

Home Gardening Series

Cabbage

Craig R. Andersen
Associate Professor

Environment

Light – sunny
Soil – well-drained
Fertility – rich
pH – 6.0 to 6.5
Temperature – cool
Moisture – keep moist

Culture

Planting – transplant early spring and late summer
Spacing – 15-18 x 30-36 inches
Hardiness – hardy biennial
Fertilizer – medium-heavy feeder



Cabbage

Cabbage is an ancient and important vegetable. It is a member of the mustard family, which includes mustard, radish and many Oriental vegetables. It has been cultivated since at least 2500 B.C., with several varieties known to the Greeks and Romans. Its wild ancestor the colewort, a weedy perennial of the seacoasts of Great Britain and southwestern Europe, still exists. The name cabbage is derived from an old French word for head “caboche.” A great variety of cultivated forms have arisen either by selection or mutation from this plant. Although best adapted to the Mediterranean type of climate, they grow from the arctic to the subtropics.

Cabbage is a hardy vegetable that grows well in fertile soil. There are several types of cabbage: pointed, flat, red or green and savoy. Cabbage is

easy to grow if suitable varieties are selected and proper culture and insect management practices are followed. It is also a good source of vitamins A and C and calcium. Cabbage thrives in both the spring and fall. It tolerates frost to 24 degrees F but not heat. Cabbage is used in slaw, salads, sauerkraut and cooked dishes.

Cultural Practices

Locally grown transplants can be purchased or you can produce your own. Start them in growing structures four to six weeks before the first date when plants can be set out, or sow a few seeds in the cold frame or garden every month to have cabbage plants after that. It takes four or five weeks to grow plants from seed to transplant during the summer months. It is best not to plant cabbage family crops in the same spot year after year, since diseases and insect pests build up. Rotate crops within your garden.

*Arkansas Is
Our Campus*

Visit our web site at:
<https://www.uaex.uada.edu>

Cultivars

Cultivar	Days to Maturity	Plants/ 100 Ft of Row	Disease Resistance or Tolerance	Remarks
Stonehead Hybrid	60	66	Fusarium yellows	All-American Selection, very compact and solid head.
Gourmet Hybrid	63	66	Fusarium yellows	Vigorous and well-adapted hybrid.
Savoy King Hybrid	82	66		All-American Selection, vigorous and excellent quality savoy hybrid.
Resistant Golden Acre	64	66	Fusarium yellows	Widely adapted, open-pollinated variety.
Savoy Ace	77	66		All-American Selection, 3- to 4-pound savoyed dark green leaves.
Red Acre	75	66		Three-pound red head.

Plant spacing affects head size. Cabbage can be harvested when it reaches adequate size, depending on variety and growing conditions. Firm heads are preferred, especially for storage.

Planting Time

Transplant spring cabbage early enough so it matures before the heat of summer. Plant six weeks before the last hard freeze date. This is about February 1-15 in south Arkansas, February 7-21 in central Arkansas and February 21 to March 7 in north Arkansas. Many varieties are available, and two or three varieties provide harvest over a long period. Hardened plants are tolerant of frost and can be among the earliest planted garden vegetables. Cabbage is easily transplanted from either bare-rooted or container-grown plants. Late cabbage must be started during the heat of midsummer, but it develops its main head during the cool weather of fall. It may be transplanted or seeded directly in the garden.

Green cabbage is generally preferred to the red or savoy types, but red cabbage is becoming increasingly popular for color in salads and cooked dishes. The savoy varieties are grown for slaw and salads. The later-maturing varieties usually grow large heads and are more suitable for making sauerkraut than the earlier varieties.

Spacing and Depth of Planting

Space plants 15 to 18 inches apart in the row depending upon the variety and the size of head needed. Plant spacing affects head size – the closer the spacing, the smaller the heads. Many growers have discovered that two rows can be planted 12 inches apart on a bed if the plants are staggered on the bed. Early varieties are usually planted 9 to 12 inches apart; late varieties are planted 15 to 18 inches apart within rows. Early varieties produce

one- to three-pound heads, and late varieties produce four- to eight-pound heads. Sow cabbage seed 1/4- to 1/2-inch deep. Keep the seed moist, and thin or transplant the seedlings to the desired spacing. The removed plants may be transplanted to another row.

Care

When transplanting, use 8 ounces per plant of a starter fertilizer solution (1 tablespoon of 20-20-20 per gallon of water). Later, side-dress the plants with a nitrogen fertilizer (10-20-10 or 13-13-13) when they are half grown. On sandy soils or after periods of excessive rain, fertilize every three weeks. Use shallow cultivation and mulches to control weeds. Ample soil moisture is necessary to produce good cabbage. Irrigation is especially important in a fall planting for starting the plants and developing the heads.

Harvesting

Cabbage can be harvested any time after the head develops. Cut the cabbage heads when they are solid (firm to hand pressure) but before they crack or split. Cabbage for storage must be firm, mature and free of injury from insects or diseases. Late cabbage varieties store better than the early ones. Cabbage should be stored under cool, moist conditions.

Besides harvesting the mature heads of the spring-planted cabbage, a late crop of small heads (cabbage sprouts) can be harvested. These sprouts develop on the stumps of the cut stems. Cut as close to the head as possible, leaving the loose outer leaves intact. Buds form in the axils of these leaves (the angle between the base of the leaf and the stem above it) that will later develop into sprouts. The sprouts develop to 2 to 4 inches in diameter and should be picked when firm. Continue control of cabbage worms and other pests.

Common Problems

Diseases

Yellows or fusarium wilt is a common disease. The first sign of the disease is yellowing and browning of the lower leaves. The plant will be stunted before wilting occurs. Grow varieties resistant to yellows.

Blackleg and blackrot are two bacterial diseases that cause severe losses. The plant may be stunted, turn yellow and die. The taproot often rots away. Blackleg is named for the black cankers on the stem. Blackrot can be recognized by large, V-shaped, yellow-to-brown areas in the leaves, starting at the leaf edge. The veins turn black. Soft rot usually follows blackrot infection. Control of the diseases blackleg and blackrot is essentially the same. Both diseases are spread by seeds, transplants and insects. Buy seeds that have been treated with hot water to kill the disease organism. Do not buy transplants that are wilted, are an unhealthy shade of green or have black spots on the stems or leaves. If possible, grow blackrot-resistant varieties.

When diseased plants are found in the garden, collect the entire plant and dispose of it. Do not put diseased plants in the compost pile. Avoid cultural practices (crowding, overwatering, planting in poorly drained soil and inadequate insect control) that support blackrot and blackleg disease organisms.

Insects

Aphids – Apply a suggested insecticide before cabbage begins to head.

Flea beetles – Apply a suggested insecticide.

Cabbage worms – Three species of cabbage worms (imported cabbage worm, cabbage looper and diamondback worm) commonly attack the leaves and heads of cabbage and related cole crops in Arkansas. Imported cabbage worms are velvety green caterpillars. The cabbage looper crawls by doubling up (to form a loop) and then moves the front of its body forward. The moth is brown and is most active at night. Diamondback worms are small, pale green caterpillars that are pointed on both ends. The moth is gray with diamond-shaped markings when the wings are closed.

Larval or worm stages of these insects cause damage by eating holes in leaves and cabbage heads. The adult moths or butterflies lay their eggs on the leaves but otherwise do not cause damage to the plant. The worms are not easy to see because they are very small and blend in with the cabbage leaves.

Cabbage worms are quite destructive and can ruin a crop if not controlled. They are more destructive in fall gardens than in spring gardens. Loopers, a severe pest of cabbage, are easy to control using the biological insecticide *Bacillus thuringiensis* (B.t.). This material gives excellent control of worms and can be used with complete safety around the home garden. It is sold under many trade names such as Thuricide, Dipel and B.t. Be sure to use one to two drops of a liquid detergent per gallon of spray mixed to ensure complete wetting of the waxy leaf surface. Protect your plants with suggested biological or chemical insecticides from the time they are transplanted until harvest.

diseases – clubroot, yellows or fusarium wilt, blackleg or black rot, downy mildew

insects – cabbage root maggots, cutworms, imported cabbage worms, cabbage looper worms, flea beetles, aphids

cultural – head cracking or splitting (excessive water uptake and growth near maturity, root prune with spade or trowel or twist stalk to break some roots and reduce water uptake)

Harvesting and Storage

days to maturity – 70 to 100

harvest – when heads become firm (Size varies with variety, fertility and spacing. If unable to harvest at maturity, bend over to break part of the roots to reduce head splitting.)

approximate yields (per 10 feet of row) – 10 to 18 pounds

amount to raise per person – 10 pounds

storage – very cold (32 degrees F), moist (95 percent relative humidity) conditions, 2 to 3 months

preservation – can as sauerkraut

Frequently Asked Questions

- Q. What can I do to prevent my cabbage heads from splitting?**
- A. Splitting is caused by the pressure of excessive water taken up after the heads are solid. Cutting the roots or breaking the roots often reduces excessive splitting or bursting.
- Q. What causes cabbage to develop seed stalks instead of solid heads?**
- A. Cabbage plants “bolt” (form premature seed stalks) when started too early and exposed to low temperatures (35 to 45 degrees F) for extended periods.

Q. What causes cabbage heads to be loose and puffy instead of firm and hard?

A. Some varieties of cabbage just produce a looser, less dense head than others. This condition is generally associated with improper growing conditions. Cabbage grows best when planted in time to head while daytime temperatures are under 80 degrees F. Overfertilization, improper water conditions and heat can cause loose, puffy heads.

Q. I often have trouble getting my cabbage to form a head. What is wrong?

A. Cabbage and all members of the cabbage family, such as cauliflower and broccoli, require cool temperatures, adequate moisture and high fertility to produce high yields of quality produce. Any condition that results in stunting or stress on the plants during the growing period can result in some degree of crop failure.

Q. What is savoy cabbage?

A. Savoy cabbage is a crinkled or crumpled leaf variety. It is cultivated and harvested the same as common types of cabbage. It is commonly used fresh in salads or coleslaw.

Q. What causes the dark or black areas on the margins of the leaves inside cabbage heads?

A. The description is similar to internal tip burn. Tip burn has been related to low soil moisture, high fertility and calcium deficiency. To avoid this problem, maintain adequate fertility, especially during formation of the cabbage head, and avoid excessive fertilization near maturity. Have a soil test completed for the garden and check the soil pH. The minimum soil pH for cabbage is 6.0.

Q. What are these inch worms that are literally destroying my cabbage?

A. Cabbage and related vegetable crops are bothered by many different types of worms; chances are these are cabbage loopers. Loopers, a severe pest of cabbage, are easy to control using the biological insecticide *Bacillus thuringiensis* (B.t.). This material gives excellent control of worms and can be used with complete safety around the home. It is sold under many trade names such as Thuricide, Dipel and B.t. Be sure to use one to two drops of a liquid detergent per gallon of spray mixed to ensure complete wetting of the waxy leaf surface. This is a well-established method of "organic" vegetable production.

Q. Could you please tell me how to control the green velvety worms that get in my cabbage?

A. These may be imported cabbage worms or perhaps head worms. Whatever the type of worm, satisfactory control can be obtained using a product containing *Bacillus thuringiensis*. This is a biological insecticide that gives excellent control for most types of worms. For this material to be effective, it must be applied when the worms are very small because the worm kill is not immediate. This is a safe insecticide that can be used to control most types of worms on most commonly grown garden vegetables. Use one to two drops of a liquid detergent per gallon of spray mixed to ensure complete wetting of the waxy leaf surface. Use approved insecticides only as directed by the label.

Printed by University of Arkansas Cooperative Extension Service Printing Services.

DR. CRAIG R. ANDERSEN is associate professor, Department of Horticulture, University of Arkansas Division of Agriculture, Fayetteville.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director, Cooperative Extension Service, University of Arkansas. The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, gender, age, disability, marital or veteran status, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.