

## Home Gardening Series

# Broccoli

Craig R. Andersen  
Associate Professor

### Environment

**Light** – sunny  
**Soil** – well-drained  
**Fertility** – medium-rich  
**pH** – 5.6 to 7.0  
**Temperature** – warm  
**Moisture** – average

### Culture

**Planting** – after danger of frost or late summer  
**Spacing** – according to type  
**Hardiness** – hardy annual  
**Fertilizer** – medium to heavy feeder



cabbage family that is high in vitamins A and C. It develops best during cool seasons of the year and is rapidly becoming more popular in Arkansas home gardens.

### Broccoli – *Brassica oleracea* Var. *italica*

Although all *Brassica* are of European and Siberian origin, there is much debate over the exact origin of broccoli. It was first cultivated by the Italians, but many varieties were derived from cauliflower or wild cabbage plants. Broccoli was grown wild before cauliflower and has been known in Europe for 2,000 years. Broccoli was little known in the United States until the 1920s, although it had been grown here for 200 years.

Broccoli (also known as Italian broccoli, sprouting broccoli and calabrese) is a hardy vegetable of the

Broccoli yields continuously over an extended period when it is properly grown and harvested. Two crops per year (spring and fall) may be grown in Arkansas. Transplants are recommended for the best start, especially for the spring crop.

### Cultural Practices

#### Planting Time

Transplant vigorously growing broccoli plants in early spring (February or March). For a fall crop, plant seeds directly in the garden during the first week of August. Buy or grow your transplants and plant them during the first week of September.

*Arkansas Is  
Our Campus*

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

## Cultivars

Cultivar	Days to Maturity	Plants/ 100 Ft of Row	Remarks
Arcadia	69	100	Firm, dark blue, large heads; stress tolerant; resistant to downy mildew, black rot and hollow stem.
Gypsy	62	100	Medium green heads, holds up well in heat, downy mildew resistant.
Goliath Hybrid	55	100	Short variety, early to mature, good yield and quality, large heads.
Premium Crop Hybrid	75	100	All-American winner, medium rate of maturity, good yield and quality, large, tight head.
Green Comet Hybrid	68	100	All-American winner, medium rate of maturity, good yield and quality, large, tight head.
Packman Hybrid	55	100	Early maturing, high yield, medium heads.

## Spacing and Depth of Planting

Plant seeds 1/4 to 1/2 inch deep, or set the transplants slightly deeper than they were originally grown. Plant or thin seedlings 12 to 15 inches apart in the row; allow 36 inches between each row. Broccoli plants grow upright, often reaching a height of 2 1/2 feet.

## Care

Use 8 ounces per plant of a starter fertilizer (a solution of 1 tablespoon of 20-20-20 soluble fertilizer in a gallon of water) when transplanting. Side-dress with a nitrogen fertilizer when the plants are half-grown. Provide ample soil moisture as the heads develop, especially during dry periods.

## Harvesting

The compact clusters of unopened flower buds and their attached sections of stems are the edible portions of broccoli. Its green buds develop in one large central head surrounded by several smaller side shoots. Cut the central head with 5 or 6 inches of stem after the head is well developed but before it begins to loosen, separate or the flowers start to open. Removing the central head stimulates the side shoots, which grow from the axis of the lower leaves, to develop for later harvesting. Continue to harvest broccoli for several weeks.

## Common Problems

Broccoli is frequently infested with aphids, cabbage worms and various diseases.

**diseases** – clubroot, yellows or fusarium wilt, blackleg and blackrot, downy mildew

**insects** – cabbage root fly maggots, cutworms, cabbage worms, cabbage looper worms, flea beetles, aphids, diamondback moth worms

**cultural** – poor heading (buttoning), early flowers (interrupted growth due to chilling, extremely early planting or drying out; high temperatures), hollow stem

## Harvesting and Storage

**days to maturity** – 60 to 100

**harvest** – large terminal bud cluster before flowers open, then small side bud clusters as they develop over following weeks; harvest with 6 to 8 inches of stalk; harvest sprouting and other types according to packet instructions

**approximate yields (per 10 feet of row)** – 6 to 10 bunches or about 4 to 6 pounds

**amount to raise per person** – 8 pounds

**storage** – very cold (32 degrees F), moist (95 percent relative humidity) conditions, 10 to 14 days

**preservation** – freeze

## Frequently Asked Questions

### **Q. How large should the central head of broccoli grow before cutting?**

- A. Harvest the central head when it reaches 4 to 6 inches in diameter or before it flowers. Heads may grow even larger under ideal conditions.

### **Q. What causes small plants, poor heading and early flowering?**

- A. The yellow flowers appear before the heads are ready to harvest during periods of high temperatures. Late planting and failing to get the plants started properly contribute to this condition. Premature flower development may also be caused by interrupted growth resulting from extended chilling of young plants, extremely early planting or severe drought conditions. Applying a starter fertilizer when transplanting gets the plants off to a good start.

### **Q. Can broccoli be grown in the fall?**

- A. Yes, it depends on the variety. Broccoli grows best when planted in late summer with fall temperatures between 40 and 70 degrees F during the growing period and will mature during the fall. Temperatures below 25 degrees F can damage or kill broccoli.

### **Q. What causes broccoli heads to become discolored and slightly slimy?**

- A. Discoloration occurs under some environmental conditions such as high temperatures. Bacterial soft rot also causes discolored, slimy heads.

### **Q. What causes broccoli to flower almost immediately making the heads inedible?**

- A. High temperatures (80 degrees F and warmer) at heading time usually cause premature flowering. This reduces the quality and quantity of home-grown broccoli.

### **Q. I have harvested the first large heads of broccoli from my garden. The secondary sprouts are now producing heads, but they are not as large as the first head harvested. Is this normal or should I fertilize?**

- A. The center head produced by broccoli is always the largest. The secondary sprouts produce heads about the size of a silver dollar. Side-dressing with fertilizer can increase yields and size of these sprout shoots.

### **Q. How can I control worms that get in my broccoli heads?**

- A. These are probably loopers, imported cabbage worms or perhaps broccoli head worms. They can be controlled with a product containing *Bacillus thuringiensis*, a biological-type insecticide which controls most types of worms. B.t. is a naturally occurring bacteria that is only harmful to the larval stage of loopers and diamondback moths. The material must be eaten by the worms, and it takes two to three days before the worms are killed. Use one to two drops of a liquid detergent per gallon of spray mixed to ensure adequate wetting of the waxy leaf surface. This is a well-established method of "organic" vegetable production.

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.