

TECHNICAL GUIDE

Cosmos sulphureus Cosmic

Flowering

Flowering Type: Facultative short day plant. Under short days, plants will initiate and flower more quickly. Short day treatment results in a more compact plant.

Flowering Mechanism: High light intensity and warmer temperatures shorten the total crop time.

Plug Culture

Germination: Provide optimum conditions for seedling development beginning on the day of sowing until radicle emergence. Expect radicle emergence in 5–7 days.

Cover: Cover seed with vermiculite or substrate after sowing.

Sowing Method: 1–3 seeds per plug.

Media: pH 5.7–5.9; EC < 0.5.

Temperature: Maintain 18–20 °C (64–68 °F) until radicle emergence. Afterwards, maintain 16–18 °C (60–64 °F) day and night. Once roots reach the bottom of the cell, temperatures can be lowered to 14–16 °C (57–60 °F). At higher temperatures, seedlings tend to stretch quickly.

Moisture: Begin with wet (4) until radicle emergence. In stage 2, alternate between wet (4) and moist (3). Once seedlings are well established, reduce moisture to moist (3) to medium (2). Allow the media to dry back before re-saturating.

Humidity: 95–100% until radicle emergence, then reduce to 40–60%. Provide proper ventilation and horizontal airflow to improve oxygen levels in the media.

Light: Light is not required for germination and is optional during the plug stage. Supplemental lighting of 1,000–2,500 ft. candles (10,000–25,000 lx) improves seedling quality, but maintain short days for optimal results.

Fertilizer: Fertilized water should not exceed an EC of 0.7. Begin fertilizing early at 50–75 ppm nitrogen using a complete balanced fertilizer. Once plants are well established, maintain an EC of 0.7–1.2 by feeding 100–175 ppm nitrogen per spray.

Plug Bulking and Flower Initiation: Maintain optimum vegetative conditions from cotyledon expansion to flower initiation. This stage occurs when seedlings root to the edge of the plug.

Growth Regulators: Growth regulators are not required, as growth can be controlled through temperature and moisture management. If needed, B-Nine (daminozide) sprays at 2,500 ppm can help control stretch in the plug.

Fungicides: Preventative fungicide applications are recommended under cooler conditions and low light levels.

Growing On

Media: pH 5.8–6.2; EC 1.2–1.5.

Light: As a facultative short-day plant, maintain short days for early flowering. Day lengths above 14 hours help avoid premature flowering. High light levels shorten crop time and produce the best quality. Light levels of 3,000–4,500 ft. candles (30,000–45,000 lx) are recommended.

Temperature: Maintain an average daily temperature (ADT) of 16 °C (60 °F). Cool temperatures promote a stable, compact, well-branched plant habit in pots. Outdoor production is possible, but Cosmos does not tolerate frost.

Moisture: Cosmos requires relatively dry cultivation. High moisture levels or overwatering can cause root rot and black foliage. Alternate between moist (3) and medium (2). Allow the media to dry back before re-saturating.

Humidity: 40–60% humidity is ideal. Provide good ventilation and horizontal airflow to reduce humidity and dry back the media.

Fertilizer: Moderate fertilization levels are required. Fertilize weekly at 100–150 ppm nitrogen using a complete balanced fertilizer. Avoid high ammonium and excessive nitrogen levels.

Growth Regulators: Not required, as growth can be controlled through temperature and moisture management. If necessary, apply light sprays of B-Nine (daminozide) or Cycocel (chlormequat chloride) to control stretch. Avoid overdosing.

Fungicides: Preventative fungicide applications are recommended under cooler conditions and low light levels.

Common Diseases: Root rot, powdery mildew, Botrytis.

Pests: Aphids, mites.

Plug & Finished Crop Time

Plug Crop Time

288 tray: 3-4 weeks

Finished Crop Time (from 288 tray)

Packs (1*): 5-8 weeks

10-12 cm (4-5"): 5-6 weeks

13-15 cm (5-6"): 6-7 weeks

*seeds per plug

Moisture Codes

Saturated (5) Water is easily observed when finger is pressed on cell. Water moves freely from the top of the plug to the bottom.

Wet (4) Media looks black and is not glistening. The media feels wet to the touch but there is very little water movement.

Moist (3) Water is not easily visible. When finger is pressed on the cell there is very little movement from top to bottom.

Medium (2) Media is not black, but now looks medium brown. There is no water movement when pressed with finger.

Dry (1) Media has changed color to a very light brown and is dry to the touch.

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