'GoldRush' Dieffenbachia

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Dieffenbachia species and cultivars are important to the ornamental tropical foliage plant industry because of their ability to adapt to low light and relative humidity levels in interior environments, their ease of production, and striking foliar variegation patterns. At least 20 cultivars are commercially produced in Florida. For many years, new cultivar introductions were obtained only from private collections or as chance mutations. Most new cultivars are now being introduced from plant breeding programs (Henny, 1995a, 1995b; Henny et al., 1987). The hybrid *Dieffenbachia* 'GoldRush' was developed and selected as a part of the tropical foliage plant breeding program at Mid-Florida Research and Education Center.

Origin and Description

Dieffenbachia 'GoldRush' was obtained from a cross of *Dieffenbachia* 'Victory' (Henny et al., 1987) and *Dieffenbachia* 'Tropic Marianne' (U.S. Plant Patent No. 8832; Fig. 1). 'GoldRush' was selected because of its showy yellow-green leaf color, similar to 'Tropic Marianne', but it is contrasted by a bright white midrib and dark green margins. In addition, 'GoldRush' is well branched and has a compact appearance due to short petioles (Fig. 2). The dominant leaf color is bright yellow-green, RHS 145C (Royal Horticultural Society, 1995) on the top (adaxial) and bottom (abaxial) surface. The dark green leaf margins vary from 1.5 to 2.0 cm wide and are dark green RHS 139A. On the bottom leaf surface, leaf margins are a darker yellow-green RHS 147B. The leaf midrib is thick and prominent and ranges from a width of 1.0 cm at the base of the leaf to about 0.7 to 0.8 cm at a distance equally between the leaf base and the leaf tip. The midrib gradually narrows to 1 to 2 mm as it intersects the dark margin near the leaf tip. The midrib on the adaxial surface is white RHS 155A. On the abaxial leaf side the midrib is a slightly darker green-white RHS 157A. Leaves are held by short, clasping petioles with the petiole wings extending all the way to the base of the leaf blade which gives a thicker look to the petiole and adds to the compact growth habit. Petiole length is approximately half the leaf length. Petiole color is yellow-green RHS 147B on the outsides and extends inward about one-quarter toward the lighter center half, which is yellow-green RHS 154CD. Leaf length averages about twice the width and may reach a length of 37 cm and a width of 16 cm

when mature (Table 1). Stem color underneath the petiole is dark green RHS 137A. The leaves are ovate in shape and gently arch on the plant, resulting in a graceful form.

Performance

Growth characteristics of *Dieffenbachia* 'GoldRush' were determined using 30 liners, 20 weeks from tissue culture and well-rooted in 25-mm cell trays. Liners were potted into 1.6-L plastic pots containing a substrate of Vergro Container Mix A (Verlite Co., Tampa, Fla.). Plants were grown in a shaded greenhouse with a maximum irradiance of 125 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$, natural photoperiod and a temperature range

of 15 to 34 °C. Plants were grown for 5 months from 28 Mar. 2000 until 15 Aug. 2000. Ten plants were grown at each of three fertilizer levels equivalent to N at 101, 134, and 168 $\text{g}\cdot\text{m}^{-2}$ per year. The fertilizer levels were derived from a ratio of 3N–1P–2K applied as a liquid at 100 mL per pot once per week. The experiment was setup in a completely randomized design. Data recorded at termination of the study included height with leaves pulled upright, canopy height and width, length and width of largest leaf, number of basal shoots and a rating for visual quality where 1 = dead; 3 = acceptable (i.e., salable); and 5 = excellent quality. Data were analyzed using analysis of variance procedures of the SAS program (SAS Institute Inc., Cary, N.C.). Parameters with means showing significant differences were subjected to regression analysis.

Dieffenbachia 'GoldRush' grew well and reached marketable size in a 1.6-L container in 5 months. Higher fertilizer level resulted in significantly taller canopy height as well as width of the largest leaf (Table 1). In mature plants, canopy width averaged 46 to 51 cm and was about 1.5 times the canopy height. No other parameters yielded significant differences.

Fig 1. Pedigree of *Dieffenbachia* 'GoldRush'.

Fig 2. A mature *Dieffenbachia* 'GoldRush' in a 1.6-L pot.

Table 1. Final pulled-up height, canopy height and width, length and width of the largest leaf, number of basal shoots, and visual quality of *Dieffenbachia* 'GoldRush' grown at three fertilizer levels for 5 months from 28 Mar. 2000 to 15 Aug. 2000.

N (g·m ⁻² per year)	Pulled-up	Canopy		Largest leaf		No.	Quality ^z
	ht (cm)	Ht (cm)	Width (cm)	Length (cm)	Width (cm)	basal shoots	
101	53.8	29.4	50.8	35.2	15.3	3.2	4.2
134	54.0	32.0	47.0	34.2	16.2	4.2	4.8
168	54.6	33.0	47.8	34.6	16.3	4.0	4.6
Significance	NS	L**	NS	NS	L*	NS	NS

^zVisual rating where 1 = dead; 3 = acceptable (i.e., salable); and 5 = excellent quality.

NS,*,**Nonsignificant or significant at $P \leq 0.05$ and 0.01, respectively; L = linear.

Mature leaves ranged in length from 33 to 37 cm and were about 2.2 times as long as wide. Plants averaged 3.2 to 4.0 basal shoots, thereby eliminating the need for multiple plants grown per pot to achieve a full look. Overall, plant quality averaged good to excellent regardless of fertilizer level.

Availability

Dieffenbachia 'GoldRush' is intended for commercial producers growing finished plants in 1.6- or 3.9-L containers. 'GoldRush' is being patented and plants are being propagated by cooperating Florida tissue culture

laboratories. Inquiries regarding participating laboratories may be obtained by writing to the Florida Foundation Seed Producers Inc., P.O. Box 309, Greenwood, FL 32443. Plants for research purposes may be obtained directly from the author.

Literature Cited

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