

Guardian Series F₁ Delphinium: Bedding & Pot Plant Culture

■ Guardian delphinium delivers F₁ uniformity *plus* multiple use as a landscape/bedding variety, commercial cut flower and potted plant.

■ A breeding breakthrough...very uniform blooming within each variety, particularly under short days.

■ Earlier too...approximately 6 weeks faster from transplant to bloom versus open-pollinated varieties.

■ Highly programmable; can be produced in 6-in. (15-cm) pots with PGRs; partners well for production and sales with Solstice snaps and Dynasty double dianthus; as a garden bedding plant, thinner, stronger stems make Guardian delphinium a beautiful home garden cut flower.

Delphinium elatum

Approximate seed count: 9,285 to 15,000 S/oz. (325 to 525 S/g)

Plug Production

Media

Use a well-drained, disease-free soilless medium with a medium initial nutrient charge and a pH of 5.8 to 6.2.

Sowing

A medium cover of coarse vermiculite is strongly recommended. Germination takes 7 to 8 days.

Temperature

Maintain 68 to 70°F (20 to 21°C) through germination and cotyledon emergence.

Delphinium in general does not show uniform germination. Seeds within a plug tray germinate over a 3 to 4-day window. Leave the plug trays in the germination chamber for an additional period of 2 to 3 days after the first sign of germination for best results. Move the plug trays out of the germination chamber at "open cotyledon" stage.

Stage 2 and 3 plugs can be grown at 65 to 70°F (18 to 20°C) days and 60°F (15°C) nights. A week before transplant (end of Stage 4), plugs can be grown at cooler temperatures for toning.

Day temperatures of 65°F (18°C) and night temperatures of 60°F (15°C) are recommended.

Light

Light is not required for germination, but will be an added advantage.

Humidity

Maintain 95 to 97% relative humidity until cotyledons emerge. Chamber germination will result in better results. Maintaining high humidity during Stage 1 (sow to radicle emergence) is critical for germinating this crop.

Fertilizer

Begin fertilizing at week 3 with 50 ppm N twice a week. After a week, increase the nitrogen rate to 100 ppm twice a week until finish. Maintain EC less than 0.75 until week 3. Increase EC to 1.0 until finish for the best results. A pH range of 5.8 to 6.2 is optimal during plug production.

Growth Regulators

Growth regulators are generally not needed during plug production.

Growing On to Finish

Container Size

Guardian delphinium is best suited to 6-in. (15-cm) pots and gallon (8-in./20-cm standard pot) production. Use 1 plug for either size.

Media

Use a well-drained, disease-free soilless medium with a medium initial nutrient charge and a pH of 5.8 to 6.5.

Temperature

Maintain minimum night temperatures of 60°F (15°C) and day temperatures of 65° to 70°F (18° to 21°C).

After transplant, the crop can be grown under the greenhouse conditions mentioned above for a period of about 3 to 4 weeks. Delphiniums can flower prematurely under higher temperatures and more slowly under cooler temperatures. After

this 3 to 4-week greenhouse period, the crop can be grown outside under cold frame-type conditions to flower/finish.

Light

No supplemental lighting is required.

Fertilizer

A week after transplant, begin fertilizing with 150 ppm N once a week when growing in the greenhouse. If grown outside, additional fertilizer may be required. Maintain an EC of 1.5 and a pH of 5.8 to 6.2 after transplant until finish.

Growth Regulators

Apply foliar sprays of Bonzi at 20 ppm twice after transplant. The first application can be made 3 weeks after transplant, and the second 2 weeks later. If needed, a third application of 20 ppm Bonzi can be made 2 weeks later.

The finished height in a 6-in. (15-cm) pot **without** PGRs will be approximately 24 in. (60 cm).

Crop Scheduling

Sow to transplant: 6 to 7 weeks in a 288-cell plug tray

Transplant to finish in 6-in. (15-cm) or 1-gallon pots: 12-16 weeks

Total crop time to flower from sowing: 18-23 weeks

Guardian delphinium does not show symptoms of flower shattering during shipping if the flower spike is one-third open. If the flowers are fully open, there is more risk of shattering.

Common Problems

Insects: Watch for fungus gnats during plug production.

Diseases:

Pythium root rot can be a problem during Stage 1 and 2 of plug production and also after transplant. *Powdery mildew*.

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