

# Moxie!™ Geranium

## Culture Guide

### *Pelargonium interspecific*

- The first and only interspecific geranium bred for brilliant color in small containers
- Mounded, densely branched habits deliver superior flower coverage all season long
- Syngenta Flowers interspecific breeding ensures best-in-class colors and garden performance all season long

**Container size:** Large packs, quarts, and gallons

**Habit:** Mounded

### Garden Specifications

**Garden height:** 12–14"

**Garden width:** 14–16"

**Light:** Full sun or partial shade

**USDA Hardiness Zone:** Not hardy

**AHS Heat Zone:** 11–3

**Product use:** Beds, containers, baskets

### Propagation of Unrooted Cuttings (URCs)

**Root emergence:** 8–10 days

**Rooting hormone:** Generally not required; however, an overhead heavy spray to the cuttings (penetrating the rooting media) using water-soluble K-IBA at 250–300 ppm 24–48 hours after sticking can hasten rooting.

**Bottom heat temperature:** 70–73 °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 significant *Botrytis* infections on geraniums.

**Recommended tray size:** 84-cell tray (30 mm plug) or larger. 26-count double strips are commonly used and this allows adequate spacing and air circulation around the individual plants.

**Propagation time:** 3.5–4 weeks for a 30–35 mm plug; add more rooting time for significantly larger plug sizes.

#### TEMPERATURE:

**Day:** 70–73 °F (21–23 °C)

**Night:** 70–73 °F (21–23 °C)

#### LIGHTING:

**Recommended day length:** Greater than 12 hours

**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:** 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:** 6.0–6.2

**Media EC:** 0.8–1.2 mS/cm (saturated media extract)

**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® (calcium nitrate + magnesium nitrate) fertilizers in propagation to prevent unwanted stretch.

**Pinching:** No

**Plant growth regulators (PGRs):** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have been exposed to high temperatures during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking.

Moxie! Geraniums are compact growers and will need minimum chemical growth regulation in propagation. If needed, they are best controlled using a spray of Cycocel® at 750–1,000 ppm after good root formation. Bonzi® sprays are not recommended in propagation because of the chance of getting chemical into the rooting media and stunting the plant. Florel® can also be sprayed at 350 ppm 3–4 weeks after sticking and after good root formation. Florel can improve branching, reduce premature flowering, and control growth. The Florel spray can be done instead of, or sometimes in addition to, the Cycocel spray if needed. Do not spray Florel or Cycocel on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

**Tech tips:** Consider sticking callus cuttings (CCs) in propagation trays or strips to reduce propagation time about seven days versus unrooted cuttings (URCs). CCs can also be direct stuck into final containers and will reduce overall crop times (i.e. traditional propagation and rooted cutting transplant) approximately 10–14 days. For further information on Syngenta CCs, go to our [syngentaflowers-us.com](http://syngentaflowers-us.com) website and search for Cutting Time callus culture guides.

## Finishing

### TEMPERATURE:

**Day:** 70–75 °F (21–24 °C)

**Night:** 65–70 °F (18–21 °C)

**Average daily temperature:** 68–73 °F (20–23 °C)

### LIGHTING:

**Recommended day length:** Greater than 12 hours.

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

**Day length response:** Day neutral

**Daily light integral:** Greater than 12 mols/day

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

**Media pH:** 6.0–6.2. Watch for iron/manganese toxicity (bronze speckling of older leaves) when pH drops below 5.8.

**Media EC:** 2.0–2.5 mS/cm (saturated media extract)

**Fertilizer:** 225–250 ppm nitrogen

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

**Plant growth regulators (PGRs):** If needed, Moxie! geraniums are best controlled with relatively low spray rates of growth regulators, such as Cycocel at 750–1,000 ppm. Under extremely hot growing conditions, a tank mix of Cycocel (750–1,000 ppm) + B-Nine® (1,500 ppm) can be used. A spray of Florel at 350 ppm is only recommended for baskets and larger pots with longer production times to help improve branching and to delay flowering. The Florel spray should be done around 2–2.5 weeks after planting and after plants are established and actively growing. Florel is not

recommended after transplant for smaller pot sizes because of flower delay.

**Moisture level:** Media should be allowed to dry between irrigations. Alternate between moisture level 4/2. Moisture level 4 (wet) = media is wet to the touch, but not saturated. Moisture level 2 (medium) = media has changed color from dark black to a medium brown. Geraniums have considerable drought tolerance; however, severe drying out and consistent wilting will lead to poor growth and bottom leaf yellowing.

**Pests:** Aphids, thrips

**Diseases:** Botrytis, Pythium root rot, and bacterial wilt and leaf blight

## Scheduling

Container size	Crop time after transplant (wks)	Plants per pot
306, 1801 pack	6	1
1.0 pint (4 inch)	6	1
1.0 quart (4.5 to 5 inch)	6–7	1
1.25 to 2.5 quart (5.5 to 6.5 inch, trade gallon)	8–9	1–2
3.0 quart to 2.0 gallon (7.5 to 10 inch)	8–9	2
1.5-gallon hanging basket (10-inch basket)	9–10	3
2-gallon hanging basket (12-inch basket)	9–10	4

Estimated finish crop time is from transplant of a 30 mm plug and finished at an average daily temperature (ADT) of 68 °F (20 °C) and under a DLI of at least 12 mols/day.

**Tech tips:** Maintain warm temperatures throughout production. Warm temperatures are recommended early on to promote root and upper vegetative growth. Temperatures can be lowered towards the end of production to tone or hold the plant. Keep plants adequately fertilized and grown under sufficient DLI for consistent flowering.

### EXAMPLE CROP SCHEDULE FOR 1-QUART POTS

**Day 1:** Stick URCs and spray Fascination at 2 ppm. Add CapSil at 2–4 oz/100 gal with the Fascination spray. Apply fungicide sprays for Botrytis control. Mist sufficiently until rooting begins.

**Week 3:** PGR spray of Florel at 350 ppm or Cycocel at 750 ppm. Add CapSil at 2–4 oz/100 gal to the spray solution.

**Week 5:** Transplant rooted cuttings and finish at an ADT of 68–70 °F (20–21 °C). Begin fertilization at 225–250 ppm N.

**Week 7:** If needed, one PGR spray of Cycocel at 750 ppm plus CapSil at 2–4 oz/100 gal.

**Week 11:** Finish

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