SUSTAINABLE GARDENING

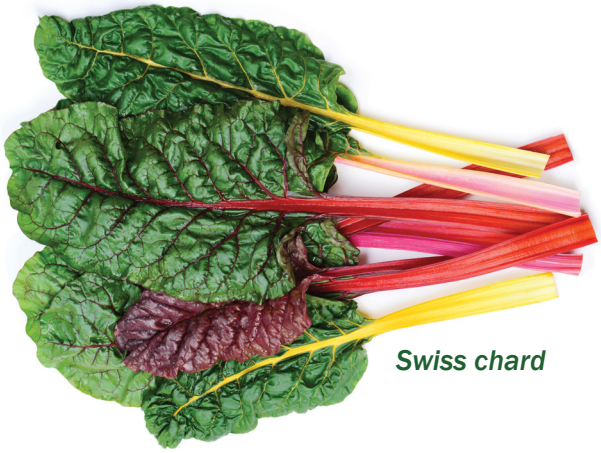
FOR SCHOOL AND HOME GARDENS

Leafy Greens

Collard greens

Spinach

Kale



Swiss chard

QUICK FACTS

- **Plant family:** *Brassicaceae* (Cabbage)
- **Season:** Cool
- **Life Cycle:** Biennial, but grown as an annual
- **Seed to first harvest:** 50-70 days

QUICK FACTS

- **Plant family:** *Chenopodiaceae* or *Amaranthaceae* (Beet)
- **Season:** Cool
- **Life cycle:** Biennial, but grown as an annual
- **Seed to first harvest:** 40-60 days

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SEEDS to SUCCESS
THE LOUISIANA FARM TO SCHOOL PROGRAM

Create a Sustainable Garden by improving soil health, relying on locally available materials and resources, and practicing environmentally sound horticultural practices

History

Collards and kale are both members of the *Brassicaceae* family, also known as the cabbage family, which includes other cool-season cole crops like cabbage, broccoli, Brussels sprouts, cauliflower and radish (see Figure 1). However, collards and kale are distinct from much of the cabbage family because they do not form heads; instead their leaves are harvested.

The Latin name for the variety of collards and kale, *acephala*, actually means "without a head" and can be considered "primitive" or "original" cabbages that have been produced for thousands of years. These leafy greens are thought to be native to the eastern Mediterranean and Asia Minor and have been recorded as produced by the early Greeks and Romans, who likely introduced them into Western Europe around 400 B.C. Kale was first mentioned in 200 B.C. In 1669, kale and collards were recorded in the U.S., and today collards are very common in the South as a cool-season crop. See Figure 3.

Spinach and Swiss chard are both members of the *Chenopodiaceae* (or *Amaranthaceae*) family also known as the beet or goosefoot family, which also includes beets, quinoa and lambsquarters (see Figure 2).

Spinach is thought to have originated in the Middle East (likely Iran). It was brought to Spain between 800-1200 A.D. by the Moors and into Europe in the 15th century. Around 1806, spinach was introduced to the U.S. It became very popular in the early 1900s, in part because of the comic strip character Popeye. Swiss chard originated in Sicily, Italy, and remains popular in the Mediterranean and across Europe. After the American Civil War, Swiss chard became more popular in the U.S. See Figure 3.

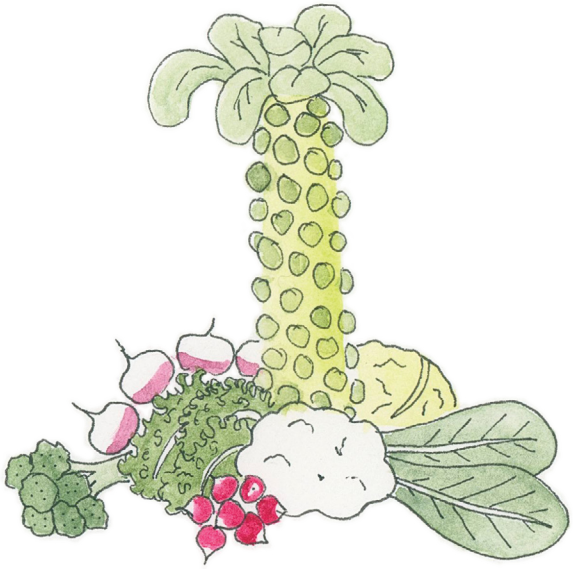

Figure 1. Collards and kale belong to the* Brassicaceae *plant family, along with cabbage, broccoli, Brussels sprouts, cauliflower, radishes and many more.

Figure 2. Spinach and Swiss chard belong to the* Chenopodiaceae *plant family which also includes beets, quinoa and many more.

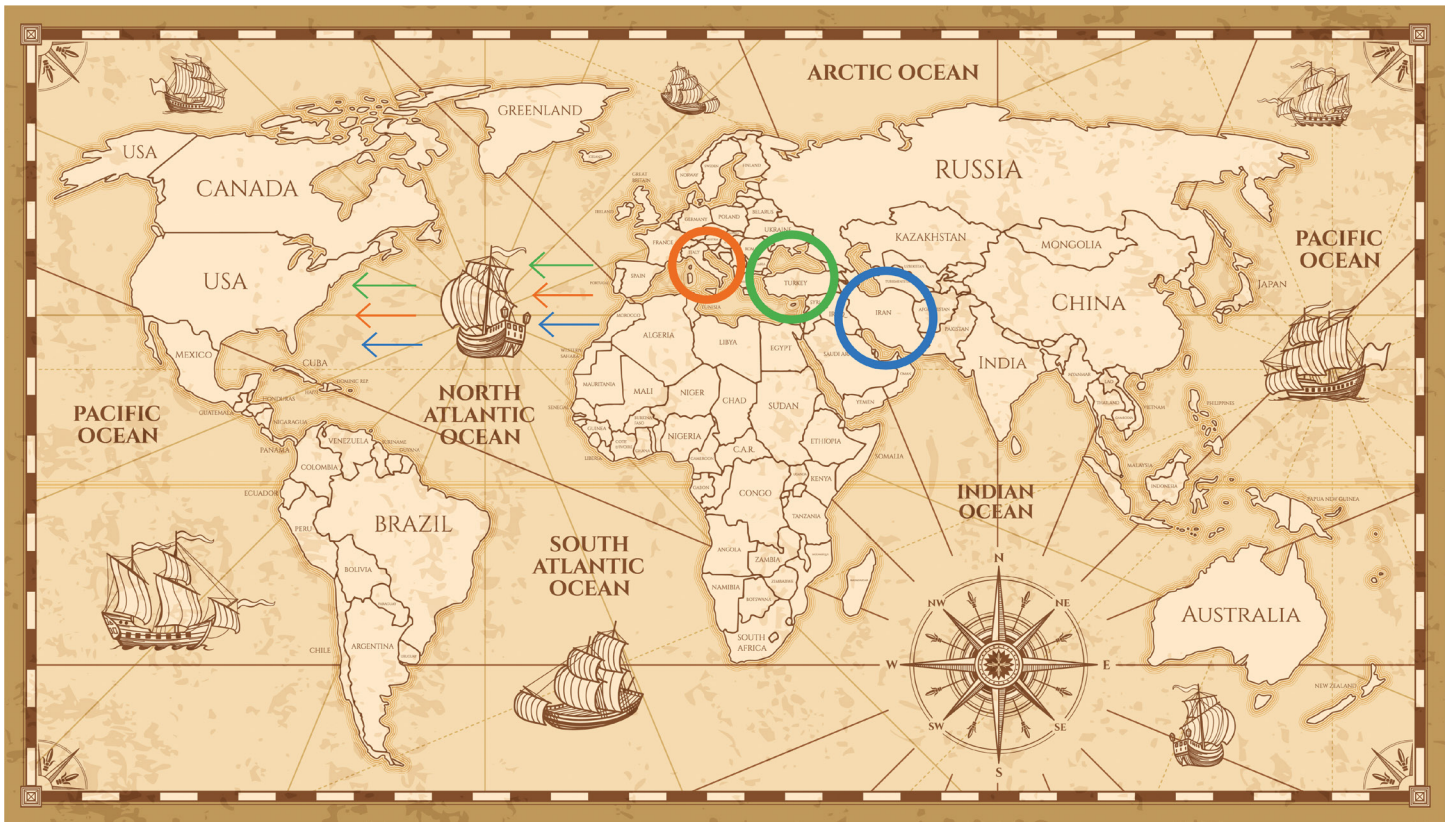

Figure 3. Map showing the origin and migration of collards and kale (green), spinach (blue) and Swiss chard (orange) to the U.S.

These leafy greens — collards, kale, spinach and Swiss chard — are actually biennials (the plant's life cycle from seed to flower takes two years) but are most commonly grown as an annual crop (one season/year).

Growing

Varieties

Collards and kale are heat and cold tolerant, very productive and easy to grow leafy greens (see Figure 4). The plant's leaves are harvested and, in cooler seasons, are particularly sweet and tender. Collards and kale are similar leafy greens, differing mainly in leaf appearance and taste. Both can be grown almost year-round. Collard varieties do not differ widely in appearance or taste, while kale varieties show more diversity in leaf color, shape, texture and length. Kale can also be harvested as either baby leaf (ideal for salads) or full size.

Spinach is a fast-growing cool season leafy green that produces the sweetest and largest leaves during cool months and short days (see Figure 4). Varieties of spinach are fairly similar in appearance but vary in the texture of the leaves (savoyed/curled leaf or smooth).

Swiss chard is also a cool-season crop, and though it can usually withstand a light frost, it is not as cold hardy as the other leafy greens (see Figure 4). Swiss chard is more heat tolerant than the others and usually remains productive throughout the summer, making it a great alternative green to lettuce during the warm season. The leaves and stems are edible, and Swiss chard varieties have stunningly colored stems. "Rainbow" chard (or Bright Lights variety) is very popular due to its array of colors (gold, pink, orange, purple, red, white).

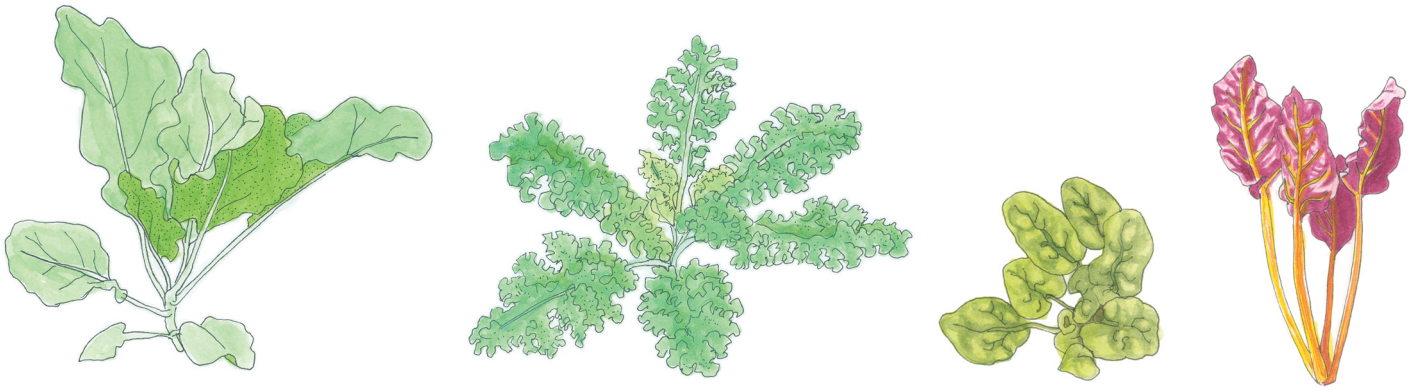

Figure 4. Main types of leafy greens (left to right): collards, kale, spinach and Swiss chard.

Leafy greens have either open-pollinated (including heirloom) or hybrid varieties. Some leafy greens are heirloom varieties, like Georgia collards and Lacinato kale, meaning 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 leafy green crops are perfect (both male and female flower parts) but prone to cross-pollination. If saving seed, different varieties should be separated by a distance of 800 feet-1/2 mile between different varieties 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 leafy green varieties (collards, kale, spinach and Swiss chard) for Louisiana in Table 1.

Table 1. Recommended Leafy Green Varieties for Louisiana

Variety Name	Description	Days to Harvest & Size	Resistance
Collards			
Blue Max	Blue-green savoyed (crinkled, curly) leaves; heavy yields from vigorous and uniform plants; hybrid	75 days	
Bulldog	Deep green, wavy leaves with fast regrowth; upright formation; consistent, productive hybrid	71 days 30” tall	Bolting
Champion	Dark blue-green, tender leaves; productive and hardy; can hold in field for extended harvest; cold tolerant; open-pollinated	60-75 days 24-36” tall	Bolting
Flash	Dark green, smooth leaves; fast regrowth; very productive; hybrid	75 days	Bolting
Georgia (Southern or Creole)	Long, dark green, tender leaves; reliable, productive yields; good for sandy/poor soil; heirloom variety	70-75 days 36” tall	Bolting, frost resistant
Hi-Crop	Large, heavy, blue-green leaves; good flavor and tender; vigorous and uniform; cold tolerant hybrid	75 days 18-26”	Bolting
Top Bunch	Medium green attractive savoyed leaves; tall and productive; vigorous, rapid regrowth; hybrid	Baby: 30-35 Mature: 70 days	Bolting

Variety Name	Description	Days to Harvest & Size	Resistance
Vates	Large blue-green leaves; high quality; flavorful; very productive; heirloom variety	75-80 days	Bolting, frost resistant
Kale			
Blue Knight	Curly blue-green leaves; flavorful, productive cold tolerant hybrid	Mature: 65 days Up to 4' tall	Bolting
Blue Ridge	Dark blue-green curly leaves; hybrid	Baby: 30-35 days Mature: 60 days	Bolting
Darkibor	Dark green extra curly leaves; flavorful; early, cold-tolerant variety; hybrid	Mature: 50-75 days 18-36" tall	
Lacinato, Tuscano (Dinosaur)	Dark blue-green savoyed leaves; sweet and tender; cold-tolerant heirloom from Tuscany, Italy	Baby: 30 days Mature: 60 days 30-40" tall	Bolting
Red Russian	Smooth green leaves with purple veins; tender variety for baby leaf or bunching; cold tolerant; open-pollinated	Baby: 25 days Mature: 50 days 24-36" tall	
Redbor	Purple-red curly leaves with sturdy stems; tall variety; cold-tolerant, productive hybrid	Mature: 55 days 24-36" tall	
Siberian	Tender, blue-green ruffled leaves with a thick white stem; very productive; cold tolerant; vigorous and tall variety; good for baby leaf or bunching; open-pollinated	Baby: 35-40 days Mature: 50-60 days 18-36" tall	
Starbor	Dark blue-green finely curled leaves; compact but very productive variety; hybrid	Mature: 55 days 12-18" tall	Yellowing
Vates (Dwarf Blue Curled)	Flavorful, dark green ruffled leaves; compact, cold-tolerant variety; good for baby leaf or bunching; open-pollinated	Baby: 25-30 days Mature: 50-60 days 24" tall	Bolting
Winterbor	Blue-green/green curly leaves; tall, cold-tolerant variety; very productive; hybrid	Mature: 60 days 24-36" tall	
Spinach			
Bloomsdale (Long Standing)	Savoyed dark green leaves; very flavorful, cold-tolerant heirloom variety	42-46 days	Bolting
Melody	Thick dark green leaves; early variety; very flavorful; hybrid	40-50 days	Bolting, downy mildew, mosaic
Space	Smooth, medium-dark green leaves; cold-tolerant, dependable hybrid	40 days	Downy mildew, leaf spot
Tyee	Dark green, lightly savoyed leaves; productive hybrid	45 days	Bolting, downy mildew
Unipack	Dark green, lightly savoyed leaves; uniform hybrid	48 days	Bolting, downy mildew

Variety Name	Description	Days to Harvest & Size	Resistance
Swiss Chard			
Bright Lights	Stunning multicolored stems (gold, pink, orange, purple, red, white) with lightly savoyed leaves; open-pollinated	Baby: 30 days Mature: 55-60 days	Bolting, frost resistant
Bright Yellow	Deep green savoyed leaves with bright yellow stem; open-pollinated	Baby: 28 days Mature: 57 days	
Fordhook Giant	Large, dark green savoyed leaves with broad white stems; very productive; heirloom variety	Baby: 20-27 days Mature: 55-60 days	Bolting, frost resistant
Lucullus	Large, pale green savoyed leaves with white stems; heirloom variety	Baby: 30 days Mature: 50 days	Bolting, frost resistant
Ruby Red or Rhubarb	Dark green savoyed leaves on true red stems; great for baby leaf as stem colors early; heirloom variety	Baby: 30 days Mature: 55-65 days	Bolting, frost resistant

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, Hoss Tools, Osborne Seed and Sakata Seed America.

Other recommended spinach varieties for Louisiana include: Ballet, Greyhound, Tiger Cat.

When and How to Plant

For all leafy greens, refer to the Leafy Green Planting Guide (Table 2) for recommended planting dates and spacing for full-sized plants; if planting for baby leaf, these recommendations can be decreased due to the smaller size.

Table 2. Leafy Green Planting Guide

Category	Planting Outside Dates	Plant Spacing (inches)	Row Spacing (inches)	Days to Harvest*
Collards	North/South LA: Jan. 15-April, July 15-Nov. 15	12-18	18-24	70-90 days (50-70 days)
Kale	North/South LA: Jan. 15-April, July 15-Nov. 15	8-12	18	70-90 days (50-70 days)
Spinach	North LA: Feb.-March, Oct.-Nov. 15 South LA: Jan. 15-March, Sept. 15-Nov. 15	4-6	12	40-60 days 25-35 days baby
Swiss Chard	North/South LA: Jan. 15-April, Aug. 15-Oct.	6-12	18	45-65 days

**Days from seed to harvest; days in parentheses are transplant to harvest.*
Note: Table adapted from LSU AgCenter and UF Extension Planting Guides and Southeastern U.S. Vegetable Production Handbook.

Collards and kale: For spring season extension, start seeds inside approximately 4 weeks before the recommended planting dates (see Table 2). Using seed germination trays (with at least 1.5-inch diameter cells), plant one seed per cell (unless germination rate is low or conditions are less than ideal; then plant two seeds per cell) at a shallow depth (1/8-1/4-inch), just deep enough to be covered with a thin layer of soilless potting mix (see Figure 5). Make sure to keep the seed trays in a warm, well-lit area (optimum germination temperature is 85 degrees Fahrenheit), and keep soil moist, which usually requires daily light watering. A seedling heat mat and plastic dome lid are helpful in maintaining ideal germination conditions. If multiple seeds were planted per cell, thin seedlings to one plant per cell after a few true leaves develop.

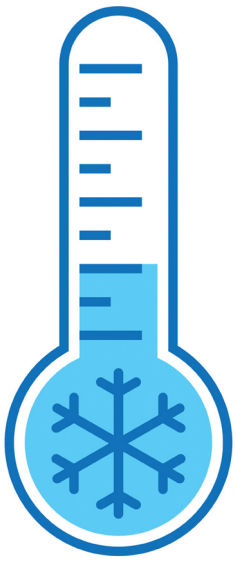

Figure 5. Planting seeds in a germination tray.

Collards and kale are generally very transplant hardy. If soil can be worked, seedlings can be transplanted outside approximately 2 weeks later or when 4-6 true leaves develop. A few days before transplanting outside, it is recommended to follow a hardening off process to transition seedlings to outdoor conditions.

If direct-seeding outside for spring planting, soil temperatures must be above 45 F and under 95 F for seed germination. The use of a soil temperature map can help guide planting decisions. It is recommended to direct-seed at a shallow depth of 1/8-inch in rows. When direct-seeding outside, either follow the recommended plant spacing (refer to Leafy Green Planting Guide, Table 2) or scatter seeds (broadcast) in a 2-inch wide furrow or line that is about 1/2-inch deep. Lightly cover with soil and water in. Thin to the recommended plant spacing after true leaves develop.

Leafy greens will produce more flavorful greens in the cool season, especially after a light frost. Both collards and kale prefer average growing temperatures between 60-65 F but are tolerant to heat and cold. For a continuous supply of baby leaf kale, plant seeds every 4-5 weeks.

Spinach: This crop is usually direct seeded outside at a shallow 1/4-inch depth in rows. When direct-seeding outside, you may follow the recommended plant spacing (refer to Leafy Green Planting Guide, Table 2) or scatter seeds (broadcast) in a 2-inch wide furrow or line that is about 1/2-inch deep. Lightly cover with soil and water in. Thin to the recommended plant spacing after true leaves develop. Spinach may be started inside and then transplanted outside after the last frost but may need extra care to survive. As a cool-season leafy green, the optimal soil temperature range for germination is 45-75 F with an optimum of 70 F. Spinach seeds should not be sown if the soil temperature is over 85 F as higher temperatures reduce germination success. The use of a

soil temperature map can help guide planting decisions.

Spinach can be an early spring, late fall or winter crop, and may even survive winter temperatures. The optimum growing temperature for best growth and quality is 60-65 F, with a 40 F minimum and 75 F maximum. However, spinach is frost tolerant, and well-established plants are cold hardy to 20 F. Longer days trigger bolting. For a continuous supply of spinach, plant every 2 weeks, or every week for baby spinach.

Swiss chard: To extend the growing season, it is recommended to start seeds inside about 5-6 weeks before transplanting outside. Using seed germination trays (with at least 1.5-inch diameter cells), plant one seed per cell (unless germination rate is low or conditions are less than ideal; then plant two seeds per cell) at a shallow depth (1/8-1/4 inch), just deep enough to be covered with a thin layer of soilless potting mix (see Figure 5). Make sure to keep the seed trays in a warm, well-lit area. Keep soil moist, which usually requires daily light watering. Seeds will germinate in soil temperatures between 50-85 F, but most rapidly around 85 F (maximum temperature of 95 F, minimum of 40 F). A seedling heat mat and plastic dome lid are helpful in maintaining ideal germination conditions. If multiple seeds were planted per cell, thin seedlings to one plant per cell once a few true leaves develop. Swiss chard is generally very transplant hardy, and seedlings can be transplanted outside approximately 2 weeks later. A few days before planting transplants outside, it is recommended to follow a hardening off process to transition seedlings to outdoor conditions.

If direct-seeding outside, sow seed at a depth of 1/4 inch, cover with soil or compost, and lightly water. Soil temperature should be between 50-85 F. A soil temperature map can help guide planting decisions. When direct-seeding outside, you may follow the recommended plant spacing (refer to Leafy Green Planting Guide, Table 2) or scatter seeds (broadcast) in a 2-inch wide furrow or line that is about 1/2 inch deep. Lightly cover with soil and water in. Thin to the recommended plant spacing after true leaves develop.

Swiss chard is very heat tolerant and may survive a light frost. For a continuous supply of baby leaf chard, plant seeds every week.

Where to Plant

Plant these leafy greens in deep, well-drained, fertilized soil with a soil pH of 5.5-7.5. Spinach is less tolerant of acidic soil, so soil pH should be above 6.0. Leafy greens prefer full sun (6 hours/day), although they may tolerate partial shade. They are also tolerant of sandy or heavy soil if there is good drainage, and planting into raised beds will aid in good drainage. It is recommended to plant leafy greens in box beds or traditional raised garden rows that are about 12 inches tall to ensure good drainage (and allow for the spinach taproot). 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. If mature leaves are small and pale, increase plant spacing to reduce crowding or apply fertilizer. Yellowed spinach leaves may indicate a magnesium deficiency.

Reflective plastic mulch — or a plastic fabric/film — is recommended to deter aphids that transmit viruses, to increase soil temperature and to control weeds. Drip irrigation is also recommended when using plastic mulch to maintain ideal soil moisture and to encourage productive plants.

Each season rotate plant families — avoid planting crops from the same plant family in the same area of the garden — to reduce disease and pests. It is recommended to rotate the *Brassicaceae* crops (collards and kale) on a longer 4 year cycle.

Plant Care

It is recommended to follow sustainable gardening principles.

Watering: Thoroughly water plants weekly; a general recommendation is 1 inch of water per week. More frequent watering is needed during warm weather and on sandy soils. Deep roots are encouraged by soaking the plants.

Fertilization: Nitrogen may be in short supply early in the cool growing season that is ideal for leafy greens. Leaves may appear yellow or light green. Additions of organic matter to planting beds can increase microbiological activity in cold soils and, therefore, aid in uptake of nutrients. A water-soluble fertilizer solution may be used on young plants if deficiency symptoms are observed. Seaweed extracts, fish emulsion, diluted compost tea or a synthetic water-soluble fertilizer may be used.

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 3-6 inches deep using a rake. Supplemental side-dressing, or reapplication of synthetic or organic fertilizer, is recommended 3-4 weeks after transplanting. Side-dressing is the addition of a small amount 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 lightly along the side of the row, keeping it about 6 inches away from plant stems, and water into the soil. Additional side-dressing may be applied every 3-4 weeks. Because of their slow, steady release of nitrogen, crops fertilized with organic fertilizer do not usually need to be side-dressed, but fish emulsion may be used for a quick-release source of nitrogen if leaves show yellowing.

Weeds: Plastic mulch will control most of the weeds; hand pull weeds close to the plant, especially in the planting holes. It is especially important to control weeds around spinach plants because the shallow roots compete directly with weeds.

Insect pests and diseases: Collards and kale are susceptible to cabbage worms, harlequin bugs and black rot. For spinach, blight and seed or root rot are also possible, with higher risk in cool and damp weather. Swiss chard may experience leaf spots, pocket rot and damping off. Most leafy greens are susceptible to aphids, leaf hoppers, leafminers, flea beetles, Fusarium wilt and downy mildew. It is recommended to cover seedlings with row cover at the time of planting to prevent insect pest pressure. Some of these leafy green insect pests and diseases are described in more detail in Table 3, but common prevention and management methods include removal of plant debris, crop rotation and increased air circulation.

Table 3. Organic and Natural Management for Common Leafy Green Insect Pests and 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 • Reflective mulches; insect barrier fabric • Beneficial insects: lady bugs, lacewings, predatory stink bugs, syrphid flies • Insecticidal soap, neem oil, pyrethrin, Azera
• Swiss chard is particularly susceptible midsummer • Oblong beetles with large heads, long necks, stripes	Blister beetles	• Row covers • Diatomaceous earth • Weed control
• Late spring occurrence • Light green larvae with faint yellow stripes • Holes in leaves and partially eaten; frass	Cabbage worms	• Row covers • Hand pick worms • Till under debris after harvest • Organic insecticide (*Bacillus thuringiensis*) if many plants infested
• Damp, cool conditions • Small, yellowing, angular patches on leaves • Damping off	Downy mildew	• Crop rotation (2+ years) • Plant resistant varieties • Reduce leaf moisture by improving air circulation; morning irrigation • Remove crop debris and weeds • Organic/natural fungicides
• 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 transplants • 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 wasp • Remove infected leaves

Note: Table adapted from Texas A&M AgriLife Extension, UMass Extension Vegetable Program and Alabama A&M and Auburn Universities 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

Collards and kale: The most common method is to harvest lower leaves first by breaking off with your hands or clipping close to the stem. Another option is to cut the entire plant about 4 inches above the soil, although the plant may not grow back. Most varieties are very frost tolerant and fall plantings may produce all winter.

Spinach: Like other leafy greens, spinach may be harvested as a whole plant or by removing outer leaves. Begin harvesting once the plant has about six to eight leaves that are 3-4 inches long. For bunching spinach, clip just below the root to harvest the whole plant. When harvesting loose leaves, clip or pinch off outer leaves or those closest to the soil first since these will be the most mature. Because spinach grows so close to the soil, leaves should be thoroughly washed.

Swiss chard: The full-sized leaves, with stems intact, should be harvested at the base of the plant using shears. Leaves are mature at 8-10 inches long. If harvesting baby leaf chard, leaves are ready when they reach about 3 inches long and should be harvested at the base of the plant using shears or by hand.

Here are some helpful harvesting videos:

1. How to harvest kale leaves (same method for collards and Swiss chard).
2. How to harvest spinach leaves.

For all leafy greens, never remove more than 1/3 of the leaves at one harvest (unless harvesting the entire plant) to allow for regrowth. It is recommended to remove yellowed or damaged leaves from the plant to increase productivity. Continuous harvesting will encourage productive plants and new leaf growth. Harvested leafy greens should be cooled immediately to prevent wilting. At an ideal storage temperature of 32 F with high humidity (95-100%), the crop will last approximately 10-14 days for collards and spinach, and 2-3 for kale. Cut stems can be stored in a jar of water, just as you would store cut flowers, inside the refrigerator. Store loose leaves (spinach and baby leaf varieties) in a plastic bag.

Leafy greens can be preserved by freezing after washing, blanching and draining.

Nutrition

Leafy Greens Are Nutritious and Good for You

Very high in vitamin A

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

High in potassium

Essential for body function, especially the heart, kidney, nerves, bones and muscles.

Rich in vitamin C, E and B6

Important for bones, skin and blood vessels; repairs damaged cells; supports immune system and brain health.

Provides calcium, iron and magnesium

Bone health, produces red blood cells, important in muscle and nerve function.

Provides calcium, iron and magnesium

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

Recipes

Basics of cooking with leafy greens:

Collards: extension.purdue.edu/foodlink/food.php?food=collard%20greens
Swiss Chard: Chard extension.purdue.edu/foodlink/food.php?food=chard
Kale: extension.purdue.edu/foodlink/food.php?food=kale
Spinach: extension.purdue.edu/foodlink/food.php?food=spinach
General information on selecting, pairing, preparing and storing. Also includes a list of recipes.

Video on how to prepare collards: youtu.be/x_lLLxr72sY
Ever wondered about the basics of how to use collards? Chef Allison Kingery shows options for preparing this vegetable.

Taste Test Ideas

Green Smoothie

Kale Chips

Spinach Salad

Other websites with many leafy green recipes:

Arizona Health Zone

Visit www.azhealthzone.org/recipes and search for collards, Swiss chard, kale and spinach recipes.
Recipes include chicken vegetable soup with kale, spinach and pasta, cheesy veggie enchiladas and more.

USDA MyPlate Kitchen

Visit www.myplate.gov/myplate-kitchen/recipes and search for collards, Swiss chard, kale and spinach recipes.
Recipes include collard green gumbo, kale chips, spinach salad and more.

California's Eat Fresh

Visit eatfresh.org/find-a-recipe and search for collards, Swiss chard, kale and spinach recipes.
Recipes include veggie scramble, sautéed greens, kale stew and more.

Produce for Better Health Foundation

Kale: fruitsandveggies.org/fruits-and-veggies/kale/?view=recipes
Recipes include mandarin kale salad with cranberry dressing and more.
Spinach: fruitsandveggies.org/fruits-and-veggies/spinach/?view=recipes
Recipes include quiche portabella caps, citrus green juice and more.

New Entry Sustainable Farming Project

Swiss Chard: nesfp.nutrition.tufts.edu/world-peas-food-hub/world-peas-csa/produce-recipes/swiss-chard
Recipes include chard gratin, creamed chard and onion pasta and more.

Sources

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- UF Extension Planting Guide edis.ifas.ufl.edu/pdffiles/VH/VH02100.pdf
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- Texas A&M AgriLife Extension Easy Gardening: Collard Greens cdn-ext.agnet.tamu.edu/wp-content/uploads/2014/09/how-to-grow-collard-greens.pdf
- Texas A&M AgriLife Extension Commercial Crop Guide: Collards/Kale aggie-horticulture.tamu.edu/vegetable/files/2011/10/collardskale.pdf
- Texas A&M AgriLife Extension Aggie Horticulture: Greeks and Romans grew kale and collards aggie-horticulture.tamu.edu/archives/parsons/publications/vegetabletravelers/kale.html
- Texas A&M AgriLife Extension Easy Gardening: Spinach and Other Greens cdn-ext.agnet.tamu.edu/wp-content/uploads/2014/09/how-to-grow-spinach-and-other-greens.pdf
- Alabama A&M & Auburn Universities Extension, Crop Production www.aces.edu/blog/category/farming/crop-production
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