

**CELOSIA (Celosia spp.)**

**Celosia Species:**

- C. argentea cristata*
- C. argentea plumosa*
- C. argentea spicata*

Celosia are renowned for their ability to hold their color, both as fresh and dried flowers. The plants bear velvet-like flowers that bloom from midsummer all the way through midfall. The shape of the flowers varies with the species, ranging from combs to spikes to plumes. The most familiar of these is the *C. argentea cristata* species that bears the heavily folded combs from which Celosia earns one of its common names, cockscomb.

**C. argentea cristata**



Large, 3–7 inch, crested blooms. Varieties are available with branching or single-stem plant habits.

Flowers function as a focal and textural filler flowers.

Also known as a cock's comb type.

**C. argentea plumosa**



Plumes of full, feathery blooms borne on well-branched plants.

3–12 inch long plumes serve as a soft filler flower.

Also known as plumed celosia.

**C. argentea spicata**



Small, 2–3 inch spires on branching plants.

Best used as textural or accent flowers.

Also known as wheat celosia.

**LIFE CYCLE:**

Annual.

**SITE SELECTION:**

Celosia thrives when planted in full sun. Any well-drained soil is good, but plants will perform the best when grown in fertile soil with plenty of organic matter — prepare the soil ahead of planting by adding leaf mold, peat, aged manure, or compost, if needed — and a pH of 6.0–7.0. Poorly drained soils can cause the plants to develop root rot. As a warm-weather plant, Celosia prefers soil temperatures of at least 60°F/16°C.

One or two layers of horizontal netting as support are recommended to ensure straight stems. Shade is only necessary if light intensity is very high.

Provide consistent adequate irrigation until flowers begin to develop, especially during germination. Significant amounts of water stress can cause the flowers to bloom prematurely on short stems. Stopping irrigation after flowers have started to form can help prevent the incidence of disease.

**TIMING:**

Known as a short-day plant, flower initiation for Celosia begins when the day length is short, preferably between 12–13 hours. However, longer days allow for longer stem development. If growing under short days provide additional lighting to prevent plants from flowering on short plants and stem. Time your plantings to allow for the required amount of daylight. Inadequate day length can cause deformation of flowers, comb shattering, or flat stems.

If growing when natural day length is longer than 12–13 hours, provide a dark period to limit day length for 5–6 weeks.

**GERMINATION:**

Seeds will germinate in 8–14 days when started at temperatures of 70–80°F/21–27°C. Cover lightly with vermiculate, still allowing some light to reach the seeds as light aids germination. Bottom water or mist lightly to avoid covering seeds. Do not let the soil dry out during germination.

**TRANSPLANT:**

Sow 2–3 seeds per cell in 288- to 50-cell plug trays 6–8 weeks before last frost date. Celosia dislikes root disturbance, and so sowing in open flats is not recommended. Seedlings should not be allowed to become root bound at risk of transplant shock, or other damage to the root system.

Once seedlings have emerged or any time before the plants have 2 sets of true leaves, thin to one plant per cell. If seeds were sown into small-cell plug trays, transplant the seedlings into larger containers or cells. Grow seedlings at 63–68°F/17–20°C night temperatures and long days.

To acclimate the plants to outdoor conditions, reduce water for a few days prior to transplanting. Place the trays outdoors in a protected area in partial shade during the day, bringing them indoors each night. Gradually increase the plants' exposure to full sun. After approximately 1 week, transplant outside after the last frost-free date, spacing 9–12 inches on center. A wider spacing can increase airflow and reduce the incidence of disease.

**DIRECT SEED:**

Transplanting is the preferred method of growing, but direct seeding is possible if the season is sufficiently long.

Sow seed in spring after all danger of frost has passed, when the temperature is at least 70°F/21°C, 4 inches apart, ½ inch deep. Firm the seed into the soil by hand, as light is required for germination. Thin to 6–12 inches apart when first true leaves appear.

**PINCHING:**

Pinching is not necessary for all species of Celosia, but is still recommended to increase branching (the number of stems and flowers produced) and uniform flower size. Pinching is highly recommended for *C. cristata* and *C. plumosa* species.

When plants are 8–12 inches tall, pinch the stem with your thumb and index finger or use sterilized scissors to remove the growing point.

**PESTS:**

The most common pests of Celosia are aphids and thrips. Protect seedlings from aphids and thrips with an insecticide such as Safer® Insect Soap or Monterey Garden Insect Spray. Other methods of control can be identified by reviewing our Insecticide Comparison Chart.

**DISEASES:**

For any disease, minimize the conditions favoring disease development — high humidity and extended leaf wetness — by improving air flow in protected growing structures, using drip irrigation, and spacing plants farther apart. Proper sanitation and crop rotation are also key factors in preventing the occurrence of disease. To positively identify any disease, please contact your local Cooperative Extension Service office.

The species of powdery mildew is host specific to not only Celosia, but also Amaranth, and flowers in the Amaranthaceae family, which includes Gomphrena, among others. Powdery mildew can be identified by a white fungal growth with a powdery appearance develops on leaves and occasionally flowers. Powdery mildew is most likely to occur when there is a combination of 60–80°F/16–27°C temperatures, high humidity, and excess moisture. Some effectiveness has been shown with preventative applications of Oxidate® and Actinovate®, both OMRI-listed products. Mildew Cure® is another effective control.

*Botrytis* is identified by characteristic brown to gray fungal growth that appears on stems cut for harvest or on plant debris that may be near the growing area. Poor air circulation and high humidity along with moderately cool temperatures create an environment for the disease to spread. It is important to keep the growing area clean to prevent disease. Actinovate® will offer some control with a foliar application.

Diseases that cause blemishes on the leaves are leaf spots such as *Alternaria*, *Cercospora*, and *Phyllosticta*. *Alternaria* is the most common of these. These spots appear on the upper leaf surface as reddish-brown circles with gray-white centers that become irregularly shaped as the disease progresses. The conditions that promote the occurrence of *Alternaria* leaf blight are similar to those of powdery mildew: warm, damp, and high humidity. Apply a fungicide such as Champ® WG Copper or Green Cure® and MilStop® as directed on label.

**HARVEST:**

Celosia is exceptional as a cut flower either when harvested fresh or as a dried flower. For fresh use, harvest when the flowers are fully developed. As a dried flower, harvest at the same stage of growth as you would for fresh flowers. Remove all foliage and hang in a dark, well-ventilated location to dry.