

**Cultural Information for:** Delphinium Perennial  
**Common Name:** Delphinium  
**Botanical Name:** Delphinium grandiflorum (Chinensis)  
**Seed Count:** 20,000-20,500 /ounce 700-900 /gram  
**Optimum Germination Temperature:** 68-70°F / 20-21°C  
**Optimum Growing Temperature:** 59-70°F / 15-21°C  
**Optimum pH:** 5.8 – 6.2  
**EC – Plug:** 0.26 – 0.75 mmhos/cm (1:2) / 0.76 – 2.0 (SME)  
**EC – Finishing:** 0.76 – 1.25 mmhos/cm (1:2) / 2.1 – 3.5 (SME)

### Plug Culture - 6 weeks (288, 12 x 24 tray)

**Stage 1** (days 1-10) Direct sow seed into plug trays filled with a well-drained sterile media. Cover the seed lightly with medium vermiculite and keep the temperature between 68-70°F/20-21°C.

**Stage 2** (days 11-20) When seedlings begin to emerge apply a light feed of 75-100 ppm N from a well-balanced calcium nitrate-based fertilizer. Place in a cool greenhouse with good air movement and a temperature of 65-68°F/18-20°C. Optimal light level is 2,500 f.c./27,000 lux.

**Note:** High temperatures (excess of 77°F /25°C in the plug stage results in poor quality cut flowers on immature plants. Low temperatures (below 50°F/10°C) cause plants to rosette.

**Stage 3** (days 21-34) The true leaves are beginning to form. Raise the fertilizer rate to 150 ppm N. Keep the temperature between 65-68°F/18-20°C and provide good air movement to prevent disease. Delphinium is susceptible to both foliar and root diseases (pythium, rhizoctonia and phytophthora). Allow the media to dry slightly before watering, provide good sanitation and water early in the day.

**Stage 4** (days 35-42) The plugs are now reaching transplant size. Lower the temperature to 59-65°F/15-18°C and increase the light level to 5,000 f.c./ 54,000 lux. Delphinium has a tap root system and delaying transplanting will reduce plant and flower quality.

### Transplanting to flowering

**Bed Preparation:** Select a well drained bed in full sun with good drainage. Incorporating organic matter into the bed will improve the soil structure and enhance fertility.

**Spacing:** Space plants 8 inches/20 cm. apart.

**Support:** Plant support is needed to keep the plants from falling over.

**Fertilizer and Watering:** The use of a well-balanced calcium nitrate-based fertilizer will promote strong and healthy plants. Maintain even moisture and avoid allowing the plants to wilt which damages the root system resulting in poor quality cut flowers.

**Temperature:** For greenhouse production provide a day temperature between 65-70°F/18-21°C and a night temperature of 55-63°F/13-17°C. The best quality is achieved under cooler conditions.

**Light:** Delphinium grandiflorum thrives under high light, up to 7,500-foot candles/ 80,000 lux, as long as optimum temperatures are maintained. Supplemental lighting is recommended under low light conditions.

**Insects:** Aphids, thrips and whiteflies

**Disease:** Botrytis, crown rot, powdery mildew

**Photoperiod:** Delphinium Planet is a facultative long day plant. Long day length (> 13 hours) reduces crop time. Providing a 16-hour photoperiod, either via day length extension or 4-hour night interruption (10 pm – 2 am), promotes stem elongation. Planet flowers under short day length but crop time is longer. Be sure to maintain optimum temperatures.

**Crop Timing:** In general, Delphinium grandiflorum will flower in 12-14 weeks after transplanting.

### Northern Hemisphere Schedule

Type	Sow	Plant	First Harvest
Forcing	Mid-August	Late September	End of December
Natural Season <i>Mild Climate</i>	Mid-September	Late October	Early March
Natural Season <i>Cold Climate</i>	February to March	Mid-March to mid-April	Mid-June to mid-July

*“All information given is intended for general guidance only and may have to be adjusted to meet individual needs. Cultural details are based on North American conditions and Sakata cannot be held responsible for any crop damage related to the information given herein. Application of recommended growth regulators and chemicals are subject to local and state regulations. Always follow manufacturer’s label instructions. Testing a few plants prior to treating the entire crop is best.”*