



## Sparkler™

### CLEOME HASSLERIANA

**Minimum Germination Rate:** 75%

**Seed Product Form:** GoldSmart™ Primed

### FLOWERING

**Time frame when plants are receptive to flower initiation:** Days 25 – 35; 5 – 7 leaves present.

**Flowering Type:** Facultative long-day plant – long days enhance flowering.

**Specific Flowering Mechanism:** A combination of long days, high irradiance and warm temperatures trigger flowering.

### PLUG CULTURE

**Germination:** Optimum conditions for seedling development that begins the day the crop is sown until cotyledon expansion.

Expect radicle emergence of GoldSmart™ Primed seed in 4 – 6 days. Advances in Goldsmith's seed technology have overcome dormancy issues in Cleome. Do NOT pre-soak trays with potassium nitrate prior to sowing. Treating primed seed with this solution may inhibit germination. Freezing or chilling the seed prior to sowing is not advisable and may damage the seed. Germinate Sparkler directly on the greenhouse bench. An alternating temperature environment is necessary for optimum germination rather than a constant temperature found in germination temperatures.

**Cover:** Cover seed with a thin layer of medium-sized vermiculite to maintain moisture levels.

**Media:** • pH: 5.5 – 5.8  
• EC: 0.75 – 1

**Light:** Light is necessary for germination. If utilizing a chamber, providing a light source of 10 – 100 foot candles (100 – 1,000 lux) will improve germination and reduce stretch.

**Temperature:** Cleome needs higher than normal temperatures to germinate successfully. Fluctuating day/night temperatures are essential for optimum germination. Provide 80° – 85°F (26° – 30°C) days and 68° – 70°F (20° – 21°C) nights.

**Moisture:** Wet (4) until radicle emergence. Then begin alternating between moisture levels wet (4) and moist (3) until cotyledon expansion. Allow media to approach level (3) before re-saturating to level (4). Media saturated for over 12 – 14 hours can inhibit germination.

**Humidity:** 90 – 100%

**Fertilizers:** Cleome is a heavy feeder. Fertilize at 100 ppm nitrogen with a calcium-based fertilizer after germination is complete.

**Plug Bulking:** Optimum conditions during the vegetative period, beginning at cotyledon expansion, needed for the root to reach the edge of the plug cell.

**Media:** • pH: 5.5 – 5.8  
• EC: 1 – 2

**Light:** 2,000 – 3,500 foot candles (20,000 – 35,000 lux) maximum.

**Temperature:** Continue fluctuating day/night temperatures at 80° – 85°F (26° – 30°C) days and 68° – 70°F (20° – 21°C) nights.

**Moisture:** Alternate between moist (3) and medium (2). Allow media to approach level (2) before re-saturating to level (3). Media saturated for more than 12 hours may inhibit growth.

**Humidity:** 40 – 60%

**Dehumidify:** Provide horizontal airflow to aid in drying down the media through evapotranspiration, allowing better penetration of oxygen to the roots.

**Fertilizers:** 100 – 150 ppm nitrogen with a calcium-based fertilizer (13-2-13 or 14-4-14). Use the higher rate when humidity levels are lower.

**Growth Regulators:** Applications of growth regulators in the plug stages will promote better basal branching and fuller plants. Sparkler responds to Bonzi (paclobutrazol) or B-Nine (daminozide).

### GROWING ON

Sparkler is a genetic dwarf form of the traditional garden Cleome, yet is still a very large bedding plant. Under a culture of high feed and growth regulation, you can produce a tight, well-branched, dark-green plant with many flower spikes.

**Transplant Ready:** 3 – 4 weeks from sow in a '288' tray. In containers smaller than 6", expect to sell Sparkler as a small green plant. Choose the largest container your market can handle for flowering sales. Transplant plugs before they become root bound.

**Finish Bulking/Flower Initiation:** Optimum conditions during the vegetative period, beginning at transplant, needed for the root to reach the edge of the container AND to make the plant receptive to flower initiation.

**Media:** • pH: 5.6 – 6 Cleome can tolerate lower pH levels than most other bedding plants.  
• EC: 1.8 – 2.5

**Light:** Provide 3,500 – 4,500 foot candles (12 – 15 total mols or 35,000 – 45,000 lux) to hasten flower induction. Supplemental lighting under low light conditions at 350 – 450 foot candles (35,000 – 45,000 lux) will enhance shoot and root growth.

**Temperature:** 75° – 80°F (22° – 27°C) days, 60° – 65°F (16° – 18°C) nights.

**Moisture:** Alternate between moisture levels moist (3) and medium (2). Allow media to approach level (2) before re-saturating to level (3). Media saturated for more than 12 hours may inhibit growth.

**Fertilizers:** Cleome is a heavy feeder. Constant liquid feed at 300 ppm nitrogen with an ammonium-based fertilizer (20-10-20). Irrigate with clear water after every third feeding.

**Growth Regulators:** Sparkler responds to three applications of Bonzi (paclobutrazol) at 25 ppm applied 7 – 10 days apart. Begin applications one week after transplant. B-Nine (daminozide) is also an effective PGR. Apply B-Nine at 5,000 ppm as needed at weekly intervals. B-Nine may delay flowering by 4 – 7 days. A crop grown with three applications of B-Nine will flower at 14 – 18" (30 – 36 cm); with two applications at 16 – 20" (40 – 50 cm); and with one application at 24 – 30" (60 – 75 cm).

**Common Diseases:** Pythium, Powdery Mildew

**Common Pests:** Fungus gnats

PRODUCT USE	GARDEN SPECIFICATIONS
Large containers, mass plantings, add height and interest	<b>Light:</b> Full sun <b>USDA Hardiness Zone:</b> 10 <b>AHS Heat Zone:</b> 12 – 1

	Garden Height	Garden Width
<b>Sparkler</b>	3.5 – 4' (1 – 1.5 m)	24 – 36" (60 – 90 cm)

### CLEOME SCHEDULING IN WEEKS

	Sparkler
<b>Total crop time</b>	13 – 15
<b>'288' plug crop time</b>	3 – 4
<b>Transplant to finish crop time</b>	10 – 12

*Note: These suggestions are only guidelines and may have to be altered to meet individual grower's needs. Check all chemical labels to verify registration for use in your region.*