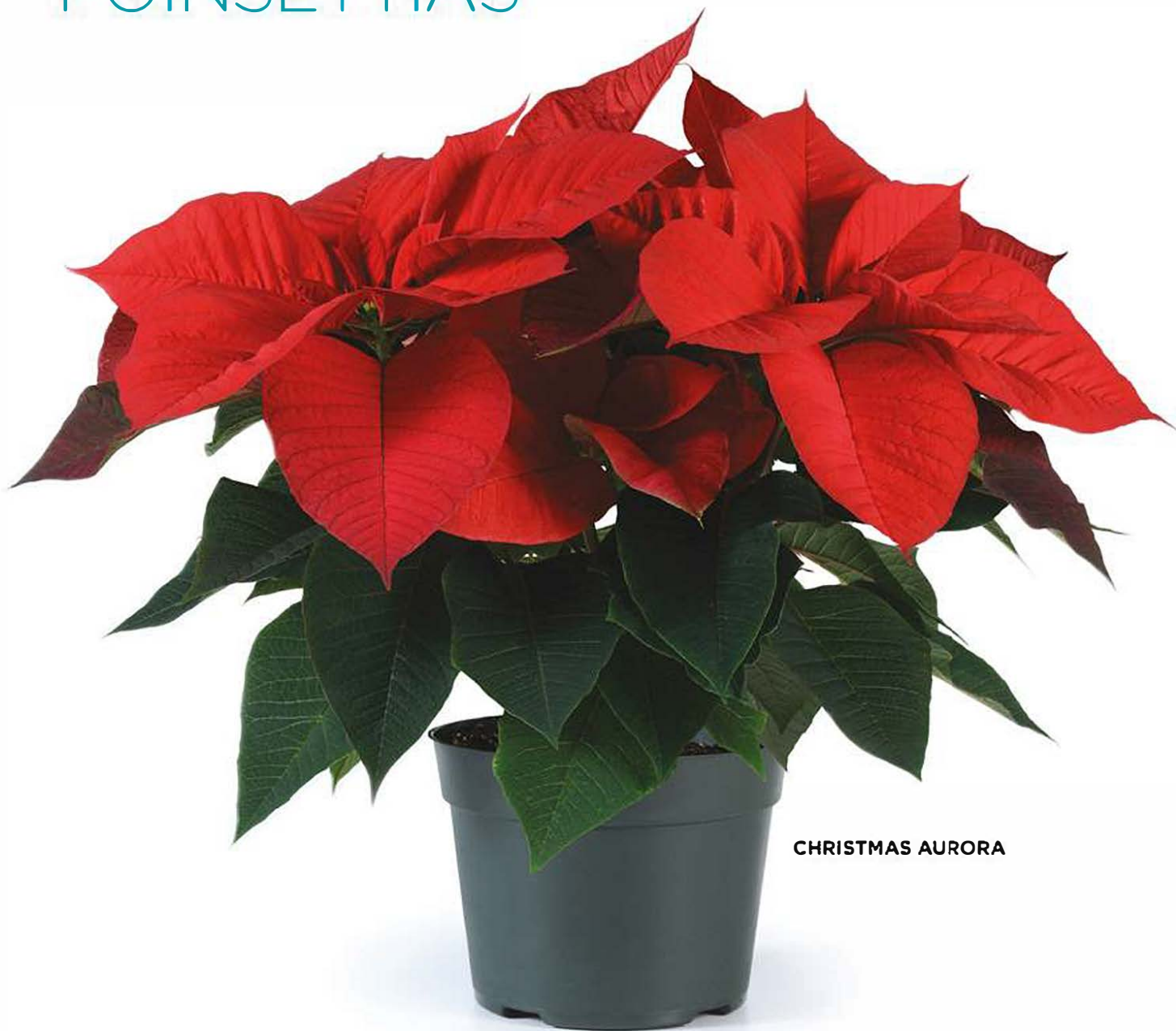


KEYS TO PRODUCING **PICTURE-PERFECT** POINSETTIAS



CHRISTMAS AURORA

This easy-to-use culture guide provides helpful growing info and production tips...
so be sure to keep it nearby as you plan - and plant - your perfect poinsettia crop.

CULTURE GUIDE

PROPAGATION GUIDE

Unrooted Cuttings

Open boxes upon arrival and check the temperature inside the box. Unpack the cuttings in a cooler at 50°F/10°C and monitor temperatures throughout the unpacking, storing and sticking process. If temperature is greater than 70°F/21°C, allow cuttings to cool down before sticking. Keep the cuttings moist and turgid while handling, and avoid letting them get too warm.

Stick cuttings in media-filled liner trays, preferably using a stabilized media such as Ellepot or Oasis.

Note: It's preferable to stick unrooted cuttings right away. But if you must store cuttings, keep them cool (50°F/10°C) for no more than 24 hours. After sticking, keep propagation environment shaded and cool for the first two days to limit stress that can result from the transition to propagation of a cooled cutting.

TIP: A single application of a low-dose Capsil in the first 24 hours can help maximize efficiency of misting and reduce stress on cuttings. High doses and/or repeated applications will cause distortion of new growth. Use Capsil at a rate of 1 to 3 oz./100 gal. to break the surface tension of water on the leaf.



Infrared thermometers help you keep a close eye on temperatures

Growers should use the information presented in this guide as a starting point. Crop times will vary depending on the climate, location, time of year and greenhouse environmental conditions. Chemical and PGR recommendations are only guidelines. It is the responsibility of the applicator to read and follow all the current label directions for the specific chemical being used in accordance with all regulations.



(Left) cool unrooted cuttings; (Right) allowed to warm

CULTURE GUIDE

PROPAGATION GUIDE

Stage 1: Callus (First 7 Days)

Apply rooting hormone to base of cuttings. Stick and mist cuttings as soon as possible to avoid wilt. Keep humidity up and keep mist levels high, including some at night, from Day 1 through Day 4. Optimal air temperature is 70 to 75°F/21 to 24°C. Optimal light level is 1,000 to 2,000 f.c. Increase shading to maintain temperatures below 90°F/32°C. *Callus will start to form 5 to 7 days after sticking.*

Broad spectrum fungicide can be applied a few days after sticking as a preventative treatment to reduce disease pressure. Soil temperatures of 72 to 75°F/22 to 24°C are best for callus formation.

Stage 2: Root Out (Days 8 to 14)

Reduce mist to force root growth. After reducing mist frequency, spray with a broad spectrum fungicide and/or bactericide in the evening, allowing the chemical to adhere to the plant. Avoid saturated media to speed up root initiation. Once rooting has begun, start reducing soil moisture to build root system. Begin fertilizing at this stage with 150 ppm N of balanced fertilizer that contains Ca and Mg. *Visible roots will appear by Day 10. Eliminate mist by Day 14.*



A nice white callus 8 days after sticking

TIP: Avoid foliar fertilizers with phosphorus.

TIP: Watch for fungus gnats and treat preventatively!

Stage 3: Finished Propagation (Days 15 to 28)

Continue feeding every other irrigation with 150 ppm N in a balanced soluble fertilizer. Continue to spray with a broad spectrum fungicide every 7 to 10 days. If plants are growing too quickly, you can apply PGRs around Day 16 and again at Day 22. We recommend Cycocel 750 ppm spray. For more control on fast-growing varieties, you can increase the Cycocel rate to 1,000 ppm and/or decrease the time between applications to 4 days. If you don't get enough control with Cycocel alone, try a tank mix of B-Nine 1,000 ppm/Cycocel 500 ppm. In the last week of propagation, it is recommended to begin to raise light levels and reduce temperatures to harden the liners for planting. *Cuttings are ready to plant by Days 23 to 28.*



Days 23 to 28: All grown out and ready to plant

CULTURE GUIDE

FINISHING GUIDE

Finishing Environment

Day temperatures: 68 to 78°F/20 to 25°C
Night temperatures: 65 to 70°F/18 to 21°C

Keep humidity high during early finishing stages by wetting floors and minimizing air movement. We recommend drip irrigation and high-porous potting plant media with pH adjusted with limestone. Be sure media is well-drained, with a maintained pH of 5.7 to 6.2. Avoid pH of 6.6 and higher at finish, as high pH and reduced fertility levels can contribute to bract edge burn and magnesium deficiencies. Negative DIP works well for height control – 1 hour before sunrise until 3 hours after.

Water and Fertilizer

Maintain media moisture, avoiding dramatic swings from wet to dry, as this may damage roots and contribute to *Pythium* root rot.

Good moisture management can reduce or eliminate the need for fungicide drenches to control root diseases, but a preventative soil drench every 4 to 5 weeks after transplant is a good practice. Be sure to avoid Thiophanate-methyl applications when temperatures are high, as this can lead to some phytotoxicity on the lower leaves.

Poinsettias require calcium, as well as an increased level of molybdenum. Maintain a media EC of 1.5 to 2.0. Keep media pH below 6.7, especially late in the crop cycle, and maintain availability of nutrients during bract development. Apply 200 to 250 ppm N constant feed from balanced feed during the active growth phase, reducing to 75 to 125 ppm N as the crop begins to color, and continue feeding through finish.

TIP: Reduce feed to lower levels as the crop finishes in November.

Pinching

Pinching the plants before the breaks form significantly is critical to support even branching. On very early branching varieties like Christmas Feelings, the pinch should be done on day 12 to 14 after planting. On the other varieties, the pinch should be done when the roots reach the edge of the pot. Late pinching will result in uneven branching.

Pinch to leaf count based on finished specs – for example, 6 to 7 leaves below the pinch to produce a plant with 6 primary bracts. Don't leave too many nodes below the pinch! This can lead to excess branching, wider plants and smaller bracts. Removing 1 to 2 leaves just below the pinch will increase light penetration, promoting stronger and more uniform branching.



Before pinching



After pinching



Branch development after 7 days

CULTURE GUIDE

FINISHING GUIDE

Early PGR Application

To reduce internode length, encourage even branching and produce a plant better suited for pinching, apply Cycocel 750 to 1,200 ppm spray or B-Nine 1,000 ppm/Cycocel 750 ppm tank mix spray prior to pinch. Start applications in propagation and continue after transplant as needed.

Apply after pinching when new shoots measure at least 0.75 in./2 cm, and repeat. This will even out the branches and reduce apical dominance.

Flower Induction

Most varieties will begin to induce flowers between September 10 and 25. Light pollution and excessive heat can delay flowering. Blackout and long-day lighting can be used to manipulate maturity dates. Avoid warm nights (above 72°F/22°C) from 1 week prior to initiation through October 10.

Growing On PGRs



Time for late applications of Bonzi drench

Use only PGR sprays, no drenches, until shoots are 2 in./5 cm in length. Use Cycocel 750 to 1,200 ppm spray or B-Nine 1,000 ppm/Cycocel 750 ppm tank mix spray early in the crop cycle to reduce stress and even out the branching. Avoid PGR applications within 1 week of initiation.

Stop PGR applications by October 10 (natural season crop), except for micro-drenches of Bonzi.

Use only very low rates (1/10 to 1/20 ppm) during the bract expansion period in October and early November (natural season crop).

You may use late applications of Bonzi drench at 0.5 ppm to improve shelf life. This is best done at full bract coloration, just before pollen shed. Do not apply prior to full color.

TIP: Be sure to stop B-Nine applications by September 14!

Spacing and Target Height Control

Crop specifications typically include height, width and bract count. A 6-in./15-cm poinsettia is typically spaced 13 to 14 in./33 to 35 cm on center, with a finished height of 14 to 16 in./35 to 40 cm and a primary bract count of 5 to 6. Establish final spacing before the leaf canopy fully closes. Apply shade if possible right after spacing for a few days to avoid stress. Track height progress through the crop cycle to ensure you're meeting your specifications and apply PGRs as needed.

TIP: For larger finished plant height, transplant earlier, providing a longer crop time from pinch to initiation.

Insects and Diseases

Common insects: Whitefly (several species and biotypes), fungus gnats and thrips.

Common diseases: *Pythium* root rot, *Rhizoctonia* stem rot, *Botrytis* (leaves, bracts, stems), Powdery Mildew (leaves) and Bacterial Leaf Spot.



Whitefly



Thrip damage



(Left) *Pythium* root rot; (Right) healthy roots

Scheduling Your Poinsettia Crop

Here are two simple steps to help you determine when to order your cuttings.

First, do the math.

Phase 1: Allow 2 weeks from transplant to pinch.

Phase 2: See the chart below to determine your weeks from pinch to flower initiation. Note that we've based our timelines on a medium-vigor variety. Varieties with higher or lower vigor may move the pinch dates ahead or behind by 1 week.



AVERAGE WEEKS FROM PINCH TO FLOWER INITIATION			
	NORTH	CENTRAL	SOUTH
0 WEEKS	2" or Mini 1 plant/pot	2" or Mini 1 plant/pot	2" or Mini 1 plant/pot
1 WEEK			4" pot 1 plant/pot
2 WEEKS		4" pot 1 plant/pot	6" pot 1 plant/pot
3 WEEKS	4" pot 1 plant/pot	6" pot 1 plant/pot	6.5-7" pot 1-2 plants/pot
4 WEEKS	6" pot 1 plant/pot	6.5-7" pot 1-2 plants/pot	8-8.5" pot 3 plants/pot
5 WEEKS	6.5-7" pot 1-2 plants/pot	8-8.5" pot 3 plants/pot	10" pot 3-5 plants/pot
6 WEEKS	8-8.5" pot 3 plants/pot	10" pot 3-5 plants/pot	12"+ pot 4+ plants/pot
7 WEEKS	10" pot 3-5 plants/pot	12"+ pot 4+ plants/pot	
8 WEEKS	12"+ pot 4+ plants/pot		

Phase 3: Refer to the charts on pages 22 to 27 to find your weeks from flower initiation to retail-ready crop.

Now, based on your retail-ready date, count backwards to determine at what week you need to order your cuttings.