

<b>Cultural Information for:</b>	Delphinium	Perennial
<b>Common Name:</b>	Chinese Larkspur	
<b>Botanical Name:</b>	Delphinium grandiflorum (Chinensis)	
<b>Seed Count:</b>	20,000-20,500 /ounce	700-900 /gram
<b>Optimum Germination Temperature:</b>	68-70°F / 20-21°C	
<b>Optimum Growing Temperature:</b>	59-70°F / 15-21°C	

## 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 and a pH between 5.5 –6.3. 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 foot candles / /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 targeting a media EC between 0.8 and 1.0 mmhos (2:1 dilution) and a media pH of 5.5-6.3. 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 foot candles / 54,000 lux. Delphinium has a tap root system and delaying transplanting will reduce plant and flower quality.

## Finishing (13 – 14 weeks)

**Potting:** Delphinium perform best in a moist, well-drained media with a pH of 5.8 to 6.5. Transplant 1 plant per 1-Quart / 12 cm. pot and 3 plugs per 6 inch / 15 cm. pot. Avoid deep transplanting to prevent crown rot.

**Fertilizer and Watering:** Optimum media E.C. level is 1.0 to 1.4 mmhos (2:1 dilution). 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:** 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. For the best quality, finish the crop in a cool greenhouse or outdoors.

**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.

**Photoperiod:** Delphinium Planet is a facultative long day plant. Long day length (> 13 hours) reduces crop time, but also promotes stem elongation. Planet will flower under short day length (> 12 hours) but the crop time will be longer. Be sure to maintain optimum temperatures.

**Chemical Growth Regulation:** Growth regulation may be necessary to control stem elongation. Make the first application as the stems begin to elongate above the basal foliage and 7 days later if necessary.

Chemical Name	Application Rate
B-Nine (daminozide)	2,500 ppm / 0.25%
B-Nine / Cycocel	2,500 ppm / 1,000 ppm
Bonzi (paclobutrazol)*	30 ppm spray
Sumagic (uniconazole)*	5 ppm spray

*\*do not apply more than twice*

**Insects:** Aphids, thrips and whiteflies

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

**Crop Timing:** In general, Delphinium grandiflorum will flower in 13-14 weeks after transplanting.

*“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.”*