Divine™ Series New Guinea Impatiens

I. hawkeri
Approximate seed count: 15,800 S./oz. (558 S./g)

Plug Production

Media
Use a well-drained, disease-free seedling medium with a pH of 5.8 to 6.2. A pH below 5.8 may cause iron and manganese toxicity. Maintain EC of about 0.75 mS/cm (1:2 extraction).

Sowing
The recommended plug sizes are 288 to 128-cell. Water adequately after sowing. Covering the seed is not required, but a light cover of coarse vermiculite can help maintain high relative humidity around the seed.

Stage 1 – Germination takes approximately 5 to 8 days depending on temperature. Keep plug tray in germination chamber until 80% radicle emergence.

Soil temperature: 74 to 77°F (23 to 25°C) with 77°F (25°C) being best for emergence and uniformity. Cooler temperatures will negatively impact seed emergence and uniformity. Avoid temperatures in excess of 85°F (29°C).
Light: Light may be beneficial.
Moisture: Keep soil saturated with moisture (level 5) during Stage 1.
Humidity: Maintain 100% relative humidity (RH) during stage 1.

Stage 2
Air temperatures: 70 to 74 °F (21 to 23°C)
Soil temperature: 72°F (22°C)
Light: Up to 2,500 f.c. (26,900 Lux) (DLI 5 to 8 moles·m^{-2}·d^{-1})
Moisture: Maintain high moisture (cycle from level 3 to 4). Avoid excess moisture or wilt.
Humidity: Lower relative humidity, but maintain at a minimum of 75%, especially at night.
Fertilizer: Apply fertilizer at 50 to 75 ppm N/0.4-0.6 mS/cm EC) from nitrate-form fertilizers with low phosphorous, such as 13-2-13 or 17-5-17. Provide P at 8 to 10 ppm constantly.

Stage 3 to 4
Air temperature: 70 to 74 °F (21 to 23°C)
Soil temperature: 72°F (22°C)
Light: Up to 5,000 f.c. (54,000Lux). High daily light integral (DLI 10 moles·m^{-2}·d^{-1}) improves plug quality and reduces total crop time.

Moisture: Keep wet-dry moisture cycle between levels 3 and 5. Avoid seedling wilt or excessive moisture. New Guinea impatiens cannot tolerate wilt.

Humidity: Lower relative humidity, but maintain at a minimum of 75%, especially at night.

Fertilizer: Increase fertilizer to 65-75 ppm N/0.5 to 0.6 mS/cm EC. Provide P at 8 to 10 ppm constantly. Maintain medium pH 5.8 to 6.2 and EC between 1.0 and 1.5 mS/cm (1:2 extraction).

Growth Regulator: Negative DIF and DROP work very well for New Guinea impatiens height control. If necessary, Daminozide (B-Nine, Alar) can be applied as a spray at 1,250 ppm at first true leaf, followed by rates as high as 3,750 ppm if conditions warrant. Paclobutrazol (Bonzi, Piccolo) spray at a low rate (1 to 2 ppm) is also effective at first true leaf stage.

Transplanting
Flowering may be delayed from crowded conditions in a plug tray. Do not allow plugs to get root bound.

Growing On to Finish

Container Size
Divine New Guinea impatiens are best suited to 306 premium packs, 1801 flats, 4-in. (10-cm) to 6-in. (15-cm) pots and hanging baskets.

Media
Use a well-drained, disease-free growing medium with a pH of 5.8 to 6.2. A pH below 5.8 may cause micronutrient toxicity from iron and manganese.

Temperature
Maintain air temperature at 68 to 76°F (20 to 24°C) day and 65 to 68°F (18 to 20°C) night from transplant to sale. Maintain an average daily temperature (ADT) between 68 to 73°F (20-23°C). The warmer temperatures will hasten

flowering, but reduce the flower size. Likewise, cooler temperatures will delay flowering, while flowers will be larger. At 85°F (29°C) ADT, heat delay can occur in New Guinea impatiens.

Divine can be grown at temperatures as low as 57°F (14°C). However, plants will develop very slowly and crop time will increase significantly.

Light
Keep light as high as possible while maintaining proper temperature. Divine New Guinea impatiens are day neutral for flowering. A high DLI of 10 to 15 moles·m^{-2}·d^{-1} increases the number of flowers and branches per plant. A lower DLI can delay flowering.

Humidity
Keep the relative humidity above 75%, especially at night, so that plants may fully benefit from target greenhouse temperatures. Relative humidity below 75% can drive plant temperatures below ambient greenhouse temperatures.

Media Moisture
New Guinea impatiens are sensitive to over-watering. Do not use drought stress to regulate plant height as severe wilt may cause flower drop and flower bud abortion. Cycle between level 2 and 4.

Fertilizer
New Guinea impatiens are moderate feeders. Excessive fertilizer causes leafy, lush growth and diminished flowering. Provide P at 12-15 ppm constantly. Maintain EC below 1.5 mS/cm. Avoid high ammonium and high phosphorus fertilizer. Selection of constant liquid feed program is dependent on local environment and can vary widely from 50 to 150 ppm N. Use a lower rate when ADT is low. Plants may benefit from occasional leaching with clear water to prevent salt accumulation. Excessive salt accumulation can cause bronzing, leaf cupping (down) and tip burn.

Pinching
Due to natural superior branching, pinching is not required and will increase the crop time.

Plant Growth Regulators
Plant growth regulator use may be needed depending on light, temperatures, variety and container size:

In North American conditions: 1 or 2 applications of paclobutrazol (Bonzi, Piccolo) spray at 2 to 5 ppm (0.5 to 1.25 ml/l 0.4% formulation) can control height without reducing flower size. Paclobutazol drench at 0.125 to 0.25 ppm (0.03 to 0.06 ml/l, 0.4% formulation) is also effective, but may stunt less vigorous varieties (See Table 1 for vigor rating). Start with low rates and adjust as necessary, especially for drenches. Negative DIF and DROP work well for New Guinea impatiens height control. Florel is not needed to promote branching.

In North European conditions: 1 or 2 spray applications of paclobutrazol at 2 to 4 ppm (0.5 to 1.0 ml/l, 0.4% formulation) are effective. Negative DIF and DROP work well for NGI height control.

For larger containers or hanging baskets, PGRs may only be needed for vigorous varieties (see Table 1). Conduct your own trials to determine the best rate for your conditions.

Table 1. Divine series vigor rating

Most vigor	Blue Pearl, Orange Bronze Leaf, Scarlet Bronze Leaf
Mid vigor	Cherry Red, Lavender, Orange, Pink Pearl, Scarlet Red, Violet, White Blush
Least vigor	Burgundy, Pink

Note: It is the responsibility of the applicator to read and follow all current label directions for the specific chemical being used and to use the PGR in accordance with all laws and regulations.

Crop Scheduling
Germination: 5 to 8 days, watch for 80% radicle emergence before removal from stage 1 environment.
Finish time for 288 or 128 plugs: 5 to 6 weeks, respectively.
Weeks from transplant to flower:

Container Size	288-cell plugs per pot	Spring	Autumn (Southeast)*
306/1801 flats	1	6 to 7	8 to 10
4 to 5-in. (10 to 12.5-cm), quart pot	1	7 to 8	8 to 10
6-in. (15-cm) pot	1-3	8 to 9	9 to 11

10-in. (25-cm) basket	3-4	8 to 9	9 to 11
12-in. (25 to 30-cm) basket	4-5	8 to 9	9 to 11

* Heat delay possible when ADT exceeds 85°F (29°C).

Common Problems
Insect: Thrips, aphids, fungus gnats and mites.
Disease: *Pythium, Rhizoctonia, Phytopthora, Botrytis*, Tomato Spotted Wilt Virus, Impatiens Necrotic Spot Virus, Powdery Mildew and Myrothecium.

NOTE:
Divine New Guinea impatiens has high/standard resistance (HR) to Impatiens Downy Mildew in accordance with terminology set by the International Seed Federation.

In the Garden

Home gardeners will see best results when they plant Divine New Guinea impatiens in partial sun to shade. Space plants 8 to 10 in. (20 to 25 cm) apart in the garden. Divine New Guinea impatiens also work well in baskets, containers and patio planters.

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