

# SUSTAINABLE GARDENING

FOR SCHOOL AND HOME GARDENS

## Cabbage

*Brassica oleraceae* (cabbage), *Brassica rapa* (Chinese cabbage)



### QUICK FACTS

- Plant family: *Brassicaceae* or *Cruciferae* (mustard, crucifers, cabbage)
- Season: Cool
- Life cycle: Biennial, but grown as an annual
- Seed to first harvest: 70-100 days

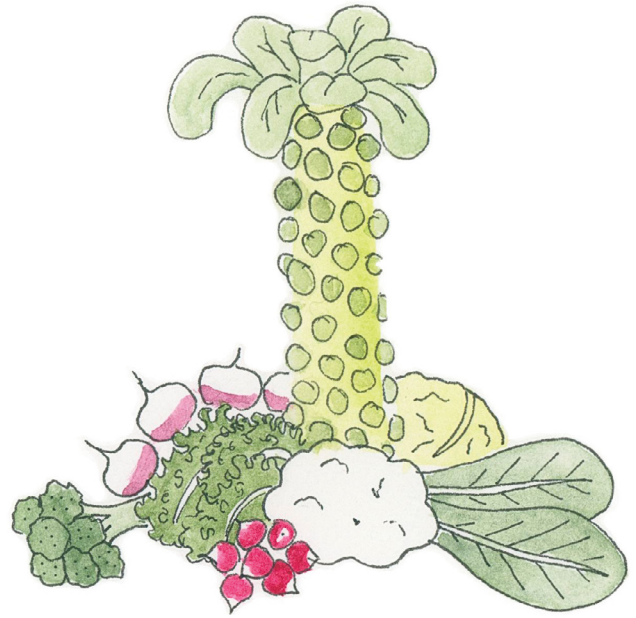


Create a Sustainable Garden by improving soil health, relying on locally available materials and resources, and practicing environmentally sound horticultural practices

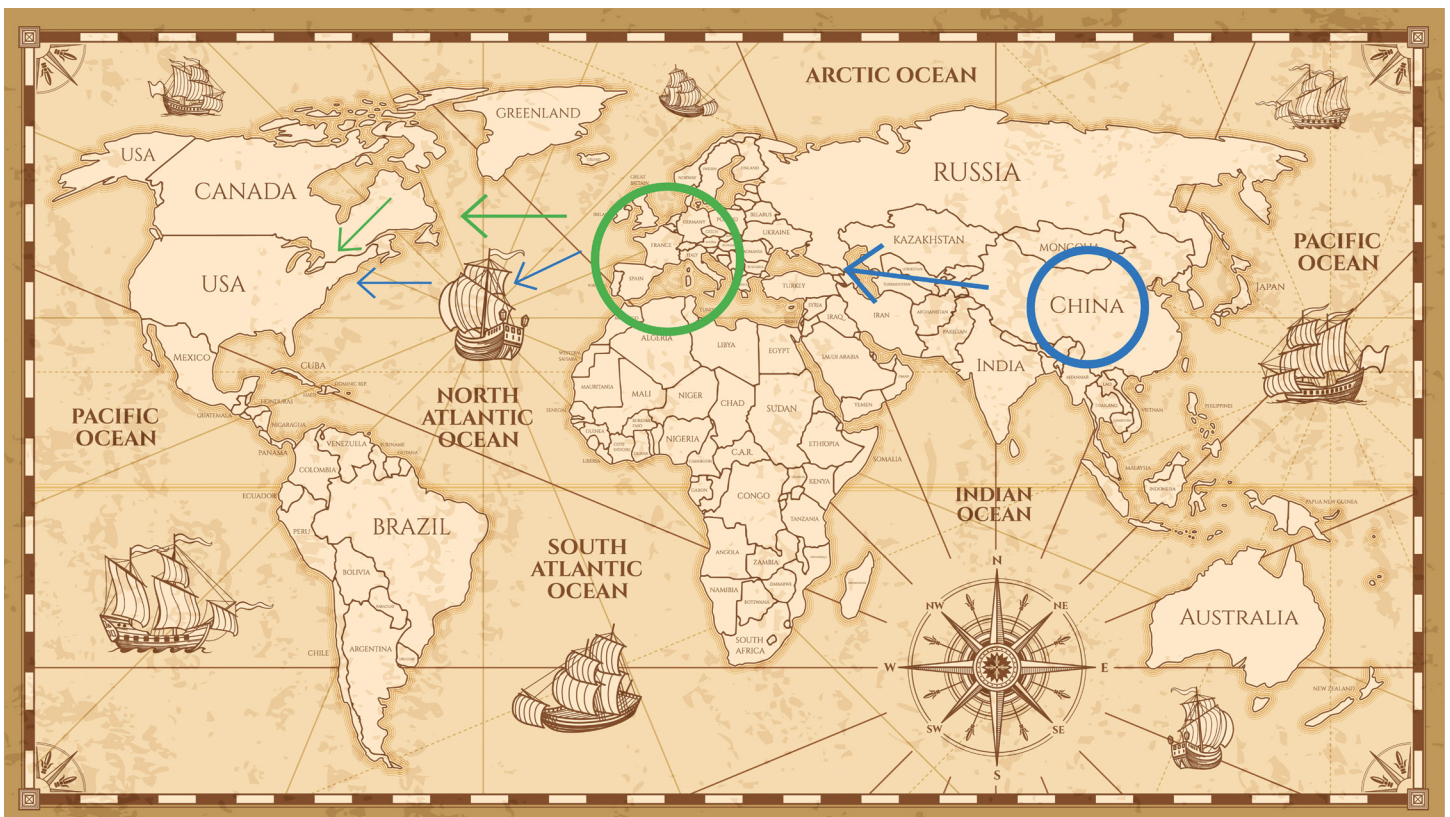
# History

Cabbage and Chinese cabbage are members of the *Brassicaceae* family, also known as the cabbage, mustard or crucifer family, which includes other cole crops like broccoli, cauliflower, kale, collards, kohlrabi and radishes (see Figure 1). Both cabbage and Chinese cabbage are cool-season, frost-tolerant crops that are widely adapted to temperate and subtropical regions.

The center of origin of cabbage is most often considered to be the coastal areas of the Mediterranean, the British Isles and Western Europe. Cabbage is thought to have been first grown by the Greeks for medicinal purposes over 3,000 years ago. Today's cabbage varieties are likely derived from wild, nonheading cabbages with an origin in the eastern Mediterranean, although a perennial weed native to England and France may be a wild ancestor of cabbage. This crop was likely transported by Romans and Celts from the Mediterranean region, as cabbage has been a common food crop in Europe since 900 A.D. Cabbage was introduced to Canada in 1541 by Jacques Cartier and to the U.S. by the mid-1600s. Early colonists continued to transport cabbages to the U.S., and Native Americans were growing this crop by the 1700s. See Figure 2.



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



**Figure 2.** Map showing the origin and migration of cabbage (green) and Chinese cabbage (blue) to the U.S.

Chinese cabbage has been grown in China since the 5th century (see Figure 2). There are many different types and varieties, with this crop spreading throughout Asia and eventually the world. Chinese cabbage has the widest production area of any Asian brassica and is the most important of this species. Today, Chinese cabbage is a staple vegetable in Asian

culture and it is used to make dishes like kimchi, which is Korean fermented cabbage.

Cabbage and many Chinese cabbage are biennials (the plant's life cycle from seed to flower takes two years), but both are commonly grown as an annual crop (one season per year).

## Growing

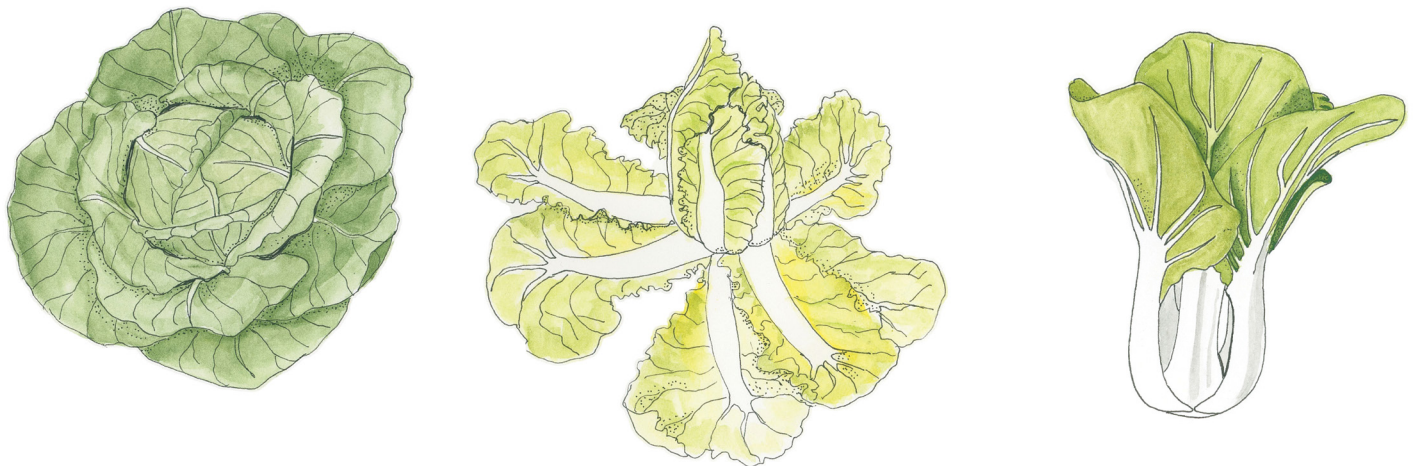
### Varieties

Along with other brassicas, cabbage and Chinese cabbage are cool-season crops that are fairly heat and cold tolerant. There is a great diversity of cabbage varieties with differences in color, head size, leaf texture, disease resistance and cuticular wax (bloom). Cabbage varieties are also grouped by earliness (harvest time), head shape (round, flat, or pointed) and color (white, green, blue, red and purple).

Round cabbage heads consist of tightly layered thick leaves with a short core (see Figure 3). They are traditionally green or red and typically weigh 3-5 pounds. Some varieties are savoy types and distinguishable by the crinkled, “blistered-leaf” texture.

These are often more tender and flavorful. Savoy varieties like Clarissa and Famosa are recommended for Louisiana. These round cabbage types take longer to mature, so for spring planting be sure to select early maturing and heat-tolerant varieties for the best chance of success in this warm climate.

Chinese cabbage is often divided into two types: heading (closed head) and nonheading. For headed types, Napa (tight head) cabbages are blocky shaped and Michihili (semiloose head) are tall and slender, while the nonheading Pak Choi (bok choy, petsay, pei tsai) types are vase-shaped and form a swollen stem rather than a head (see Figure 3). Chinese cabbages are typically faster to mature than round cabbage and are particularly flavorful and tender.



**Figure 3.** The main types of cabbage and Chinese cabbage (left to right): round, heading (Napa), and nonheading (Choi).

Most varieties of cabbage and Chinese cabbage are grouped into three maturity types: early, medium or late. Select varieties for the growing season when the crop will be produced. For an early spring crop select early and midseason varieties; for a fall crop use mid- or late-season varieties. In the south, production is most successful in the winter and early spring.

Cabbage and Chinese cabbage have either open-pollinated (including heirloom) or hybrid varieties. Some heirloom varieties of cabbage/Chinese cabbage are recommended for Louisiana: Copenhagen, Flat Dutch, Wakefield and Michihili. These seeds have been saved

for at least 50 years and can be saved each season and replanted, and they are open-pollinated. Brassica crops have perfect, self-pollinating flowers (containing both male and female parts) but easily cross-pollinate with other brassicas. If saving seed, different varieties of brassicas should be separated by a distance of 1/8-1/2 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 cabbage and Chinese cabbage varieties for Louisiana in Table 1.

**Table 1. Recommended Cabbage and Chinese Cabbage Varieties for Louisiana**

Variety Name (season)	Description	Days to Harvest	Resistance
<b>Green Cabbage</b>			
<b>Blue Vantage (early/mid)</b>	Large, dense, blue-green heads with a short core; adaptable hybrid	80 days	Bacterial speck, black rot, Fusarium yellows, tipburn
<b>Capture (mid-late)</b>	Medium-large, round heads; flavorful; vigorous; hybrid	87 days	Black rot, Fusarium yellows
<b>Cheers (mid)</b>	Large, 5-pound blue-green heads with a short core; consistent and flavorful; hybrid	75 days	Bacterial speck, black rot, Fusarium yellows
<b>Clarissa (late)</b>	Medium, dense, savoyed heads with yellow-green leaves; more flavorful in cool weather; hybrid	89 days	White rust
<b>Copenhagen (early)</b>	Solid, medium, blue-green heads; uniform; compact plants; good holding ability; early maturing and adaptable; Dutch heirloom	65-75 days	
<b>Emblem (mid)</b>	Medium, round, gray-green heads; good quality; prefers warm weather; hybrid	85 days	Black rot, Fusarium yellows, tipburn
<b>Famosa (mid)</b>	Dark blue-green, medium, savoyed heads; mild flavor and tender; hybrid	68-81 days	Downy mildew
<b>Fast Vantage (early)</b>	Medium, round, green heads; very flavorful and high quality; early maturing and uniform; heat-tolerant hybrid	50 days	
<b>Flat Dutch (late)</b>	Large, flat heads with a short core; low-growing; good holding ability; heat-tolerant heirloom	85 days	
<b>Golden Acre (early)</b>	Medium, round green heads; sweet with good texture and flavor; small, compact plants; open-pollinated	62 days	
<b>Greenboy (mid/late)</b>	Medium, green heads with white interior; high quality; heat- and drought-tolerant; adaptable hybrid	80-85 days	Fusarium yellows

Variety Name (season)	Description	Days to Harvest	Resistance
<b>Round Dutch (early)</b>	Medium-large, dark blue-green heads; solid and uniform; very flavorful; heat-tolerant; small, compact plant; open-pollinated	75-85 days	
<b>Royal Vantage (mid)</b>	Large, solid, round, blue-green heads; good quality and long shelf life; prefers cool weather; adapts in poor soil conditions; hybrid	90 days	Bacterial speck, black rot, Fusarium yellows, tipburn
<b>Savoy (early)</b>	Medium, deep blue-green heads; flavorful and sweet; productive and good quality; good shelf life; adaptable, heat-tolerant hybrid	80-90 days	
<b>Stonehead (early)</b>	Medium, gray-green head; good holding ability; compact plant; early maturing hybrid	60 days	Tipburn
<b>Superstar (mid/late)</b>	Medium-large, round, green heads; high quality and good holding ability; flavorful; hybrid	90 days	Black rot, Fusarium yellows
<b>Tendersweet (mid)</b>	Medium, flat green heads; flavorful, sweet, crisp; adaptable hybrid	71 days	Splitting
<b>Vantage Point (mid/late)</b>	Large, round, dense, blue-green heads; good quality, holding ability, shelf life; productive hybrid	95 days	Bacterial speck, black rot, Fusarium yellows, tipburn
<b>Wakefield (early)</b>	Conical, dark green heads with sweet hearts; small-medium; reliable heirloom	64-74 days	Fusarium yellows

### Red Cabbage

<b>Red Acre (early)</b>	Round, medium, red-purple heads; stores well; susceptible to sunburn; hybrid	76 days	Fusarium yellows
<b>Red Dynasty (mid)</b>	Round, medium, attractive red heads; productive and uniform hybrid	75 days	Black rot, tipburn
<b>Red Express (early)</b>	Small, solid, round, red heads; flavorful; early maturing; compact plant; open-pollinated	62 days	Splitting
<b>Red Hawk (early)</b>	Dark violet-red, medium heads; early maturing and adaptable; grows well in hot and humid climates; hybrid	60-80 days	Fusarium yellow.
<b>Red Jewel (mid)</b>	Medium-large, round, garnet-red heads with a short core; uniform; early maturing hybrid	75 days	
<b>Rio Grande (all)</b>	Large, deep red heads; consistent and productive; adaptable hybrid	75 days	

### Chinese Cabbage

<b>Bilko</b>	Dark green Napa type; large 12-inch heads; mild and sweet flavor; adaptable hybrid	54-65 days	Bolting, clubroot, Fusarium yellows
<b>Blues</b>	Blocky Napa type; 10-inch heads with bright green leaves and white ribs; adaptable hybrid	57 days	Angular leaf spot, basil stem rot, black rot, bolting, downy mildew, Fusarium yellows

Variety Name (season)	Description	Days to Harvest	Resistance
<b>Bopak</b>	Large Pak Choi type; 14-inch heads with dark green leaves; tender, crisp, flavorful; compact, upright, dense growing habit; harvest as full-size or baby; hybrid	60 days	Bolting
<b>China Express</b>	Medium Napa type; blocky light green heads; adaptable and uniform hybrid	62 days	Bolting, tipburn
<b>Emiko</b>	Dark green Napa type; compact, attractive heads; consistent; mild and tender; good holding ability; hybrid	60-63 days	Bolting, bacterial soft rot, clubroot, Fusarium yellows, tipburn
<b>Green Rocket</b>	Bright green Michihili type; cylindrical; productive; heat- and cold-tolerant; long shelf life; hybrid	70 days	
<b>Joi Choi</b>	Heavy Pak Choi type; 12-15-inch heads with dark green leaves and thick white stems; broad and vigorous; heat- and cold-tolerant; early maturing hybrid	50 days	
<b>Mei Qing Choi</b>	Shanghai Pak Choi type with misty green leaves; 8-10 inches tall; very flavorful and tender; uniform, compact, vase-shaped; productive; heat- and cold-tolerant; harvest as full-size or baby; hybrid	40-45 days (21-24 baby)	Bolting
<b>Michihili</b>	Large Michihili type; upright, blanched heads with dark green leaves; sweet and mild flavor; Chinese cabbage heirloom	73-78 days	
<b>Monument</b>	Cylindrical Michihili type, 18-inch Chinese cabbage with green leaves and a white interior; very productive; crisp; heat and cold tolerant; hybrid	80 days	Black speck
<b>Rubicon</b>	Heavy Napa type; firm 11-inch heads with deep green leaves, white ribs and yellow interior; sweet and tangy flavor; hybrid	52 days	Black speck, bolting
<b>Yuki</b>	Large Napa type; blocky green heads; uniform hybrid	67 days	Black speck, clubroot

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, Reimer Seeds, Willhite Seed, Sakata Seed America, All-America Selections, Jordan Seeds, Syngenta, Hoss Tools, Harris Seeds, Sustainable Seed Co. and Seedway.

Other recommended cabbage varieties for Louisiana include:

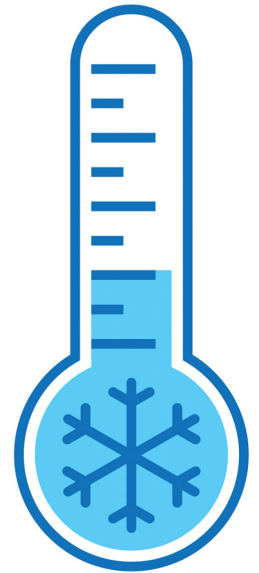
Round Cabbage: Bayou Dynasty, Blue Thunder, Bravo, Bronco, Bruno, Cairo, Cardinal, Garnet, Grand Vantage, Hercules, Lynx, Market Prize, Melissa, Ramada, Rio Verde, Ruby Ball, Solid Blue 780, Quick Start.

Chinese Cabbage: Brisk Green Pak Choi, China Flash Napa, China Pride Napa, Jade Pagoda, Kasumi Napa, Pacifiko Napa.

## When and How to Plant

Both cabbage and Chinese cabbage are cool-season crops that prefer cool temperatures for optimal growth and quality. If temperatures are too warm the plants may not develop a proper head. Chinese cabbage is more difficult to grow, needing precise growing conditions for productive and vigorous plants. It is recommended to grow Chinese cabbage and cabbage during the winter season in Louisiana. Both of these crops can be established by either

transplanting or direct-seeding outside. For transplanting, it is recommended to start seeds for both crops inside approximately 6 weeks before the recommended planting dates (see the Cabbage and Chinese Cabbage Planting Guide, Table 2). Using seed germination trays (with at least 1.5-inch diameter cells), plant 2-3 seeds per cell at a shallow depth (1/4-1/2-inch) just deep enough to be covered with a thin layer of soilless potting mix (see Figure 4).



**Figure 4.** Planting seeds in a germination tray.

Make sure to keep the seed trays in a warm (optimum germination temperature is 80-85 degrees Fahrenheit), well-lit area 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. Thin seedlings to one plant per cell after a few true leaves develop. A few days before planting transplants outside, it is recommended to follow a hardening off process to transition seedlings to outdoor conditions.

Cabbage and Chinese cabbage are generally transplant hardy and can be planted outside once 3-4

true leaves develop and the soil has warmed. Ideally, transplant this crop when soil temperatures reach 65-75 F (minimum 50 degrees). The use of a soil temperature map can help guide planting decisions. Cabbage head size is controlled by plant spacing. Planting closer will result in smaller heads, about 2-3 pounds, while spacing further apart will result in larger heads, about 5-7 pounds.

If direct-seeding, refer to Cabbage and Chinese Cabbage Planting Guide (Table 2) for the recommended seed spacing and plant timing for your area.

**Table 2. Cabbage Planting Guide**

Category	Transplant Outside Dates	Plant Spacing (inches)	Row Spacing (inches)	Days to Harvest*
<b>Cabbage</b>	<u>North LA</u> : Jan. 15-March 15, Aug.-Nov. <u>South LA</u> : Jan. 15-March 15, Aug. 15-Nov.	9-18	12-36 1-2 rows per bed	85-110 (70-90)
<b>Chinese cabbage</b>	<u>North/South LA</u> : Jan. 15-March 15, Aug.-Oct.	6-12 (2-4 baby)	18 (3 baby) 1-2 rows per bed	70-100 (40-70)

\*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.

Cabbage prefers cool days between 60-70 F and cold nights between 40-50 F but are tolerant to both warm and cold temperatures. Cabbage is cold hardy to as low as 20 F for short periods if properly hardened. In general, young plants are more tolerant of cold compared to plants reaching maturity. Most cabbage varieties are susceptible to bolting during extended periods of long days (15 hours of sunlight) and high temperatures. Susceptibility to bolting is variety dependent. Chinese cabbage is less tolerant to cold temperatures and is easily damaged by freezing conditions. Temperatures above 75 F can cause tipburn for some varieties, so the weather and timing of planting for Chinese cabbage impacts the potential success with this crop.

## Where to Plant

Cabbage and Chinese cabbage should be planted in deep, well-drained, fertilized soil with a soil pH of 6.0-7.5. These crops are less tolerant of acidic soil, so the pH should be above 6.0. It is important to select a planting area in full sun, and it is preferable to plant these crops in sandy loam soil high in organic matter (although cabbage can also tolerate partial shade and heavy soils). It is best to plant these crops in box beds or traditional raised garden rows that are about 12 inches tall to ensure good drainage. 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.

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.

It is recommended to rotate Brassica crops at least every 3-4 years — avoid planting vegetables from the same plant family in the same area of the garden — to

reduce disease and pests. If possible, rotate every year to keep disease and pest pressure down. Floating row covers may prevent insects, such as flea beetles and root maggots, from damaging young transplants and plants.

## Plant Care

It is recommended to follow [sustainable gardening](#) principles.

**Watering:** Cabbage and Chinese cabbage are relatively drought tolerant, though early varieties are susceptible to splitting (bursting open) at maturity if heavy watering or rain follows a drought. Be sure to provide adequate, uniform watering after planting and during head formation. In humid areas, supplemental watering is often minimal. In general, vegetable crops require 1 inch of rain or supplemental irrigation a week.

**Fertilization:** Cabbage has a high requirement for nitrogen. Nitrogen availability varies due to soil type, organic matter content and fertilizer application. Small head size, delayed maturity, reduced shelf life, toughness and unpleasant odors are indications of nitrogen deficiency. Another indication for nitrogen deficiency is yellowing of the oldest or most mature (lowest) leaves. In general, red cabbage requires higher nitrogen rates to obtain optimum head size. Like most brassicas, cabbage has a high requirement for boron and molybdenum. Boron deficiency causes yellowing or chlorosis of the youngest leaves and stems. Molybdenum deficiency symptoms in cabbage include a general yellowing (marginal and interveinal chlorosis) and downward curling of margins on older leaves. It's a good idea to occasionally have the soil tested. Results will provide soil pH, soil texture and the content of major nutrients in the soil, as well as micronutrients like boron and molybdenum, if requested. Recommendations will be provided for increasing any nutrients that are lacking to produce a good crop. The local county extension agent can assist with results interpretation.

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 1.25 pounds (2.5 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 fertilizer, is recommended 3-4 weeks after planting and again in 2-3 weeks. 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 around each plant, 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 usually need to be side-dressed, but fish emulsion can provide a quick release form of nitrogen for side-dressing heavy feeders like cabbage and Chinese cabbage.

**Weeds:** Cabbage and Chinese cabbage have a dense, shallow root system, and weed competition can be harmful to crop development and head quality, uniformity of maturity and head size. Elimination of weeds (by hoeing or hand pulling) early in the season is recommended. Shallow soil cultivation is useful when the crop is young to decrease weed pressure, although cultivating too deep can injure the root system. Plastic mulch will control most weeds; hand pull any remaining weeds, especially those growing in the planting holes.

**Insect pests and diseases:** Cabbages are susceptible to some foliar and fungal diseases (e.g., root rot, Fusarium yellows or wilt, and powdery or downy mildew), bacterial diseases (black rot, head rot), and physiological disorders (tipburn). Common insect pests include aphids, caterpillars and whiteflies. It is recommended to cover transplants with row cover to reduce pest pressure. 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 using mulch, avoiding overhead irrigation, adequate spacing of plants, crop rotation and weed control. See Table 3 to aid in diagnosis and management of some common cabbage and Chinese cabbage insect pests and diseases.

**Table 3. Organic and Natural Management for Common Insect Pests and Diseases of Cabbage and Chinese Cabbage**

Symptoms	Diagnosis	Organic and Natural Management
<ul style="list-style-type: none"> <li>• Warm, humid conditions</li> <li>• Circular, water-soaked spots on foliage</li> <li>• Stunted seedlings</li> <li>• Plant death</li> </ul>	Alternaria leaf spot	<ul style="list-style-type: none"> <li>• Crop rotation</li> <li>• Plant resistant varieties</li> <li>• Avoid overhead irrigation</li> <li>• Avoid working in fields when plants are wet</li> <li>• Reduce plant stress</li> <li>• Copper-based fungicide sprays</li> </ul>
<ul style="list-style-type: none"> <li>• Curled and yellowed leaves</li> <li>• Stunted crops</li> <li>• Sticky honeydew on leaves</li> </ul>	Aphids	<ul style="list-style-type: none"> <li>• Timely planting and harvest</li> <li>• Reduce water stress</li> <li>• Weed control</li> <li>• Use water jet to dislodge</li> <li>• Reflective mulches; insect barrier fabric</li> <li>• Beneficial insects: lady bugs, lacewings, predatory stink bugs, syrphid flies</li> <li>• Insecticidal soap, neem oil, pyrethrin, Azera, garlic juice extracts</li> </ul>
<ul style="list-style-type: none"> <li>• Bacteria causes black veins and stem</li> <li>• Leaves with yellow margins</li> <li>• Leaf drop</li> </ul>	Black rot	<ul style="list-style-type: none"> <li>• Crop rotation (3 years)</li> <li>• Plant resistant varieties</li> <li>• Hot water seed treatment to eradicate bacteria</li> <li>• Increase plant spacing and soil drainage</li> <li>• Remove diseased plant debris</li> <li>• Weed control</li> </ul>
<ul style="list-style-type: none"> <li>• Late spring occurrence</li> <li>• Light green larvae with faint yellow stripes</li> <li>• Holes in leaves and partially eaten</li> </ul>	Caterpillars (cabbage worm, cabbage looper)	<ul style="list-style-type: none"> <li>• Row cover</li> <li>• Hand pick caterpillars</li> <li>• Till under debris after harvest</li> <li>• Organic insecticide if many plants are infested</li> </ul>
<ul style="list-style-type: none"> <li>• Stunted plant roots and top growth</li> <li>• Roots unable to absorb water and nutrients</li> </ul>	Clubroot	<ul style="list-style-type: none"> <li>• Crop rotation</li> <li>• Raise soil pH to 7.2</li> <li>• Maintain high nutrient level in soil</li> <li>• Improve soil drainage</li> <li>• Control weeds.</li> </ul>
<ul style="list-style-type: none"> <li>• Yellow splotches on leaves.</li> <li>• White downy growth on lower surfaces</li> <li>• Damp, cool conditions</li> <li>• Damping off</li> </ul>	Downy mildew	<ul style="list-style-type: none"> <li>• Crop rotation (2+ years)</li> <li>• Plant resistant varieties</li> <li>• Remove plant debris</li> <li>• Weed management</li> <li>• Plant during recommended dates</li> <li>• Reduce leaf moisture by improving air circulation, morning irrigation</li> <li>• Organic/natural fungicides</li> </ul>
<ul style="list-style-type: none"> <li>• Yellowing in lower leaves after transplanting</li> <li>• Wilted leaves, defoliation</li> <li>• Stunting and plant death</li> <li>• Warm weather</li> </ul>	Fusarium yellows or wilt	<ul style="list-style-type: none"> <li>• Plant resistant varieties</li> </ul>

Symptoms	Diagnosis	Organic and Natural Management
<ul style="list-style-type: none"> <li>Bacterial rot in almost mature heads</li> <li>Yellowing leaves</li> <li>Dark brown sunken lesions</li> <li>Leads to soft rot causing mushy heads and foul odor</li> <li>Leaf discoloration</li> <li>High moisture and high temperature</li> </ul>	Head rot	<ul style="list-style-type: none"> <li>Improve air circulation</li> <li>Adequate calcium and boron in soil</li> <li>Remove diseased plant debris</li> <li>Control weeds</li> <li>Crop rotation</li> <li>Avoid overhead irrigation</li> <li>Organic/natural fungicides</li> </ul>
<ul style="list-style-type: none"> <li>Soil deficient in boron</li> <li>Plant spacing too wide</li> <li>Curled leaves, deformed foliage</li> <li>Brown heads</li> <li>Hollow stem centers</li> </ul>	Hollow stem	<ul style="list-style-type: none"> <li>Plant resistant varieties</li> <li>Maintain adequate boron levels in soil</li> <li>Plant crops at recommended widths</li> </ul>
<ul style="list-style-type: none"> <li>Fungus found in water-logged, compacted soil</li> <li>Wet soil at plant base</li> <li>Purple discoloration in older leaves</li> <li>Purple stem canker</li> <li>Late summer, early fall</li> <li>Stunted plants; off-color</li> <li>Plant wilt and death</li> </ul>	Phytophthora root rot	<ul style="list-style-type: none"> <li>Reduce soil compaction</li> <li>Improve soil drainage, add compost</li> <li>Maintain soil fertility</li> <li>Plant resistant varieties</li> <li>Remove diseased plants</li> <li>Phosphorus-containing fungicides</li> </ul>
<ul style="list-style-type: none"> <li>Small, round white spots with fungal growth on older leaves with dark mottled underside</li> <li>Leaves covered with talc-like powder; leaf yellows and dies</li> <li>Hot, dry conditions</li> </ul>	Powdery mildew	<ul style="list-style-type: none"> <li>Plant resistant varieties</li> <li>Good soil health and air circulation</li> <li>Increase plant spacing</li> <li>Eliminate weeds</li> <li>Fungicides containing sulfur</li> </ul>
<ul style="list-style-type: none"> <li>Leaf discoloration and wilt</li> <li>Tiny white flies flutter when plants are disturbed</li> <li>Sticky honeydew on leaves</li> <li>Black sooty mold fungus</li> </ul>	Whiteflies	<ul style="list-style-type: none"> <li>Regular monitoring of plants</li> <li>Crop rotation</li> <li>Insect netting (50+ mesh)</li> <li>Beneficial insects: lacewings, parasitic wasp, predatory mite</li> <li>Insecticidal soap, neem oil, <i>Chromobacterium</i>, <i>Beauveria bassiana</i></li> </ul>

Note: Table adapted from Texas A&M AgriLife Extension, UMass Extension Vegetable Program, 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

Green and red cabbage and headed-type Chinese cabbages should be harvested when the heads are firm, the outer leaf begins to fold back and are the expected size for that particular cultivar. Nonheading type Chinese cabbage (like Pak Choi) should be harvested when the stems swell into a vase shape. Cut the underside of the cabbage root at or just below the soil line with a sharp harvest knife, leaving no stem or root attached to the head. Head cabbage plants may produce a second head. After harvest, the crop needs to be cooled down to remove field heat and placed in

a refrigerator or cooler where there is high humidity. Removing field heat will avoid moisture loss and wilting and preserve quality and shelf life.

At an ideal storage temperature of 32 F with high humidity (95-100%), the crop will last 3-6 weeks for young cabbage or 2-3 months for Chinese cabbage. Cabbage will have a sweeter flavor after a light frost.

Cabbage can be preserved by fermenting into dishes like sauerkraut and kimchi.

## Nutrition

### Cabbage Is Nutritious and Good for You

Very high in vitamin C

*Important for bones, skin and blood vessels.*

High in potassium

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

Rich in vitamin A

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

Provides calcium, iron and dietary fiber

*Bone health, produces red blood cells, important for bowel health.*

# Recipes

**Basics of cooking with cabbage:** [extension.purdue.edu/foodlink/food.php?food=cabbage](https://extension.purdue.edu/foodlink/food.php?food=cabbage)

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

**Video on how to prepare cabbage:** [youtu.be/UprRYpgr3n4](https://youtu.be/UprRYpgr3n4)

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

## Taste Test Ideas



**Coleslaw**



**Sautéed Cabbage Stir Fry**



**Cabbage Rolls or Stuffed Cabbage Leaves**

## Other websites with many cabbage recipes:

**Oregon State University's  
Food Hero**

[foodhero.org/recipes/category/1295](https://foodhero.org/recipes/category/1295)

Recipes include ramen cabbage salad, salad in a bag and more.

**USDA MyPlate Kitchen**

Visit [www.myplate.gov/myplate-kitchen/recipes](https://www.myplate.gov/myplate-kitchen/recipes) and search for cabbage recipes.

**California's Eat Fresh**

Visit [eatfresh.org/find-a-recipe](https://eatfresh.org/find-a-recipe) and search for cabbage recipes.

**Produce for Better  
Health Foundation**

[fruitsandveggies.org/fruits-and-veggies/green-cabbage/?view=recipes](https://fruitsandveggies.org/fruits-and-veggies/green-cabbage/?view=recipes)

Recipes include southwestern coleslaw, fish tacos and more.

# Louisiana HARVEST of the MONTH

## Cajun Peper Cabbage

### Home Recipe

Serves: 6

Prep Time: 20 minutes

Cook Time: 35 minutes

### Ingredients

- 1 small head of cabbage, cut into small pieces
- $\frac{1}{8}$  tsp oregano
- $\frac{1}{8}$  tsp salt
- $\frac{1}{2}$  tsp Cajun seasoning
- $\frac{1}{4}$  tsp black pepper
- $\frac{1}{4}$  tsp cayenne pepper
- 1 Tbsp chopped jalapeno pepper
- $\frac{1}{3}$  cup chopped yellow onion
- $\frac{1}{3}$  cup chopped green bell pepper
- 2 Tbsp unsalted butter

### Nutrients Per 1 Cup Serving

- |                 |                 |
|-----------------|-----------------|
| • Calories      | 80              |
| • Total Fat     | 4 g             |
| • Saturated Fat | 2.5 g           |
| • Cholesterol   | 10 mg           |
| • Sodium        | 180 mg          |
| • Carbohydrates | 11 g            |
| • Dietary Fiber | 5 g             |
| • Protein       | 2 g             |
| • Vitamin C     | 56 mg (110% DV) |
| • Vitamin K     | 162 mg (6% DV)  |
| • Calcium       | 78 mg (6% DV)   |

### Cooking Instructions

1. Cut the cabbage in half, and, with the cut side down, slice it as thinly as possible around the core, as though you were making coleslaw. Discard the core.
2. Toss the cabbage with the rest of the ingredients except the butter.
3. Melt the butter in a large sauté pan or heavy-bottomed pot over medium-high heat.
4. Add the cabbage mixture and sauté for 10 to 15 minutes, stirring occasionally, until the cabbage is tender and begins to brown. Season to taste and serve warm.



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



**For More Information**  
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