

# Organic Broccoli:

## Growing and Seed Saving Information



### Broccoli

Broccoli is a cool season biennial in the *Brassicaceae* family, sharing species name *Brassica oleracea* with cauliflower, cabbage, collards, kale, brussels sprouts, and kohlrabi. Some broccoli varieties produce one large head followed by few side shoots, while others, like the heirloom De Cicco, produce many smaller spears.

### Soil and Nutrient Requirements

Broccoli prefers well drained fertile soils high in organic matter. It will tolerate slightly alkaline soil, performing best in the 6.0 – 7.5 range. A general guideline is 2-3 lbs of 8-16-16 fertilizer over 100 sq ft of garden area two weeks before planting. If boron is not present in your soils, consider adding 1 Tbs per 100 sq ft. If soils are heavy or tend to be wet, a raised bed is recommended.

### Position

Full sun to light shade.

### Seeding Depth

Seeding depth: 1/4-1/2"

### Seeding Rate

44M plants/acre (96M seeds/acre, 1 lbs/acre), using 3 seeds/ft, 8" plant spacing, 18" row spacing. M=1,000.

### Plant Spacing

18"-24"

### Row Spacing

24-36"

### When to Sow

Start indoors 4-6 weeks before planting date. Plant outside as soon as the chance of hard frost has passed. Optimal soil temperature for germination is 65-75°F, but broccoli will germinate as low as 50°F. Fall plantings can be direct seeded or transplanted in mid-summer. Although it will tolerate warmer temperatures, Broccoli will be grow best at temperatures in the 60°s, so plan your plantings around the temperatures in your area.

### Other Considerations

Broccoli is shallow rooted. Be careful with even shallow cultivation.

### Frost Tolerant

Broccoli can take a light freeze.

### Drought Tolerant

No.

### Heat Tolerant

Some varieties are more tolerant, but in general Broccoli prefers cool temperatures.

### Seed Specs

4,375-9,375 seeds/oz (6,000 avg), 70-150M seeds/lb (96M avg).

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### Seed Coating / Pelleting Info

Some of the hybrid broccoli varieties we carry receive an organic film coating applied to the seed, which make the seed easier to see during planting

### Harvest

Broccoli heads should be harvested while the heads are still tight. Check fields every 2-3 days since once heads have loosened, quality is quickly compromised. After the main head is harvested, some varieties produce side shoots with smaller heads. Regular harvesting of side shoots will encourage further growth. Cool broccoli immediately after harvest to retain quality.

### Storage

Store at 32°F for 1-2 weeks.

### Pest Info

- Cabbage looper, imported cabbage worm, and diamondback moth are of the *Lepidoptera* order and can thus be controlled by *Bacillus thuringiensis* (such as Dipel DF, see Supplies) and/or spinosad (such as Entrust™), preferentially in rotation with one another to prevent selection of resistant individuals (check with your certifier before applying).
- Protect plants from flea beetles by using floating row covers in the early season.
- Root maggots can be controlled by applying beneficial nematodes.

### Disease Info

- Black rot (*Xanthomonas campestris pv. campestris*) first appears as V-shaped, yellow lesions at leaf margin. Infected plants should be pulled up immediately, and plantings should never be worked during wet conditions.
- Fusarium yellows, caused by the bacteria *Fusarium oxysporum f. sp. conglutinan*, manifests as yellowing of the lower leaves 2-4 weeks after transplanting. Yellowing moves to upper leaves and ultimately causes wilt.
- Fungal diseases can be prevented by spraying with copper hydroxide (such as Champion WP™ and/or oxidate (such as Storox™), but are best prevented by production practices that build soil and promote vigorous plant growth.
- Head rot of broccoli and cauliflower, caused by several different bacterial species, can develop quickly under conditions of high moisture and high temperature. It shows up as leaf discoloration and decay at base of outer leaves. Head rot is prevented by production practices that enhance air movement to promote drying, as well as maintenance of adequate calcium and boron levels in soil.
- Clubroot is a soil borne disease which stunts the roots of the plants so that they are not able to develop normally. Rotate crops and add lime to raise soil pH to 7.2.

### Seed Saving Instructions

Insect pollinated biennial (can work as an annual). Broccoli will cross with all members of Brassica oleracea. Isolation distances of ½ mile are necessary for purity, unless alternate day caging is used. Barriers such as tree lines, woods or buildings in between varieties can allow for shorter distances. Transplant in early spring and allow plants to flower after forming a compact head. Broccoli seed can take a very long time to mature and may require some season extension. Gather seed stalks when seed pods are dry being careful to prevent losses due to shattering. Use a 1/8" screen to help with cleaning. Broccoli seed remains viable for 5 years under cool and dry storage conditions.