

**Cultural Information for:** Delphinium Candle Perennial  
**Common Name:** Delphinium  
**Botanical Name:** Delphinium elatum  
**Seed Count:** 10,000-11,350 / ounce 350-400 / gram  
**Optimum Germination Temperature:** 65-68°F / 18-20°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 1-14) Direct sow seed into plug trays filled with a well-drained sterile media. Cover the seed lightly with medium vermiculite and keep the media temperature between 59-68°F/15-20°C. Water the seed in with terrazole (etidiazole) to prevent disease problems from damping off. \*Chilling the seed in advance will enhance germination.

**Stage 2** (days 15-21) When the seedlings begin to emerge, apply a light feed of 75-100 ppm Nitrogen from a well-balanced calcium nitrate-based fertilizer. Place in a cool greenhouse with high light and good air movement and a temperature of 59-65°F/15-18°C). *High temperatures (excess of 77° F/25° C) at the plug stage will result in poor quality cut flowers on immature plants. Low temperatures (below 50° F/10° C) cause plants to rosette which is broken by increasing day length conditions from winter into spring.*

**Stage 3** (days 22-35) The true leaves are beginning to form. Keep the temperature between 59-65°F/15-18°C and provide good air movement to prevent disease. Delphinium is susceptible to both foliar and root diseases (pythium, rhizoctonia and phytophthora), so good sanitation and watering early in the day is best.

**Stage 4** (days 36-42) The plugs are now reaching transplant size and have 3 true leaves. Delphinium has a tap root system and delaying transplanting will reduce plant and flower quality.

\* Place the trays in a dark cooler maintaining a media temperature of 50 °F/10 °C for 15-20 days. It is important to maintain sufficient media moisture. One option is to wrap the cart with plastic.

## Transplanting

**Potting:** Transplant one plant per one gallon/4-liter pot using a well-drained media.

**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 flowers.

**Temperature:** It is best to maintain the night temperature around 60°F/15°C with day temperatures from 65-70°F/18-21°C.

**Plant Growth Regulator:** Three weeks after potting, when the roots have reached the bottom of the pot, spray the plants with 10-20 ppm of Bonzi (paclobutrazol). Repeat 2-3 weeks later. Additional applications may be necessary depending on desired height. Alternatively, applying 1-2 ppm paclobutrazol drench when the plants start to bolt is also an option.

**Insects:** Aphids, thrips and whiteflies

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

**Day length:** Delphinium Candles requires a minimum photoperiod of 10½ hours to set buds. Long day length (> 13 hours) reduces time to flower and plant height.

## Northern Hemisphere Schedule

Type	Sow	Plant	Flower
Forcing	Mid August	Late Sept.	End of Nov.
Semi-Forcing	Mid Oct.	End of Nov.	End of March
Natural Season <i>Mild Climate</i>	Mid Sept.	End of Oct.	May to June
Natural Season <i>Cold Climate</i>	Feb. to March	April to May	July to August

*“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.”*