## Cultural tips for Geranium Horizon and Divas Series'



## **Plug Production**

**Sowing/Media:** Use a well-drained, disease-free, peat-based plug medium with a pH of 6.0 - 6.2 and soluble salts (EC) <0/75 mmhos (saturated paste). Cover seed completely with coarse vermiculite after sowing.

**Germination (Stages 1 and 2):** Keep medium uniformly moist until seedlings are hooking above the vermiculite covering, then dry down the covering. Soil temperature should be  $70 - 72^{\circ}$ F, but keep <75°F to avoid thermodormancy of seed. Keep light levels <1500 footcandles. Light is not needed for germination. Allow about 7 days to finish germination.

**Stage 3:** Soil temperature should be  $65 - 68^{\circ}$ F. Light levels can be up to 3000 footcandles. Using HID lights during low light periods can be beneficial for growth and faster flowering, as geraniums flower faster with more total light, not longer days. Dry down between waterings, but avoid wilt. Feed every other watering with 100 – 150 ppm N from 15-5-15, 17-5-17, or 13-2-13. Keep media pH 6.0 – 6.5, no lower, and media EC < 1.5 mmhos.

**Stage 4:** Soil temperature can be lowered to  $62 - 65^{\circ}$ F. Maintain light levels around 3000 footcandles. Dry down between waterings, but avoid wilt. Feed every other watering with 100 – 150 ppm N from 13-2-13 to tone seedlings.

**Plant Growth Regulators:** Use sprays of Cycocel (250 – 750 ppm) or B-Nine (800 – 1500 ppm) + Cycocel (250 – 500 ppm) as needed. Low Bonzi (2 – 5 ppm) sprays can also be used in warmer climates once leaves have covered plug tray. Do your own trials to avoid overdosing, as vigor of varieties, weather conditions, and cultural practices directly affect how much growth regulators to use.

**Crop Time:** 5 - 6 weeks for 512 plugs grown under HID lights, 6 - 7 weeks for 288 plugs grown under HID lights. Add 1 week to crop times if not using HID lights during low light periods.

**Common Problems:** Botrytis, Pythium, bacterial leafspot, lower yellowreddish leaves – too dry with damaged roots, necrotic lower leaves – low media pH (< 6.0), upper yellow leaves – too high media pH or low iron (Fe).

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Growing on to finish

Container Size: Large cell packs to 4-inch pots

**Media:** Transplant into a well-drained, disease-free, peat-based growing mix with media pH 6.0 - 6.2, no lower, and a media EC <1.5 mmhos (saturated paste).

**Temperatures:** Keep soil temperature  $65 - 68^{\circ}$ F for rooting out after transplanting, then lower to  $62 - 65^{\circ}$ F for growing on.

**Light:** Keep light levels 3000 – 5000 footcandles. HID lights can be used for daylength extension to provide more total light during low light periods, which will make plants flower faster.

**Irrigation and Fertilization:** Practice a good wet/dry moisture cycle, but avoid wilting. Geraniums do not like wet feet, but they cannot tolerate wilt, either. Feed 1 - 2x/week with 150 - 200 ppm N from 15-5-15, 17-5-17, or 13-2-13, and add extra iron if needed. Keep media pH 6.0 - 6.8, and media EC 1.25 - 1.75 mmhos (saturated paste).

**Plant Growth Regulators:** Use sprays of Cycocel (350 - 1500 ppm) or B-Nine (800 - 1500 ppm) + Cycocel (350 - 1000 ppm) as needed. Bonzi sprays at 2 - 5 ppm can also be used once leaves cover soil, but avoid using Bonzi as a drench, as it has too strong of effect on geranium growth. Control petiole stretch to get more light to growing tips for faster flowering.

**Common Problems:** Botrytis, Pythium, bacterial leafspot, necrosis on lower leaves – low media pH (<6.0), upper yellow leaves – high media pH >6.8 or low iron.

**Crop Time:** 8 – 10 weeks, depending on plug and container size, and total light.



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