

## Broccoli

### PLANTING

Broccoli (*Brassica oleracea*, Italica Group) is a cool-season vegetable that prefers average temperatures of 65 to 75 F for best growth. Cole crops will “bolt” or produce a flower stalk if exposed to a prolonged cold period of 10 or more continuous days of temperatures between 35 and 50 F following a favorable growing period. The larger the plants are at the time of exposure to the cold period, the higher the incidence of bolting. However, sensitivity to bolting depends on the variety. When planted in the spring, broccoli must be planted early enough to ensure that it is harvested before temperatures become too hot.

Buy transplants locally or produce your own. Direct seeding is possible, especially for the fall crop. Transplants can be produced in about six to eight weeks for the spring and in about five to six weeks for the fall crop. When growing transplants in the spring, give them sufficient cold to harden off, but protect them from temperatures below freezing.

Broccoli should be planted in rows that are 3 feet apart. Space the plants 1 ½ to 2 feet apart in the row.

TRANSPLANTING DATES		
Area	Spring	Fall
Piedmont	Mar. 1-15	July 1-30
Central	Feb. 20-Mar. 10	July 20-Aug. 15
Coastal	Feb. 15-Mar 1	Aug 10-Sept. 15

Broccoli should be planted in rows that are 3 feet apart. Broccoli should be spaced 1 ½ to 2 feet apart in the row.

### RECOMMENDED CULTIVARS

- Packman is an early season broccoli cultivar. In a planting of Packman, most of the main heads will be ready for harvest at the same time. Packman produces many side shoots.
- Everest is resistant to head rot and downy mildew.
- Premium Crop is a mid-season cultivar that produces large main heads on a large plant. This cultivar produces few side shoots.
- Southern Comet is similar to Packman.

### SOIL

Soils that are well-suited for growing broccoli are fertile, well-drained and have a texture ranging from sandy loam to clay loam. Soil pH is very important. It should be between 5.8 and 6.5 for best growth. Have your garden soil tested several months prior to planting and adjust soil pH according to recommendations.

### FERTILIZING

A soil test is always the best method for determining the fertilization needs of the crop. Information on soil testing is available in the fact sheet HGIC 1652, *Soil Testing*.

Broccoli is a heavy feeder. If a soil test has not been taken, a general fertilizer recommendation would be to apply 5-10-10 at 3 pounds per 100 square feet before planting. Sidedress in about three to four weeks after transplanting when the plants have become established, with ammonium nitrate at 1 pound per hundred feet of row or calcium nitrate at 2 pounds per 100 feet of row. Broccoli that has been direct seeded should receive this second fertilization when plants are at least 6 inches tall. More frequent sidedressings may be required as the growing season continues if the garden is sandy or leaching rains occur. Nitrogen is important for these crops to produce a high-quality product.

## **WATERING**

Water the garden to provide a uniform moisture supply to the crop. The garden should be watered in the morning so that the foliage is dry before nightfall. Water sufficiently to moisten the soil to a depth of at least 6 inches. Light sprinklings will encourage shallow rooting of the plants. The critical periods for moisture are stand establishment and crop maturation. It is important to have a constant uniform moisture supply to produce a high-quality crop and to have the spring crop mature before high summer temperatures.

## **HARVEST AND STORAGE**

Broccoli is ready to harvest 65 to 70 days after planting transplants. Harvest broccoli when the main head is 3 to 6 inches in diameter and the flower buds are still tightly closed. Cut the main stem about 6 inches below the top of the head. Some varieties produce many secondary florets in the axils of the stems after the main head has been harvested. Store in perforated plastic bags for up to a week in the refrigerator. Freeze any surplus.

## **PROBLEMS**

Cole crops will bolt if exposed to a prolonged cold period following a favorable growing period, followed by warm conditions. This is a problem of spring-planted and overwintered crops. The larger the plants are at the time of exposure to the cold period, the higher the incidence of bolting. Lack of nitrogen or other nutrient stresses as well as competition from weeds, insects or diseases that slow vegetative growth can also promote flowering. Some varieties are more susceptible to bolting than are other varieties.

Bolting can be prevented by:

- Maintaining a steady, moderate rate of growth.
- Setting out young, healthy transplants that have not been stressed.
- Watering well when transplanting to start root growth and remove air pockets from the soil.
- Planting at the correct time for your area.
- Growing slow-bolting varieties.

Hollow stem is the most common problem on broccoli. In hollow stem, the main stem is hollow but the inside of the stem is not decayed. This is caused by a combination of factors, including low soil pH. Proper spacing and the application of boron will help reduce the problem.

Another problem that can be serious is tip burn and internal browning. Good soil pH, proper watering and the correct balance between nitrogen and calcium will avoid these problems.

Insect problems include imported cabbageworm, cabbage loopers, diamondback moth larva, corn earworm and cabbage aphids. Flea beetles can severely damage small seedlings. It is important to control the insects before the heads start to develop.

Most diseases are not usually very serious on broccoli, except black rot. Other disease problems include downy mildew, bacterial head rot and soft rot.

More information about growing broccoli is available in HGIC 2202, *Cabbage, Broccoli, and Other Cole Crop Diseases* and HGIC 2203, *Cabbage, Broccoli, and Other Cole Crop Insects*.

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