



Easy Gardening

COLE CROPS • COLE CROPS • COLE CROPS • COLE

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Cole crops include broccoli, cabbage, cauliflower, and Brussels sprouts. They are all cool-season crops that can be grown successfully in most Texas home gardens if the right varieties are planted at the right time.

Brussels sprouts and cauliflower are the hardest to grow, while broccoli and cabbage are the easiest. For most gardens, broccoli is an ideal choice because it produces quickly, and each plant can be harvested several times.

Site selection

Cole crops do best in full sunlight when grown in sandy loam soils with lots of organic matter. They prefer soils with a pH of 6 to 6.5; yield will be reduced if the soil pH is below 6.

Soil preparation

Add a 3-inch layer of organic matter—such as compost, leaves, or grass clip-

pings—to the garden soil and turn it in a few weeks before planting. This will give the leaves or grass clippings time to decompose and release nutrients into the soil before planting. Dig the soil as deep as a garden spade or shovel will reach, usually 10 to 12 inches. Turn the organic matter under the soil as soon as possible after application.

Fertilizing

Have your soil tested every 3 to 4 years to determine how rich it is or what nutrients it is lacking. Soils in East Texas usually are very acidic, while soils in South and West Texas usually are alkaline, and soils on the plains usually have plenty of potassium. If you do not have your soil tested, apply about 1 to 2 pounds of a complete fertilizer (such as 10-20-10) for each 100 square feet or about 30 feet of row to be planted. Spread the fertilizer over the soil surface after the soil is dug. Then mix the fertilizer into the soil 2 to 3 inches with a rake or tiller.

After fertilizing, bed the soil by pulling it into ridges 12 inches wide, 6 to 8 inches high, and 36 inches apart (center to center). This is necessary for good drainage. Creating raised beds is most important in heavier soils as they do not drain very well. Bedding the soil also mixes the fertilizer into the row where plants can reach it. Apply more fertilizer as the plants grow during the season.

Varieties

Several varieties work well for Texas gardeners, including:

Broccoli

- Arcadia
- Bonanza
- Green Comet
- Green Magic
- Packman
- Premium Crop
- Southern Comet

Brussels Sprouts

- Diablo
- Jade Cross
- Royal Marvel
- Tasty Nugget

Cabbage

- Early Jersey Wakefield
- Golden Acre
- Green Boy
- Market Prize
- Rio Verde
- Ruby Ball
- Savoy King

Chinese Cabbage

- Brisk Green
- Jade Pagoda
- Michihili
- Monument

Cauliflower

- Alverda (Green)
- Brocuverde (Caul/Broc hybrid)
- Imperial
- Majestic
- Snow Crown
- Snowball Y Improved
- Violet Queen (Purple)

Planting

Most cole crops need 18 to 24 inches between plants and 36 inches between rows. Broccoli spaced too closely will have small heads and fewer side sprouts. Cauliflower and cabbage can easily spread 2 feet if well fertilized. Space Brussels sprout plants 14 to 18 inches apart because they grow more upright (Fig. 1.).



Figure 1. Space broccoli and Brussels sprouts 14 to 18 inches apart. Space cauliflower and cabbage 24 inches apart. Plant radishes or greens between the young plants.

Broccoli, cauliflower and cabbage can be grown in both spring and fall, but fall planting often is more successful because very early spring planting is often delayed by wet or cold weather. Delayed spring planting exposes plants to too-hot weather before they mature. Variety selection is very important because early-maturing varieties usually are the most successful. In areas south of Region II (Fig. 2), Brussels sprouts should be grown only as a fall crop

because they will not mature before summer temperatures get too hot. Brussels sprouts are the most cold tolerant of the cole crops.

Start with good transplants, which can be bought from a nursery or garden center. If you want to grow your own transplants, plant seeds in peat pots or similar containers about 3 to 4 weeks before the fall crop or 6 weeks before the spring crop is to be transplanted. By growing plants from seed, you will have many more varieties to select from and at the time you want them. Experienced home gardeners plant seed for the fall crop directly into the garden and thin the plants after they come up. The small plants can be transplanted to other spots in your garden or to a neighbor's garden.

Transplant cole crops to the garden according to the following dates:

Region	Spring	Fall
I	Mar. 1 – Apr. 7	July 15 – Aug. 1
II	Feb. 15 – Mar. 20	Aug. 1 – Aug. 20
III	Feb. 1 – Mar. 5	Aug. 20 – Sep. 20
IV	Jan. 15 – Feb. 20	Oct. 1 – Oct. 20
V	Jan. 1 – Feb. 1	Nov. 1 – Nov. 20

Gardening regions of Texas are shown in Figure 2.

Be sure to acclimate the transplants to the cold of early spring or heat of early fall before transplanting. Broccoli and cabbage



Figure 2. Texas gardening regions.

will survive temperatures as low as 25 degrees F when properly conditioned, and Brussels sprouts will survive 20 degrees F or lower if the temperature drops gradually.

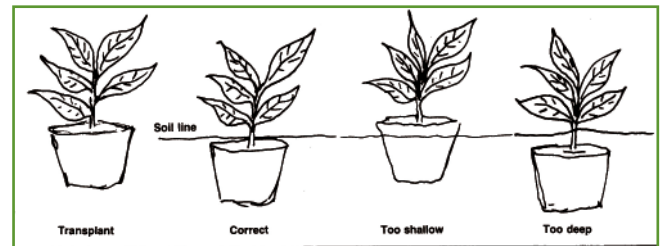


Figure 3. Correct planting depth.

Set the transplant in the garden at about the same depth it was in the pot. Be sure peat pots are moist and not exposed to air after planting. If cole crops are covered too deeply, the stems will rot (Fig. 3.)

Care during the season

Keep soil moist but not soaked. Mulch with a dark-colored plastic cover or compost in the spring or a white plastic cover, dried grass clippings, or leaves in the fall. Mulch helps reduce the need for water, controls weeds, and regulates soil temperatures.

Do not hoe too deep or too close to the plants to avoid damaging the shallow root system. About 4 weeks after transplanting, apply 1 pound of fertilizer for each 30 feet of row beside







Photo: Bruce Patty Leander

Figure 4. Cauliflower with leaves tied over the head (blanched).

the plants. Water the fertilizer into the soil. Another application usually is needed about 4 weeks later. If nitrogen fertilizer such as ammonium nitrate or ammonium sulfate is used, apply 1 cup per 30 feet of row.

When the cauliflower head can be seen easily, gather the longest leaves together over the head and tie them with a rubber band or soft twine (Fig. 4.) This is called blanching. It shades the head and prevents it from becoming yellowish green in color. Check plants often for insect damage after blanching. The head should be ready to harvest 8 to 10 days after blanching.

Insects

Name and description		Control
 <p data-bbox="212 1209 298 1241">Aphid</p>	<p data-bbox="410 1024 740 1247">½ inch long; soft-bodied; green, pink, red, brown or powdery blue; usually on undersides of leaves; sucks plant juices; may be covered with a fine whitish wax.</p>	<p data-bbox="773 1024 1003 1184">malathion garlic juice extracts neem oil pyrethrins azadirachtin</p>
 <p data-bbox="159 1419 354 1451">Harlequin bug</p>	<p data-bbox="410 1287 740 1383">Adult and nymph; black and yellow; shield shaped; sucks juices from plants.</p>	<p data-bbox="773 1287 1003 1415">Sevin® azadirachtin garlic juice extracts pyrethrins</p>
 <p data-bbox="147 1623 365 1654">Cabbage looper</p>	<p data-bbox="410 1491 740 1644">Up to 1½ inches long; pale green with light stripe down back; doubles up or loops when it crawls; chews leaves.</p>	<p data-bbox="773 1491 1003 1587">Bt garlic juice extracts pyrethrins</p>
 <p data-bbox="152 1883 358 1948">Imported cabbage worm</p>	<p data-bbox="410 1694 740 1854">Up to 1¼ inches long; velvety green with three faint gold stripes on back; chews ragged holes in leaves; bores into head.</p> <p data-bbox="410 1927 708 1948"><small>Photo—James Dill, University of Maine</small></p>	<p data-bbox="773 1694 1003 1814">Bt spinosad garlic juice extracts pyrethrins</p>

Before using a pesticide, read the label. Use it in strict accordance with cautions, warnings and directions.

Diseases

There are a few diseases of concern when growing cole crops, but there are some practices that will help keep disease pressure down. Rotate crops every year. Do not plant the same crops or crops of the same family in the same place more than once every 3 to 4 years. Leave plenty of space between plants to reduce disease problems. If you have trouble with diseases on cole crops, ask your county Extension agent about disease control.

Harvesting

Cauliflower. Cut center heads when they are tight. Overly mature heads become open and loose, and flowers begin to open.

Broccoli. Cut center heads when the very first flower shows the slightest yellow color. Leave side sprouts for later harvest.

Brussels sprouts. Sprouts appear between leaves and the main stem on lower leaves first. They must have cool weather for best quality. When the sprouts are about 1 inch in diameter and the lower leaves begin to turn yellow, cut off lower leaves and remove sprouts with your fingers or a knife. New sprouts form higher up the stem as the plant grows.

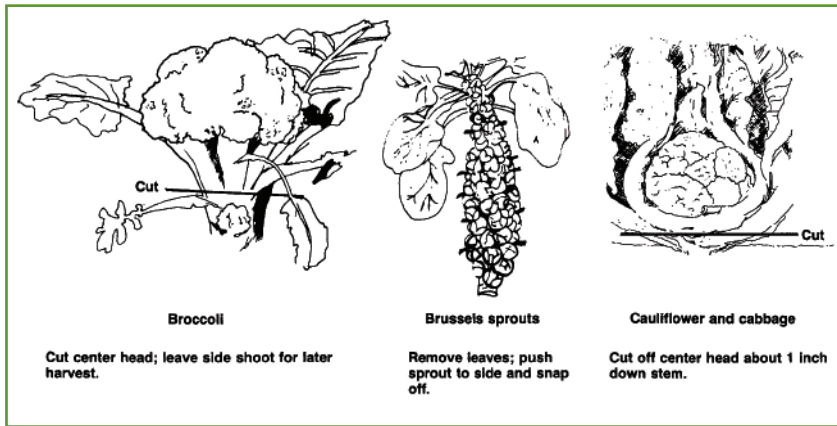


Figure 5. Proper harvesting.

Cabbage. Harvest when the head becomes firm. This can be tested by pressing with the thumb in the center of the head.

Broccoli, cauliflower and Brussels sprouts must be harvested as soon as they are ready (Fig. 5.) Delayed harvest results in tough, poor quality produce. Cabbage holds longer in the garden after maturity. Cabbage plants left undisturbed after harvest sometimes develop small sprouts similar to Brussels sprouts near the cut surface. This usually is not enough to justify leaving the plants, especially in small gardens.

Serving

Cole crops are a good source of protein, minerals and vitamins when properly prepared. Broccoli, cauliflower, and Brussels sprouts can be served raw in salads or cooked. Steamed or mashed cauliflower or broccoli is a good warm dish for cold days. Cabbage is served cooked, raw in cole slaw, or processed into sauerkraut. Ask your county Extension agent for information on preparing and serving cole crops.

Cleanup

Spring cole crops can be followed by summer crops such as southern peas, okra, beans, cucumber, and cantaloupes. Turn leaves and trimmings from cole crops under the soil. Compost large stems.

Acknowledgments

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