



## CAULIFLOWER (*Brassica oleracea* var. *botrytis*)

Cauliflower is grown for its heads of tightly packed, edible florets, sometimes referred to as “curd” due to their resemblance to cheese curd. The most commonly grown varieties are those with white heads, but other varieties produce purple, orange, or green heads. Sprouting cauliflower produce small white florets atop sweet, green stems. Like many members of the *Brassica* genus, cauliflower is a cool-weather crop that performs best in areas with a mild climate. It can be enjoyed raw, roasted, fried, steamed, or used as an alternative to potatoes, rice, pasta, or wheat flours.

### SITE SELECTION

Cauliflower performs best in very fertile, moist but well-drained soil high in organic matter, with a pH of 6.0–7.5. Poor soil results in crops of poor quality. Sandy soils are acceptable but may require more frequent watering. For this reason, soils with good water-holding capacity are preferable. Irrigate regularly, as a consistent supply of moisture is critical; water stress during curd development can cause unmarketable heads.

Plant in a location that receives full sun. Supply adequate levels of nitrogen to keep the plants productive over a long season. If your soil is not high in fertility, side dressing may be needed.

### TIMING & SUCCESSION PLANTING

As a cool-season crop, cauliflower performs best at temperatures below 80°F/27°C. Occasional temperature spikes may not cause extensive crop damage but can result in ricey curds. Persistent hot weather often results in crop failure or reduced-quality heads.

Sprouting cauliflower is generally more heat tolerant than traditional heading varieties, but the curds can be more susceptible to riciness under temperature swings than standard types, especially as the florets approach maturity.

Varieties have been bred to succeed in specific harvest slots; for example, some varieties are better adapted to warmer temperatures. Plan sowing and transplanting dates to ensure you are growing the appropriate variety for the season. Refer to [Johnny's Cauliflower Planting Program](#) for more details and variety recommendations for each seasonal slot.

### “RICEY” CURDS

Ricey curds are a physiological concern for cauliflower growers. This condition is commonly the result of temperature extremes or delay in harvest. As the term suggests, the heads take on the appearance of rice, with small spaces between the curds, and may also have a fuzzy appearance.

**For summer harvests:** Select varieties adapted to mature in warmer temperatures. Start seeds in early spring, March–April, and transplant as soon as temperatures have moderated. Do not transplant until after the last frost, as cauliflower seedlings are less cold tolerant than more mature plants.

**For fall harvests:** Fall harvests can be achieved in any location, regardless of climate. Start seeds in June–July, depending on your location, and transplant approximately 4 weeks later. In short-season northern areas, where the harvest window is shorter, seed from early to mid June.

**For winter harvests:** Winter harvests are successful in areas where winters are mild and temperatures rarely fall below 32°F/0°C. Start seeds in late summer and transplant September–February for harvest January–April, depending on variety. Cauliflower plants should reach 60–75% of their full mature size prior to entering winter; plants are generally more cold hardy when not full-grown. Growth will resume in the spring.

### TRANSPLANTING

Four to six weeks before transplanting, sow 2–3 seeds per cell in 72-cell plug flats, or 3–4 seeds per inch in 20-row flats, ¼–½” deep. Keep soil temperature above 70°F/21°C until germination and 60°F/16°C thereafter. A seedling heat mat can help maintain the correct temperature during germination. Thin to 1 plant per cell after germination when plants have their first set of true leaves.

Ensure good air circulation and light. If you need to sow during the heat of summer, shade cloth can be hung in the tunnel or greenhouse to moderate temperatures.

Plant out when seedlings are 4–6” tall and no more than 4–5 weeks old. Older transplants are typically stressed and do not perform as well as younger, actively growing seedlings. Prior to transplanting, gradually introduce the seedlings to increasing cold to harden. Transplant outdoors, 18” apart, in rows spaced 24–36” apart. If there is disease pressure in your area, they can be planted at a wider spacing to promote better air circulation.

To grow mini heads, tighten the plant spacing. Plant 12” apart, in rows 18–36” apart. Heads should be harvested at the desired market size.



Mini Cauliflower Heads

### DIRECT SEEDING

Transplanting is the recommended, and most effective method of planting cauliflower, but direct seeding is an option. Sow seeds ½” deep, 3 seeds every 18”, in rows spaced 24–36” apart. Thin to 1 plant every 18” when the first true leaves have formed.

### HEAD FORMATION

Timing and temperature are critical factors in the development of most heading brassicas, including cauliflower. The highest quality cauliflower heads develop during mild, cool weather. Crops can be grown successfully in warm temperatures, but prolonged or extremely hot weather often results in unmarketable heads. Be sure to select varieties based on local weather conditions. Your local Cooperative Extension Service agency can also provide guidance on planting times for your area.

Excess cold weather can also be problematic. Time seeding and transplanting to avoid overexposing young plants to temperatures below 50°F/10°C. At this stage, prolonged temperatures below 50°F/10°C for more than 7 nights/days can cause premature head development. This physiological issue is known as “buttoning up.” Buttoning up can also be the result of nitrogen deficiency and inadequate irrigation. Due to their small size, buttoned heads are generally unmarketable.

### BLANCHING



Blanching Cauliflower

Blanching, sometimes referred to as “tying,” can improve the appearance of white cauliflower varieties, especially during periods of higher temperatures. Excessive exposure to sun and heat can cause white-headed varieties to yellow or develop areas of purpling. Heads maturing in fall have less tendency to discolor than those maturing in warmer weather.

When the head is approximately the size of a baseball, gather the outer wrapper leaves, pull them over the head, and secure at the tips with a rubber band, twine, or clips. Avoid securing the leaves too tightly, to allow adequate air circulation and ample room for the developing florets.

Another method of blanching cauliflower involves gently cracking the midribs of the larger, outer leaves and folding them over the head until it is fully covered. Do not break the leaves off completely, however, or they may dry out or blow away.

Varieties described as “self-wrapping” develop wrapper leaves that naturally grow up over the heads and may not require manual intervention. However, self-wrapping varieties can also sometimes benefit from being blanched. Observe your crop and use your best judgment.

Tying or covering the heads can subject the developing curds to increased humidity, however, favoring the development of the fungus *Alternaria*, which can leave the curds discolored and prone to secondary infection. Continue to scout your crop as it develops and open the leaves back up during periods of high humidity, to allow air circulation.

**Note:** Blanching is recommended for white-headed varieties only. Green, purple, or orange heads require sun to achieve full, vibrant pigmentation. Sprouting types develop better green stem contrast to the white curds without blanching.

## DISEASES

To control disease:

- Adhere to a strict preventative program that includes long crop rotations (of at least 3 years) with nonbrassica crops.
- Use clean starting mixes when sowing.
- Follow good sanitation practices.

Should disease occur in your crop, have an infected specimen tested to positively identify the disease, and contact your local Cooperative Extension Service for potential control methods.

### Black Rot

A serious bacterial disease of cauliflower and other brassicas, black rot is often identified in its earliest stages by dull yellow, V-shaped lesions on the leaf margins. As the disease progresses, affected leaves may die and turn brown to black. Favored by warm, wet, or foggy conditions, this disease can lead to total crop loss.

Because black rot can be seedborne, control starts with disease-free seed. Johnny’s stocks only seed lots that have been tested to be free of black rot in a sample of 30,000 seeds.

Crop rotation is also fundamental to preventing black rot. Applications of copper fungicides may help limit further spread when disease severity is low.

### Alternaria

The primary symptom of this fungal disease is yellow, dark brown-to-black, circular leaf spots or lesions on the curds. It also is favored by warm temperatures and high humidity. Although initial damage is primarily cosmetic, infection can lead to secondary infection and total crop loss.

## PESTS

Insect pests common to other *Brassica* crops can also affect cauliflower: aphids, flea beetles, and cabbage worms. Prevent pests from gaining a toehold by plowing in or removing debris from previous *Brassica* plantings and practicing crop rotation. Exclude pests such as flea beetles and cabbage worms by installing fabric row covers immediately after transplanting. If flea beetle population pressure becomes heavy pressure, pyrethrin or azadirachtin can be applied as a control measure.

## HARVEST

### Standard Cauliflower

When heads are at least 5–6” across, harvest by cutting at base. Waiting too long to harvest can cause heads to become oversized, loose, or ricey. Take care when handling cauliflower heads, as they are susceptible to bruising. Cool immediately after harvest.

### Sprouting Cauliflower

Start when heads have the same appearance as standard types, or wait to harvest until the heads are evenly open while closely monitoring quality. We recommend harvesting within branch lengths of 4–8” for best success in retaining curd quality as well as post-harvest storage ability.

## STORAGE

Ideal storage conditions are in a cool location, 32°F/0°C, with a relative humidity of 95–98% and good air circulation. Under these conditions, heads can remain good for 2–3 weeks. Shelf life of sprouting cauliflower is shorter if cut when physiologically mature, due to the openness of the habit causing potentially faster browning and/or drying out. Warmer storage temperatures will decrease storage length.