

TECHNICAL GUIDE

Delphinium elatum Magic Fountains

Flowering

Flowering Type: FastraX perennial – first year flowering plant without vernalization. Facultative long day plant; long days and high irradiance promote flowering.

Flowering Mechanism: Flowering is affected by day length. A day length > 13 hours results in flower initiation. 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 5–8 days.

Cover: Cover the seeds lightly with vermiculite.

Sowing Method: 2–3 seeds per plug.

Media: pH 5.8–6.2; EC 0.5–0.75.

Temperature: Maintain 18–20 °C (64–68 °F) for the first two weeks. Once cotyledons have expanded, reduce to 16–18 °C (60–64 °F).

Moisture: Begin with wet (4) media for germination. After 8 days, alternate between moist (3) and medium (2) until transplanting. 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. After cotyledon expansion is complete, provide 2,000–2,500 ft. candles (20,000–25,000 lx). Later, increase up to 4,000–5,000 ft. candles (40,000–50,000 lx). A 14-hour day length during the plug stage supports early root development and improves uniformity. Harden plants before transplanting so they can tolerate full sun outdoors.

Fertilizer: Maintain EC < 1.2. Begin fertilizing early to improve seedling quality. Start at 50–100 ppm nitrogen and gradually increase to 100–175 ppm during plug production. Use a complete balanced fertilizer.

Plug Bulking and Flower Initiation: Maintain optimal vegetative conditions from cotyledon expansion to flower initiation. Vernalization is not required.

Growth Regulators: For cut flower production, no growth regulators are required.

Growing On

Media: pH 5.8–6.5; EC 1.2–1.5.

Light: Once transplanted into the field or greenhouse, additional light is no longer possible. For timing, aim for a natural day length of 14 hours, as high light intensity and warmer temperatures shorten total crop time.

Temperature: Grow at an average daily temperature (ADT) of 16–18 °C (60–64 °F) or outdoors.

Moisture: Delphinium does not like to stay wet, so avoid overwatering. If irrigation is possible, allow the media to dry back before re-saturating.

Fertilizer: High fertilization levels are required. Fertilize weekly with 100–150 ppm nitrogen using a complete balanced fertilizer. Prevent magnesium deficiency by applying magnesium sulphate (0.05%) 1–2 times. In case of iron deficiency, apply iron chelate 1–2 times. Roots are very sensitive to high salt levels in substrates.

Growth Regulators: For cut flower production, no growth regulators are required.

Fungicides: Apply fungicides during extended periods of low light, cool temperatures, and high humidity.

Common Diseases: Botrytis, powdery mildew, fungal leaf spots, Pythium.

Pests: Aphids, thrips, whitefly.

Harvest: Harvest stems when the first 1–2 flowers are fully open or when 25% of florets have opened. The harvest stage depends on the intended use. Harvest for 2–3 weeks. After the first flush, new plants should be planted.

Post Harvest: Delphinium flowers are extremely sensitive to ethylene. For shipping, include an ethylene-inhibiting product to avoid flower shattering and decay. Hydrate stems immediately after cutting and store in a cooler at 1–3 °C (34–38 °F) until use.

Plug & Finished Crop Time

Plug Crop Time

288 tray: 5-6 weeks

128 tray: 6-7 weeks

Autumn Plantings

Greenhouse: 13 weeks – 65-75 plants/m²

Outdoor field: 16 weeks – 70-90 plants/m²

Transplant from August to October, flowering in the following spring.

Spring Plantings

Greenhouse: 11 weeks – 65-75 plants/m²

Outdoor field: 13 weeks – 70-90 plants/m²

Transplant from February to April, flowering in late spring/early summer.

Expert Tip

Benary's Pacific and Magic Fountains are rigorously tested as cut flower for excellent flower and stem quality with a long vase life. Both series deliver reliable yields of stems per variety. They can be grown in a greenhouse, tunnel or on the field for cut flower usage.

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.

All information in our technical guide is based on our own trials and would therefore be as guideline only. Detailed cultivation aspects vary depending on climate, location, time of year and environmental conditions. Benary expressly disclaims any responsibility for the content of such data/information and makes no representation or warranty for the cultivation of any products listed. It is recommended that growers conduct a