

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

Plug Stage – 4-5 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. Water plug trays to a moisture level 4+ (wet, but not saturated).

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. Do not allow the seedlings to flag or wilt at this stage.

NOTE: Celosia will bloom more quickly under short day conditions, so provide long days (>13 hours) if sowing under short day conditions (December – March). The finished height of Dragon's Breath can be determined by the start of short days.

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 such as low moisture, like water, low temperature or root banding. Avoid stressing the plugs or premature flower initiation may occur, and may cause stunting later in production.

Stage 4 (day 29-35) - Plugs are ready for transplanting; care must be taken to NOT damage the delicate root system. It is recommended to handle Celosia by the leaves to prevent damaging the stem and/or roots. DO NOT DELAY TRANSPLANTING. Holding the plugs too long after the plug finish date will stunt future development of the plant and could cause premature flowering.

Transplanting to finish

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

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

Light: High light, full sun is best.

Plant Growth Regulator: Usually not needed; B-9 (daminozide) sprays, Bonzi (paclobutrazol) sprays and light drenches may be utilized if desired. Follow label rates and recommendations. Do not pinch to maintain the natural celosia shape and habit.

Fertilization: To promote bright red foliage, avoid applying excess Nitrogen, especially in the ammonium form, and Phosphorous. Apply 100 ppm N biweekly targeting a soil EC of 0.7-.08 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. A formulation of 15-3-30 or similar works well and is recommended.

Photoperiod response: Celosia Dragon's Breath is an obligate short day plant and can be brought into bloom early in the bedding plant season under natural conditions. However, a sufficient number of long days may be needed to establish enough vegetative growth (plant bulking) for the plants to finish at the grower's pre-determined height specifications. Flower initiation may occur as early as day 10 after sowing if the plugs are under short-day conditions. Flower development can be drawn out, and the plants bulked up, if the plants are grown under high light and cooler temperatures (ADT 64-67°F/17.7-19.4°C). Once initiated, Celosia generally does not revert back to vegetative growth if the plants are under short days for 28 continuous days or longer. The specific day of starting short days, can and will determine the finished height of the plants (earlier start of short-days = shorter plants; delayed start of short days= taller plants).

Diseases/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. Avoid low temperatures (under 61°F/16°C).

Scheduling from transplant:

Sow	Transplant	Container	Finish
Late January	Late Feb – early March	Quart	Mid – late April
Late January	February – mid March	2.5 quart , 6.5 – 8"	Late April – early May
Late January – early Feb	Mid-March – late March	10 – 14" containers	May

Landscape: Celosia Dragon's Breath is ideal for planting outdoors and is 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).