

<b>Cultural Information for:</b>	Celosia Dragon's Breath	Annual
<b>Common Name:</b>	Celosia	
<b>Botanical Name:</b>	Celosia argentea plumosa	
<b>Seed Count:</b>	37,00-48,000/ounce	1,300-1,700/gram
<b>Optimum Germination Temperature:</b>	70-75°F / 21-24°C	
<b>Optimum Growing Temperature:</b>	65-75°F / 18-24°C	

## Plug Stage – 5 weeks (288 / 12 x 24 tray)

**Stage 1 (days 1-10)** - Sow seeds in a well-drained soil mix and cover lightly with medium vermiculite or media. Provide a soil temperature of 77°F/25°C. Germination takes place in 7 to 10 days. Since the root system is very delicate, so sowing directly into plug cells is recommended rather than sowing into open flats.

**Stage 2 (days 11-20)** - After seedlings emerge, place flats in a well-ventilated area and reduce the temperature to 65-70°F/18-21°C during the day and 61-65°F/16-18°C at night. Fertilize plugs lightly with 50-100 ppm N. Over watering will promote disease; especially damping off and botrytis.

**NOTE:** Celosia will bloom more quickly under short day conditions, so provide long days (>14 hours) if sowing under increasing short day conditions (sowing mid-June to mid-March (Northern Hemisphere)).

**Stage 3 (days 21-28)** - Maintain good air circulation and keep media EC levels around 1.0 to 1.4 mmhos (2:1 dilution). Celosia is sensitive to day length and any type of stress; like water, low temperature or root banding. Avoid stressing the plugs or else they can bud prematurely and cause stunted growth later in production.

**Stage 4 (day 29-35)** - Plugs are ready for transplanting and be careful not to damage the delicate root system. It is best to handle Celosia by the leaves to prevent damaging the soft delicate stem. Also avoid deep transplanting to prevent rhizoctonia. Do not delay transplanting. Holding the plugs too long in the plug tray will stunt future development of the plant and might cause premature budding.

## Transplanting to flowering

**Media:** Select a well-drained media with little or no starter charge. Ideal pH is 5.5 to 6.0.

**Temperature:** Maintain the plants at a temperature of 65-75°F/18-24°C.

**Light:** High light, full sun is best.

**Growth Regulator:** Not necessary. Do not pinch.

**Fertilization:** To promote bright red foliage avoid applying excess Nitrogen, which promotes green leaves; especially when planted in the landscape. Apply 100 ppm N biweekly targeting the EC at 0.7 - 0.8 mmhos (2:1 dilution). It is important to supply sufficient amounts of Potassium in the fertilizer as a lack of Potassium causes weaker stems and abnormal shaped flowers. Therefore, a high potassium formulation, such as 15-10-30 (pot mum special), works well and is highly recommended.

**Photoperiod:** Celosia Dragon's Breath is an obligate short day plant\* and is best sown in early April (Northern Hemisphere) under increasing day length to promote sufficient vegetative growth prior to flowering. If sown in mid-June the plants will sense increasing short days and begin to flower in mid-August on shorter plants. Therefore, if sowing under short days one should provide long day conditions (>14 hours) with either night interruption or day length extension until the desired plant height is achieved.

**\*Flowering:** Photoperiod controls flowering if plants are set out early in the garden with unimpeded root growth. Container grown plants will flower earlier, even under long days, due to stress from restriction of the root system. To maximize garden performance do not delay transplanting.

**Disease/Insects:** Celosia is susceptible to pythium, downy mildew, botrytis, rhizoctonia, aphids and thrips.

**Culture Watch Points:** Boron deficiency can cause deformed foliage and a witch's broom effect. Celosia is also sensitive to vaporized gases of certain herbicides like methyleneurea, methoxy, dichlorophenyl and dichlorobenzonitrile. Also, avoid low temperatures (under 61°F/16°C).

## Scheduling from transplant:

Sow	Transplant	Container	Sell
Early April	Early May	Packs	Early June*
Early April	Early May	5 inch/10 cm	Mid-June*
Early April	Early May	10 inch/25 cm.	Mid-August

\* vegetative stage without flower formation

**Landscape:** Celosia Dragon's Breath is ideal for planting outdoors. Highly prized for its attractive red foliage from sowing through flowering. Space 16 inches/40 cm. apart. Avoid mulching too close to the plants to prevent stem rot (Rhizoctonia).