CAULIFLOWER (Brassica oleracea var. botrytis)

Cauliflower is grown for its head, sometimes also called “curd” due to its resemblance to cheese curd. Most varieties produce a white head, but others produce purple, orange, or green. Like many Brassica, cauliflower is a cool-weather crop and performs best in areas with a mild climate. Enjoy raw, roasted, fried, and steamed, or as a substitute for potatoes, rice, and wheat flours.

SITE SELECTION:
Cauliflower prefers a very fertile, moist but well-drained soil, high in organic matter and with a pH of 6.0–7.5. Poor soil results in reduced-quality crops. Sandy soils are acceptable but may require more frequent watering. For this reason, a soil with good water-holding capacity is best. 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 AND SUCCESSION PLANTING:
Cauliflower is a cool-loving crop and performs best at temperatures below 80°F/27°C. Occasional temperature spikes generally do not damage the crop extensively but may result in ricy curds. Persistently hot weather often results in crop failure or reduced quality heads.

Varieties have been bred to succeed in specific harvest slots; for example, some varieties are better adapted to warm temperatures. Plan sowing and transplanting dates to ensure you are choosing the appropriate variety for the season. See the Johnny’s Selected Seeds catalog or website for the Cauliflower Planting Program for more details and variety recommendations for each seasonal slot.

“RICEY” CURDS
One common physiological issue with cauliflower is called ricey curds. These are often the result of temperature extremes or delay in harvest. As the term suggests, the curds will look like rice with small spaces between the curds. They may also look fuzzy.

For summer harvests: Select varieties that are adapted to maturing in the warmer temperatures of summer. 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 have less tolerance to cold than older 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 early through mid-June.

For winter harvests: Winter harvests are successful in areas where winters are mild, and temperatures rarely go below 32°F/0°C. Start seeds in late summer and transplant September–February for harvest January–April, depending on variety. Cauliflower should be 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 inch deep. Keep soil temperature over 70°F/21°C until germination and 60°F/16°C thereafter. A seedling heat mat can aid in maintaining 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 the summer, using a shade cloth can help moderate temperatures in the greenhouse.

When seedlings are 4–6 inches 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 inches apart in rows 24–36 inches apart. If there is disease pressure in your area, a wider spacing can promote better air circulation.

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

DIRECT SEEDING:
Transplanting is the recommended, and most effective, method of planting cauliflower, but direct seeding is possible. Sow seeds ½ inch deep, 3 seeds every 18 inches in rows 24–36 inches apart. Thin to 1 plant every 18 inches when the first true leaves have formed.

HEAD FORMATION:
The best crops of cauliflower are grown during mild, cool weather. Crops can be grown successfully in warm temperatures, but extremely hot weather produces unmarketable heads. Select varieties based on local weather conditions. You can also consult your local Cooperative Extension Service agency for general guidelines on planting times for your area.

Excess cold weather can also be problematic. If young seedlings are repeatedly exposed to cool temperatures below 50°F/10°C for more than 7 days, plants may develop heads prematurely. This physiological issue is also known as “buttoning”. Time seeding and transplanting to avoid excessive exposure to temperatures below 50°F/10°C. Buttoning can also be cause by nitrogen deficiency and inadequate irrigation. Due to their small size, buttoned heads are generally unmarketable.

BLANCHING:
Other times referred to as “tying”, many varieties can benefit from blanching the heads, especially during higher temperatures. Heads maturing in fall typically have less yellowing than those maturing in warmer weather. For white varieties, exposure to sun can cause the heads to yellow. When the heads are the size of a baseball, gather the outer, wrapper leaves and pull them over the heads, and secure with twine or a rubber band. Avoid securing the leaves too tightly over the heads, by attaching the twine or rubber band only at the end of the
leaves — this allows the head ample room to continue development and increases air circulation.

Another method of blanching is to crack the midribs of the leaves and fold them over the head until it is fully covered. Do not break the leaves completely.

Some varieties are described as “self-wrapping”. These have wrapper leaves that cover the heads naturally and may not need manual intervention. However, self-wrapping varieties can also benefit from blanching the heads. Observe your crop and use your best judgment.

Tied or covered heads may experience increased humidity and a greater likelihood of contracting Alternaria.

Note: Blanching is for white-headed varieties only. Do not cover the heads of colored varieties, as they need sun to achieve their full color.

Diseases:
To control diseases, adhere to a strict preventative program that includes long crop rotations (of at least 3 years) with non-Brassica crops, use clean starting mixes when sowing, and 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 disease of cauliflower is black rot. It is identified by yellow lesions on the leaves in its earliest stages. As the disease progresses, the affected leaves may die and turn brown to black. As the disease continues to advance the crop is usually lost. Crop rotation is the best method of avoiding this disease, although applications of copper fungicides may offer some control. Black rot can be seed borne. Johnny’s only stocks seed lots that have been tested free of black rot in a sample of 30,000 seeds.

PESTS:
Insect pests common to any Brassica crop also affect cauliflower: aphids, flea beetles, and cabbage worms. Prevent the occurrence of pests by plowing in or removing debris of previous Brassica plantings, and practicing crop rotation. Exclude pests, such as flea beetles and cabbage worms by installing fabric row covers immediately after transplanting. Should flea beetle populations cause heavy pressure, treat with pyrethrin or azadirachtin.

Harvest:
When the heads are at least 5–6 inches across, harvest by cutting at the base of the head. Waiting too long to harvest can cause the heads to be oversized and loose or ricey. Take care when handling cauliflower heads, as they are readily susceptible to bruising. Cool immediately after harvest.

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 may remain good for 2–3 weeks. Warmer storage temperatures will decrease storage length.