

CABBAGE, BROCCOLI AND CAULIFLOWER

Vegetable Gardens



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Cabbage, broccoli, and cauliflower are members of the same plant family. They are often called the cole crops. Although they have been grown for centuries, consumers have “rediscovered” the cabbage family in recent years. In fact, few vegetables have equaled their rapid rise in consumption.

Nutritional Value and Uses

These crops are excellent sources of vitamins A and C, as well as calcium and iron. Fresh broccoli, cauliflower and cabbage “wedges” are becoming increasingly popular as salad vegetables and served with dips on vegetable trays. They are easily frozen for later use with little loss of texture or quality. Their distinctive flavor, attractive color, and pleasing texture make them popular in meal planning. Nutrition-conscious consumers realize the nutritional value, limited calories, and high fiber content of the cabbage family.

Growing Site and Fertilization

Cole crops grow in a wide variety of soil types, but their shallow root system —18 to 24 inches— requires high levels of fertility as well as adequate water in the root zone. Adding organic materials is especially useful for growing the cole crops since it improves soil looseness and workability, and adds nutrients to the soil. Apply all-purpose garden fertilizer incorporated into the upper 5 or 6 inches of the soil before planting. About 5 to 6 cups per 50 feet of row should be used. Fertilizer should be applied along the row as the crop grows, to replace fertilizer used by the crop or washed from the root zone by spring rainfall. Several cups of fertilizer, especially one high in nitrogen, should be sprinkled along 50 feet of row about 3 or 4 inches from the row about three weeks after planting. In

another two weeks, repeat the process if heavy rainfall occurs or if your soil is sandy.

Planting the Spring Crop

The cole crops are cool-season vegetables. They can withstand light frosts, if plants have been exposed to cold temperatures. Plant them early, usually mid- to late March in eastern or central Kansas. They are usually grown from purchased transplants in order to produce heads before the hot summer weather overtakes them.

Cabbage and broccoli are slightly more cold tolerant and can be planted earlier than cauliflower. Also, most varieties of cauliflower take one to two weeks longer to develop, making it the most difficult of the three to produce a reliable spring crop.

Leave as much of the root system intact as possible when transplanting and set the plants slightly deeper than the container in which they grew. The use of starter-fertilizer solution is beneficial to encourage early growth (see K-State Research & Extension bulletin *The Kansas Garden Guide*, S51, for further discussion of starter fertilizer solutions).

Space broccoli and cabbage plants 12 inches apart in rows two to three feet apart. Cauliflower, a larger plant, needs to be set 18 inches apart in 2- to 3-foot rows.

Varieties

Since the crop must be harvested before the hot summer weather begins, early maturing varieties are important for success. Many excellent early hybrid varieties are available in all of these crops. Some varieties that have performed well in K-State research trials are:

Cabbage	Headstart Golden Acre or improved types Emerald Cross Conquest
	Red: Red Acre Ruby
	Savoy (Crinkled Leaf): Savoy Ace
Broccoli	Green Comet (early, good side shoots) Packman Premium Crop (later, tight head)
Cauliflower	Snow Crown (early, uniform) Early Snowball types Burpeeana

As They Grow

Apply fertilizer as the crops grow. Another important practice is to apply water in periods of drought. One inch of water per week is sufficient when rainfall is not available. Since the root system is shallow, be careful hoeing so you do not damage plant roots.

Cauliflower must be bleached or blanched to produce a pure white head. Blanching consists of pulling some of the larger leaves over the small head when they are 2 to 3 inches in diameter and securing them with twine or rubber bands. Failure to blanch will result in discolored heads often with a bitter, disagreeable flavor. Although some self-blanching varieties are available, they cannot be relied upon to bleach themselves in our warm Kansas spring weather, and they mature later in the season.

Harvest

Broccoli and cabbage may be ready for harvest from early to mid-June. Early maturing broccoli will produce additional crops of small side shoots until hot weather develops. Cauliflower will be ready for harvest slightly later, usually in mid- to late June.

Five to 10 plants of each of the cole crops will usually provide adequate heads for fresh use. Additional plants will be needed for freezing purposes. An approximate yield one may expect:

Cabbage - 20 lbs/10 ft of row

Broccoli - 6 lbs/10 ft of row

Cauliflower - 10 lbs/10 ft of row

Harvest cabbage when the heads are firm. Press the head with your thumb to test for firmness. Heads that are firm may split open if a sudden rain or watering follows a dry period.

Harvest broccoli while heads are tight and before buds open to reveal the yellow petals just emerging. Even a day's delay may be critical: Overmature heads lose quality and nutritional value.

Cut cauliflower when the heads are 5 to 6 inches in diameter, while the heads are still tight. As the flower buds, called curds, begin to separate, the head is past its peak. Overmature heads are coarse and grainy in texture.

Fall Plantings

Garden space vacated by the spring crop can be planted to warm-season vegetables such as squash, melons, sweet corn, or green beans. However, it is also possible to plant a second crop of cole crops to grow in our cool Kansas autumn season. Fall crops can be planted from seed directly in rows and thinned to the suggested spacings. Seeding should be done in early to mid-July. Transplants can be started in a cooler, protected location for later planting in the garden by seeding into pots about the same time.

Pests

Cabbage worms are the most serious pest problem for cole crops. There are three separate insects—imported cabbage worms, cabbage loopers, and diamond back moths—that can attack cabbage family plants. We generally refer to them all as cabbage worms. The control measures are the same. Worms become more active as temperatures increase in the spring. Look at your plants every few days. The worms are small and green, the same color as the leaves. They usually are hidden in the dense foliage, so look closely.

Several chemicals can be used for control. A popular control measure is a bacterial spray material—sold under several brand names—containing *Bacillus thurengensis*, which is deadly to the worm but harmless to humans. A slow, gradual death of the worms results and the material can be used safely, even during the harvest season.

Aphids, cutworms, and other pests that may attack these crops and their control measures are discussed in the K-State Research & Extension circular, *Pest Control in Vegetable Gardens*, C-595

Diseases

Diseases are usually not a problem in Kansas. Serious disease problems often result in fungus contaminated soil where these crops have been grown for many years. Using treated seed from a reliable seed dealer, rotating the crops around the garden area, and cleaning up plant debris or residue immediately after harvest will usually control serious disease problems. See the pest control publication for additional discussion of disease control.

Storage

These crops can be stored in a cold (32° to 35°F) moist storage area for later use. Broccoli can be stored successfully for five or six days, but cauliflower can be stored two to three weeks and cabbage even longer.

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