

**Calliope®**  
GERANIUMS

# Geranium Interspecific Calliope® Medium Culture Guide

*Pelargonium interspecific*

**Product form:** Vegetative

**Containers:** Pints, Quarts, Gallons, Hanging baskets

**Habit:** Mounding

## Garden Specifications

**Garden Height:** 12–14" (30–35 cm) tall

**Garden Width:** 16–18" (40–45 cm) wide

**Exposure:** Full sun

**USDA zone:** 10–11

**AHS zone:** 11–3

**Product use:** Containers, Hanging baskets,  
Landscapes, Patio pots, Combos

Calliope® Medium Cherry

## Propagation of Unrooted Cuttings

**Root emergence:** 8–10 days

**Rooting hormone:** Not recommended

**Bottom heat temp.:** 70–74 °F (21–23 °C) for the first three weeks. After roots are well developed, temperatures can be lowered to hold and tone the cuttings.

**Misting:** Mist schedules vary depending on light and temperature conditions. Apply just enough moisture to rehydrate the cuttings and keep them from wilting. Cuttings should be hydrated and in a non-wilted stage within 24 hours after sticking. Cuttings that continue to wilt heavily after 24 hours will callus unevenly and will be delayed in rooting. CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help in rehydration of the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated. Applying too much mist early on can lead to foliar disease and tissue breakdown.

**Rec. tray size:** 105-cell (30 mm) or larger

**Propagation timing:** 3.5–4 weeks for a 105-cell plug; add more rooting time for significantly larger plug sizes.

### Temperature

**Day:** 72–74 °F (22–23 °C)

**Night:** 72–74 °F (22–23 °C)

### Lighting

**Day extension lighting:** Not necessary

**Light intensity:** 1,000–1,200 foot candles (200–250 micro mols) for the first two weeks after sticking or until root development occurs. Light levels can be increased up to 3,000 foot candles (600 micro mols) as rooting increases and the cutting matures.

**Day length response:** Day neutral

**Daily light integral (DLI):** 4–6 mols/day for the first two weeks after sticking or until root development occurs. DLI can be increased to greater than 12 mols/day after root formation.

**Media pH:** 5.8–6.2

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

**Fertilizer:** Begin fertilization at 100 ppm nitrogen when roots become visible. Rates can be increased up to 200 ppm nitrogen after roots become well developed. Use primarily Cal-Mag® Plus (calcium nitrate + magnesium nitrate) fertilizers in propagation to prevent unwanted stretch.

**Pinching:** Not recommended

**Plant growth regulators (PGRs):** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Calliope® Medium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

## Finishing

### Temperature

**Day:** 72–74 °F (22–23 °C)

**Night:** 68–70 °F (20–21 °C)

**Average daily temperature:** 70–72 °F (21–22 °C)

### Lighting

**Day extension lighting:** Not necessary

**Light intensity:** 4,000–6,000 foot candles (800–1,200 micro mols)

**Day length response:** Day neutral

**Daily light integral (DLI):** 16–18 mols/day

**Transplanting:** Transplant directly into the finished container. Place the rooting media slightly below the level of media in the container. Make sure the root ball is covered and that the cutting is situated in the center of the pot.

**Media pH:** 5.8–6.2

**Media EC:** SME EC: 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm

**Fertilizer:** 200–250 ppm N

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

**Plant growth regulators (PGRs):** Calliope® Medium growth can be controlled using sprays of Cycocel® at 1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm) or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth. Do not spray Florel® on stressed plants. A Bonzi® drench (0.1 ppm) can be used at the end of production to hold and tone plants before sale.

**Tech tip:** Calliope® Medium geraniums are moderately vigorous and may require regular PGR applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH around 6.0 to avoid iron/manganese toxicity.



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

## Moisture level:

**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, Thrips

**Common diseases:** Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt

## Scheduling

SIZE	CROP TIME	PLANTS PER POT
1.0 pint (4 inch)	6–7 weeks	1 ppp
1.0 quart (4.5 to 5 inch)	7–8 weeks	1 ppp
1.25 to 2.5 quart (5.5 to 6.5 inch, trade gallon)	9–12 weeks	1 ppp
3.0 quart to 2.0 gallon (7.5 to 10 inch)	11–12 weeks	3 ppp
1.5 gallon hanging basket (10 inch basket)	11–12 weeks	3–4 ppp
2.0 gallon hanging basket (12 inch basket)	11–12 weeks	2 ppp
3.0 gallon hanging basket (14 inch basket)	11–12 weeks	4–5 ppp

Estimated finish crop time is from transplant of a 105-cell tray and finished at an average daily temperature (ADT) of 70 °F (21 °C).

## Example crop schedule for a 1.25 quart

WEEKS FROM TRANSPLANT	DESCRIPTION
1 week	Provide average daily temperatures of 70 °F (21 °C) or higher and DLI levels above 15 mols/day
2 weeks	Apply an early spray of Florel® (350 ppm) to control growth and improve branching
5 weeks	Evaluate plants and apply a spray of Cycocel® (1,000 ppm) to maintain compact, mounded growth. Watch for Botrytis as plants mature and fill the leaf canopy. Check media EC and pH levels
9 weeks	Sale

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