



# Delphinium Excalibur™

syngenta®flowers

## Culture Guide

**Botanical name:** *Delphinium elatum*

**Product form:** Seed

**Containers:** Quarts, Gallons

**Habit:** Upright

**Vernalization:** Not required (First Year Flowering)

### Garden Specifications

**Garden Height:** 24–32" (60–81 cm) tall

**Garden Width:** 14–18" (35–45 cm) wide

**Exposure:** Full sun

**USDA zone:** 4–8

**AHS zone:** 8–1

**Product use:** Containers, Landscapes

### Germination

Stages 1 & 2

**Germination time:** 5–8 days

**Media temp:** 68–72 °F (20–22 °C)

**Chamber:** Optional

**Light:** Not required for germination

**Seed cover:** Yes

**Moisture level: 4 - WET:** Soil is dark brown but not shiny, no free water is seen at the surface of the soil, when pressed or squeezed water drips easily, and trays are heavy with a visible bend in the middle.

**Rec. tray size:** 288–cell tray

**Seeds per cell:** 2–3

### Young Plant Production

Stage 3 & 4

#### Temperature

**Day:** 66–68 °F (19–20 °C)

**Night:** 64–68 °F (18–19 °C)

**Average daily temperature:** 66 °F (19 °C)

#### Lighting

**Day extension lighting:** Not necessary

**Light intensity:** 200–250  $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$  for the first two weeks after sowing or until true leaf development occurs. Light levels can be increased up to 600  $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$  as rooting increases and the seedling matures.

**Day length response:** Facultative long day

**Daily light integral:** 10–12  $\text{mol}\cdot\text{m}^{-2}\cdot\text{d}^{-1}$

**Media pH:** 6.1–6.5

**Media EC:** SME 0.5 to 0.75 mS/cm



**Fertilizer:** 50–75 ppm N

**Moisture level:** Media should be allowed to dry between irrigations. Alternate between moisture level 2 and 3.

**2 - MEDIUM:** Soil is light brown in color, no water can be extracted from soil, and soil will crumble apart.

**3 - MOIST:** Soil is brown in color, strongly squeezing the soil will extract a few drops of water, and trays are light with no visible bend.

**Pinching:** No

**Plant growth regulators (PGRs):** If needed, sprays of B-Nine® WSG (daminozide) at 2,500 ppm, or a Bonzi® (paclobutrazol) spray at 5 ppm can be used to tone plugs.

**Plug grow time:** 7–8 weeks in a 128–cell tray

**Comments:** Grow plugs at cool temperatures once germinated for best quality.

### Bulking and Vernalization

**Vernalization:** Not required (First Year Flowering)

### Finishing

#### Temperature

**Day:** 66–68 °F (19–20 °C)

**Night:** 62–64 °F (17–18 °C)

**Average daily temperature:** 65 °F (18 °C)

## Lighting

**Day extension lighting:** Beneficial to 14 hours

**Light intensity:** 800–1,200  $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$

**Day length response:** Facultative long day

**Daily light integral:** 14–16  $\text{mol}\cdot\text{m}^{-2}\cdot\text{d}^{-1}$

**Transplanting:** Transplant directly into the finished container. Place the rooting media slightly above the level of media in the container. Make sure that the root ball is covered and that the plug is situated in the center of the pot. Do not cover the crown of the plant as this is the active growing point.

**Media pH:** 6.1–6.5

**Media EC:** SME EC: 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm

**Fertilizer:** 75–125 ppm N

**Pinching:** No. Pinching is not recommended or needed.

**Plant growth regulators (PGRs):** If needed, sprays of Bonzi® (paclobutrazol) at 10–15 ppm, or Sumagic® at 5–10 ppm. To help hold plants, a Bonzi® drench at 2–4 ppm can be applied at the sign of visible bud.

**Tech tip:** Excalibur™ Delphinium is best used in gallon containers and larger. Keep feed levels up throughout production to produce nice full plants.



Try Chrysal Alesco®, a postharvest foliar spray, to protect ethylene sensitive crops during shipping and retail.

**Moisture level:** Media should be allowed to dry between irrigations. Alternate between moisture level 2 and 4.

**2 - MEDIUM:** Soil is light brown in color, no water can be extracted from soil, and soil will crumble apart.

**4 - WET:** Soil is dark brown but not shiny, no free water is seen at the surface of the soil, when pressed or squeezed water drips easily, and trays are heavy with a visible bend in the middle.

**Common pests:** Aphids, Whiteflies

**Common diseases:** Powdery Mildew, Pythium, Fungal Leaf Spot

## Scheduling

Size	Crop Time	Plants Per Pot
1.0 quart (4.5 to 5 inch)	9–10 weeks	1 ppp
1.25 to 2.5 quart (5.5 to 6.5 inch, trade gallon)	9–10 weeks	2–3 ppp
2.5 to 6.0 gallon planter (12 to 14 inch planter)	9–10 weeks	3–5 ppp

Estimated finish crop time is from transplant of a 128-cell tray and finished at an average daily temperature (ADT) of 65 °F (18 °C).

## Example crop schedule for a 2.5 quart

Weeks From Transplant	Description
1 week	Transplant one plug into the center of the pot being mindful not to plant the crown below the soil
5 weeks	Sprays of Bonzi® or Sumagic® as needed to tone the plants
8 weeks	If needed, a drench of Bonzi® after visible bud to hold the plant prior to ship
10 weeks	Finish



Excalibur™ Dark Blue White Bee, Excalibur™ Light Blue White Bee, and Excalibur™ Pure White