soil.

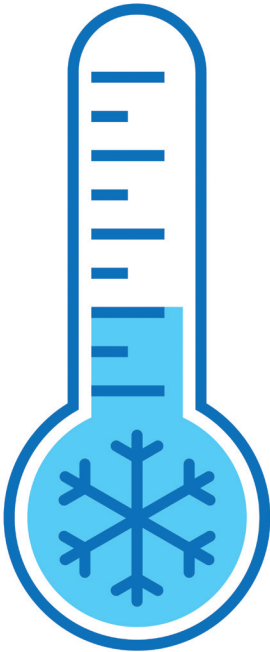


Figure 5. Planting seeds directly into the soil outside (i.e., direct-seeding).

Table 2. Beet and Carrot Planting Guide

Crop	Direct-seed Outside Dates	Plant Spacing (Inches)	Row Spacing (Inches)	Bed Spacing (Inches)	Days to Harvest*
Beet	North LA: Feb.-March; Sept. 15-Nov 15 South LA: Jan. 15-March 15; Aug. 15-Nov. 15	2-4	Double set 10-12" apart	48"	50-70
Carrot	North LA: Jan. 15-March; Aug. 15-Oct. 15 South LA: Jan. 15-March 15; Sept.-Nov. 15	1-3	Double set 10-12" apart	48"	70-90

*Days from seed to harvest
Note: Table adapted from LSU AgCenter and UF Extension Planting Guides, and Southeastern U.S. Vegetable Production Handbook.

The beet “seed” that is sown is actually a fruit (utricle) that contains multiple embryos (polygerm). These may germinate all at once or at different times and require thinning. Monogerm (single embryo) beet varieties are also available and are used primarily for precision sowing. Carrot seed quality is highly variable as seeds are of different physiological maturities, leading to variability in germination and emergence. Carrot seeds are very small, and germination is typically slow. This may lead to nonuniform emergence and poor establishment. Carrot seedlings may not grow well due to soil crusting, adverse temperatures, dry conditions and weed competition.

The optimal growing temperature for best growth and quality is 55-70 F, with a 40 F minimum and 85 F maximum. Beets and carrots can be early spring, late fall or winter crops, and may even survive winter temperatures, as they are frost tolerant and cold hardy to 20 F. Two to three weeks of temperatures consistently below 50 F will cause poor color development and may trigger bolting. Warmer temperatures may result in limited growth and reduced yields, along with coarse-textured roots.

Where to Plant

Beets and carrots should be planted in deep, loose, well-drained, fertilized soil with a soil pH of 6.0 to 6.8. Beets, like other members of this family, are tolerant of salinity but are sensitive to soil acidity. Heavy soils may cause carrot roots to split or fork. It is preferable to select a planting area in full sun (at least six hours per day) and with silt-loam/sandy loam soil high in organic matter. These crops also tolerate partial shade. It is recommended to till the soil 12 to 14 inches deep to allow for root growth and to plant beets and carrots in box beds or traditional raised garden rows that are 12 inches tall to ensure good drainage. The soil should be free of debris, clods and stones in order to ensure uniform emergence and good stand establishment. In all types of gardens, it is recommended to add a layer of compost, peat moss, rotted hay or other organic matter and mix into the soil to optimize plant health.

It is recommended to rotate plant families at least every three to four years. Avoid planting vegetables from the same plant family in the same area of the garden to reduce disease and pests.

Plant Care

Watering: Beets have a shallow root system and must receive a consistent water supply to keep the roots actively growing and so they don’t become “woody.”

Generally, beets should receive at least 1 inch of water per week. Weekly supplemental watering is necessary in dry conditions or sandy soils. Carrots have a relatively high water demand and are not drought tolerant; be sure to keep soil moist and use mulch to aid in moisture retention. Water stress will result in “woody” tissue, reduced sugar content and bitter flavor. Drip irrigation is very helpful to ensure adequate moisture. Generally, carrots should receive one-half inch to three-quarters of an inch of water every four to seven days until carrots develop, then move to weekly watering of 1 to 2 inches of water per week.

Fertilization: Nitrogen is the most limiting nutrient for beet production. Beets also require high levels of micronutrients, in particular boron (B) and zinc (Zn). Boron deficiency can result in several physiological disorders, such as cavity spot and heart rot. Soil testing can help determine fertilizer needs. Carrots have a relatively high uptake of potassium (K), and excessive nitrogen (N) tends to promote foliage growth over root enlargement.

Organic fertilizers, such as compost, fish emulsion, composted poultry litter or manure, worm castings, and blood or bone meal, originate from living organisms. They are safer and far more environmentally sustainable than traditional synthetic fertilizers. They naturally release nutrients more slowly and over a longer period of time. When applying organic fertilizer, it is important to use in unison with compost, cover crops and crop rotation, which all work together to build soil health. Learn how to convert inorganic fertilizer recommendations to organic fertilizers [here](#).

Alternatively, a synthetic fertilizer may be used at a rate of about 1.5 pounds (3 cups) of 13-13-13 for every 25 feet of row or 75 square feet. Broadcast or sprinkle evenly over the soil before planting and then mix in about 3 to 6 inches deep using a rake. Supplemental side-dressing, or reapplication of synthetic fertilizer, is recommended three to four weeks later. Side-dressing is the addition of fertilizer to the soil around already established plants when the plant begins to fruit or vine, primarily to provide nitrogen. If using synthetic fertilizer, sprinkle a small amount lightly down the side of the row, keeping it several inches away from the plant stem, and water into the soil. Because of their slow, steady release of nitrogen, crops fertilized with organic fertilizer do not need to be side-dressed.

Weeds: Plastic mulch is not recommended for beets and carrots as they are planted very close together. Due to their slow growth and inability to compete well

with weeds, it is important to control weeds, especially when plants are young and haven't developed a shade canopy. Weeding should be done by hand or with careful use of hand tools to avoid damaging seedlings. Weed pressure may be lowered with crop rotation.

Insect pests and diseases: Common insect pests include aphids, cutworms, flea beetles, leafhoppers, wireworms and whiteflies. It is recommended to cover plants with a row cover to prevent insect pest pressure. There is a lower risk of disease in these crops, but they

may be susceptible to some foliar and fungal diseases (e.g., leaf spot, blight) and physiological disorders (black spot). Prevention and regular monitoring can help identify symptoms of these diseases and insect pests to allow for early diagnosis and management. Generally recommended tools for disease prevention include avoiding overhead irrigation, adequate plant spacing, crop rotation and weed control. See Table 3 to aid in diagnosis and management of some common beet and carrot insect pests and diseases.

Table 3. Organic and Natural Management for Common Beet and Carrot Insect Pests and Pest Diseases

Symptoms	Diagnosis	Organic and Natural Management
• Curled and yellowed leaves. • Stunted crops. • Sticky honeydew on leaves.	Aphids	• Timely planting and harvest. • Reduce water stress. • Weed control. • Use water jet to dislodge. • Insect barrier fabric. • Beneficial insects: lady bugs, lacewings, predatory stink bugs, syrphid flies. • Insecticidal soap, neem oil, pyrethrin, Azera.
• Carrier of aster yellows disease. • Bronzed, mottled leaves. • Yellowed leaves and stems, stunted and twisted.	Aster leafhoppers	• Plant resistant varieties. • Weed control. • Floating row covers. • Remove and destroy infected plants.
• Disease spread by leafhoppers. • Pale yellow, fine roots branching off the taproot. • Multiple tops, yellowed leaves.	Aster yellows	• Plant resistant varieties. • Weed control. • Prevent leafhoppers. • Remove and destroy infected plants.
• Physiological disorder in beets deficient in boron. • Basic soils high in calcium. • Dry conditions. • Irregular black spots inside roots and on the surface. • Large, dry, black cankers on mature roots. • Dead areas and cavities on roots.	Black spot	• Soil test. • Broadcast boron at planting if deficient.
• Fungal disease. • Wet leaves. • Causes spotty leaf browning or scorch, then leaf death.	Blight	• Plant resistant varieties. • Crop rotation. • Remove plant debris and till under remaining residue. • Avoid overhead irrigation. • Organic/natural fungicide sprays.
• Larvae burrows in roots. • Young plants wilt and die. • Stunted plants. • Carrot roots are forked or disfigured.	Carrot rust flies	• Row covers. • Late planting. • Crop rotation (annual). • Companion planting with onion, garlic or marigold.

Symptoms	Diagnosis	Organic and Natural Management
• Circular lesions with a red-brown border on leaves. • Late season; warm, humid conditions.	Cercospora leaf spot	• Plant resistant varieties. • Avoid overhead irrigation. • Avoid working in fields when plants are wet • Reduce plant stress. • Copper-based fungicide sprays.
• Seedlings cut off at soil line. • Feeding damage on leaves. • Feed on roots, leaving cavities.	Cutworms	• Weed control. • Till soil to prevent overwintering. • Floating row covers. • Place crushed eggshells, oyster shells, sand or diatomaceous earth around plant stems. • Handpick and discard larvae. • Organic pesticides.
• Small irregular holes in leaves. • Concentrated damage in young plants and seedlings. • Stunted plants, reduced yield.	Flea beetle	• Timely planting. • Perimeter trap cropping. • Super Light Insect Barrier or AgroFabric Pro to protect seedlings. • Crop rotation. • Reflective mulches. • Beneficial organisms: parasitic nematodes. • Insecticidal oil, spinosad, pyrethrin, Azera.
• Small yellow larvae. • Tunnels inside leaves with white trails.	Leaf miners	• Row covers. • Beneficial insects: parasitic wasps. • Remove infected leaves.
• Uneven distribution of stunted plants. • Pale green/yellow leaves; wilt. • Root galls, knots, swellings.	Root-knot nematodes	• Plant resistant varieties. • Crop rotation with nonhost crops (corn). • Soil solarization; nematicides.
• Feed on roots. • Wet soils, moderate temperature.	Wireworms	• Crop rotation with nonhost crops (onion, lettuce, sunflowers); avoid rotations with grasses. • Control weeds. • Floating row covers.

Note: Table adapted from Texas A&M AgriLife Extension, UMass Extension Vegetable Program, Alabama A&M and Auburn Universities Extension, and University of Maryland Extension. The Louisiana Pesticide Law regulates the use of pesticides in schools to protect children and staff from harmful exposure to chemicals and is enforced by LDAF. The recommended alternative to routine pesticide use is Integrated Pest Management (IPM), which combines pest control, disease management techniques and organic/natural alternatives, many of which are found in this table.

Harvest and Storage

Beets and carrots are harvested when roots reach the expected or desired size. Beet roots are ready for harvest when they reach about 2 inches in diameter, although they will grow larger. Root size for both is primarily determined by plant spacing, not maturity date, and roots will not grow larger if plants are very closely spaced. For carrots, around the expected maturity date look for carrot shoulders visible at the soil level that are at least 1 inch in diameter. Harvest one carrot to determine if the others are ready to harvest. Younger carrots are more tender and milder in flavor, while older carrots become tough and have a stronger flavor. Generally, beets and carrots are harvested by hand. Grab the beet or carrot tops close to the soil line and gradually pull up. For compacted soil and/or older carrots, a garden fork may be used about 6 inches away from the carrots to loosen up the soil and roots for an easier harvest. Beets and carrots harvested with their tops intact may be bunched by the tops. For

longer storage, clip off the tops. A common method of preparing carrot tops is making carrot top pesto, and beet greens may be used like leafy greens.

At an ideal storage temperature of 32 F with high humidity (98% to 100%), these crops will store well throughout the fall and winter or for four to six months.

Beets can be frozen after cooking and cooling, pickled and canned, or dried or dehydrated for long-term storage. Beet juice contains betanin, a red pigment that may be used as a natural food colorant in sauce, jams and jellies, desserts, ice cream and sweets. Carrot juice is a good source of beta carotene and is commonly mixed with other vegetable and fruit juices to provide nutrients, color or flavor. Carrots may also be juiced, frozen, canned, pickled, dried or fermented for long-term storage. Both crops may also be peeled, shredded raw and then eaten in a salad.

Nutrition

Beets and Carrots Are Nutritious and Good for You

Very high in vitamin A

Important for eye health, a strong immune system and cell growth.

Rich in vitamins C, B1 and B2

Important for bones, skin and blood vessels; essential for metabolism and nerve, muscle and heart health.

Good source of dietary fiber

Important for bowel health, lowering cholesterol, controlling blood sugar and maintaining a healthy weight.

Provides calcium

Important for bone health.

Recipes

Basics of cooking with beets and carrots:

Beets: extension.purdue.edu/foodlink/food.php?food=beet

Carrots: extension.purdue.edu/foodlink/food.php?food=carrot

General information on selecting, pairing, preparing and storing. Also includes a list of recipes.

Video on how to prepare carrots: youtu.be/YMebFlauhXY

Ever wondered about the basics of how to prepare carrots? Chef Allison Kingery shows a couple of options for preparing this vegetable.

Taste Test Ideas



Roasted Beets and Carrots



Carrot Soup



Beet Hummus

Other websites with many beet and carrot recipes:

Oregon State University's Food Hero

Beets: foodhero.org/recipes/categories/1299

Recipes include beet and carrot salad, beet dip, sautéed beet greens and more.

Carrots: foodhero.org/recipes/categories/1293

Recipes include barley lentil soup, carrot ginger salad, sweet carrot bread and more.

USDA MyPlate Kitchen

Visit www.myplate.gov/myplate-kitchen/recipes and search for beet and carrot recipes.

Recipes include roasted root vegetables, beet and white bean salad, carrot cookies and more.

California's Eat Fresh

Visit eatfresh.org/find-a-recipe and search for beet and carrot recipes.

Recipes include vegetable brunch pie, red beet and apple salad, carrot soup and more.

Produce for Better Health Foundation

Beets: fruitsandveggies.org/fruits-and-veggies/beets/?view=recipes

Recipes include beet hummus, rainbow chips, refresh yourself juice and more.

Carrots: fruitsandveggies.org/fruits-and-veggies/carrots/?view=recipes

Recipes include shrimp cauliflower fried rice, slow-cooker vegetable chowder and more.

Sources

- Southeastern Vegetable Extension Workers, (2020). Southeastern U.S. Vegetable Crop Handbook.
- Boudreaux, James E. (2009). Louisiana Commercial Vegetable Production Recommendations. Pub. 2433. LSU AgCenter.
- Koske, Thomas J. & Cannon, James. (Rev. 2020). Louisiana Vegetable Planting Guide. Pub. 1980. LSU AgCenter.
- Brown, Sydney Park, Treadwell, Danielle, Stephens, J.M. & Webb, Susan. (2021). Florida Vegetable Gardening Guide. #SP 103. University of Florida Extension.
- Vegetable Production Handbook of Florida. (2025). Publication #VPH. University of Florida Extension.
- Travis County Master Gardener Vegetable Specialists. (2023). Vegetable Varieties for Central Texas. Texas A&M AgriLife Extension.
- Masabni, Joseph. (2014). Easy Gardening: Beets. HORT-PU-070. Texas A&M AgriLife Extension.
- Masabni, Joseph. (2010). Easy Gardening: Carrots. HORT-PU-047. Texas A&M AgriLife Extension.
- Joe Masabni. Commercial Crop Guide: Beet. Texas A&M AgriLife Extension.
- Joe Masabni. Commercial Crop Guide: Carrot. Texas A&M AgriLife Extension.
- Boswell, Victor R., August, 1949. Our Vegetable Travelers: First Beets Yielded Only Greens. National Geographic Magazine. Volume 96(2).
- Foodlink: Carrots. (2020). Purdue Extension.
- Foodlink: Beets. (2020). Purdue Extension.
- Swiader, John M. & Ware, George W. (2002). Producing Vegetable Crops (5th edition). Interstate Publishers Inc.
- Maynard, Donald N. & Hochmuth, George J. (2007). Knott's Handbook for Vegetable Growers (5th edition). John Wiley & Sons Inc.
- Decoteau, Dennis R (2000). Vegetable Crops. Prentice-Hall Inc.
- Sukprakarn, S., Juntakool, S., Huang, R., and Kalb, T. (2005). Saving your own vegetable seeds—a guide for farmers. AVRDC publication number 05-647. AVRDC—The World Vegetable Center, Shanhua, Taiwan. 25 pp.
- Disease, Insect, and Mites Fact Sheets. (2013). UMass Extension Vegetable Program.
- Seed Savers Exchange, Seed Saving: A Guide to Isolation Distances.
- McLaurin, Wayne & Reeves, Walter. (2014). How to Convert an Inorganic Fertilizer Recommendation to an Organic One. Circular 853. University of Georgia Extension.

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