‘Diamond Bay’ and ‘Emerald Bay’ *Aglaonema*

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Aglaonema cultivars (family Araceae), commonly called Chinese evergreens are important ornamental tropical foliage plants because they can readily adapt to the low light and low relative humidity levels encountered under interior conditions. Historically, most new *Aglaonema* cultivars were introduced directly from the wild or were sports selected from established cultivars. Control of *Aglaonema* flowering (Henny, 1983) and development of pollination techniques (Henny, 1985) has led to the production of many new cultivars in the past fifteen years by both public and private breeders. *Aglaonema* ‘Silver Bay’ (Henny et al., 1992) and A. ‘Golden Bay’ (Henny and Chen, 2001) were interspecific hybrids developed in the foliage plant breeding program of the Florida Agricultural Experiment Station at the Mid-Florida Research and Education Center (MREC)—Apopka. ‘Silver Bay’ and ‘Golden Bay’ are very popular cultivars because of their beautiful foliage, good growth habit and excellent performance in interior conditions. Commercially, tissue culture propagation has been used to speed release of these hybrids to producers.

Origin

Aglaonema ‘Diamond Bay’ was a mutation found among a population of tissue-cultured *Aglaonema* ‘Silver Bay’ plants, while *Aglaonema* ‘Emerald Bay’ was discovered within a group of tissue-cultured *Aglaonema* ‘Golden Bay’. The original ‘Diamond Bay’ mutation was noticed because it lacked one of the foliar variegation patterns normally present in ‘Silver Bay’, whereas ‘Emerald Bay’ was selected because it lacked the yellow background coloration present in normal ‘Golden Bay’ leaves and petioles. The selections were taken to MREC, increased by stem cuttings and observed for stability. Both selections remained stable while each maintained its new foliar pattern and other desirable traits of their parents. Therefore these cultivars have been selected for release.

Description

Mature *Aglaonema* ‘Diamond Bay’ leaves are lanceolate 10–12 cm wide and 28–30 cm

long. Leaf margins are entire and the lamina on either side of the midrib tends to be of slightly unequal widths, resulting in some curving of the blade towards the narrower side. Leaves exhibit a central grey-green [RHS 191A-B; Royal Horticultural Society (RHS), 1995] area that extends out from each side of the midrib to cover slightly over half of the total leaf surface (Fig. 1). Leaf margins are green (RHS 139A) and meet the lighter grey-green colored central area along irregular borders. The distinct phenotypic leaf variegation pattern is due to the genotype $V^{mf}v$ (Henny, 1986). The underside of the leaves are a uniform green (RHS 137C). The outer petiole wings are yellow-green (RHS 147D) and blend into the petiole center which is a uniform lighter yellow-green (RHS 145C). As it nears the leaf blade the entire petiole color becomes a uniform yellow-green (RHS 147C). The stem color blends from areas that are a darker yellow-green (RHS 146B-C) to lighter areas in the same color range (RHS 152C-D). These colors are not normally visible due to the clasping habit of the petiole which surrounds the stem.

Aglaonema ‘Emerald Bay’ leaves are lanceolate 10–11 cm wide and 30–33 cm long. The leaf margin is entire and the lamina on either side of the midrib tends to be of slightly unequal widths, resulting in a slight curving of the blade towards the narrower side. Leaves

exhibit a central grey-green (RHS 191AB; Royal Horticultural Society, 1995) area that extends out from each side of the midrib to cover slightly over half of the total leaf surface (Fig. 2). Leaf margins are green (RHS 139A) and intersect the lighter grey-green (RHS 191AB) colored central area along irregular borders that often overlap to create small distinct patches of a third color that is a darker grey-green (RHS 189A). These distinct phenotypic leaf variegation patterns are due to the genotype $V^{mf}V^{ef}$ that produces leaves with two variegation patterns superimposed on each other (Henny, 1986). The overlapping areas of the patterns produce segments with the third color. The petiole consists of three colors. The outer wings are yellow-green (RHS 147A) and contain many small blotches spread throughout that are lighter yellow-green (RHS 147B). This pattern blends into the petiole center which is an even lighter uniform (RHS 145C). The stem color is also yellow-green and varying from areas that are darker RHS 147BC to lighter areas of RHS 152A and RHS 152CD. These colors are not readily visible due to the clasping habit of the petiole which surrounds the stem.

Performance

Growth characteristics of *Aglaonema* ‘Diamond Bay’ were determined using 50 newly rooted stem cuttings with 4–5 leaves. Plants were potted into 1.6-L plastic pots containing a substrate of VerGro Container Mix A (Ver-lite 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. Ten plants were grown for 9 months from 10 Oct. 2000 until 13 July 2001 at each of five fertilizer levels equivalent to 101, 134, 168, 202, and 235 g·m⁻² of N per year in a completely randomized design. Fertilizer levels were derived from a 3N–1P–2K ratio applied as a liquid at 100 mL per pot per week.

Fig. 1. A mature *Aglaonema* ‘Diamond Bay’ grown for 9 months in a 1.6-L pot.

Fig. 2. A mature *Aglaonema* 'Emerald Bay' grown for 9 months in a 1.6-L pot.

Table 1. Final canopy height and width, length and width of largest leaf, number of basal shoots and visual quality of *Aglaonema* 'Diamond Bay' grown from cuttings in 1.6-L pots for 9 months from 10 Oct. 2000 until 13 July 2001.

Fertilizer (N) applied per year ($\text{g}\cdot\text{m}^{-2}$)	Canopy height (cm)	Canopy width (cm)	Leaf length (cm)	Leaf width (cm)	No. basal shoots	Visual quality ^z
101	33.5	55.7	29.6	11.4	3.0	4.6
134	33.1	54.9	29.7	11.6	3.4	5.0
168	35.4	54.7	29.3	11.4	3.4	5.0
202	33.1	53.4	29.6	11.3	2.6	4.9
235	32.3	54.0	30.1	11.9	3.0	4.8
Significance ^y	NS	NS	NS	NS	NS	Q*

^zVisual rating where 1 = poor, 3 = saleable, and 5 = excellent quality.

^yRegression analysis where NS and Q* = no significant difference and quadratic significance at the 0.05 level, respectively.

Table 2. Final canopy height, length and width of largest leaf, number of basal shoots and visual quality of *Aglaonema* 'Emerald Bay' grown for 9 months from rooted cuttings in 1.6-L pots from 18 Aug. 1998 until 5 May 1999.

Fertilizer (N) applied per year ($\text{g}\cdot\text{m}^{-2}$)	Canopy height (cm)	Leaf length (cm)	Leaf width (cm)	No. basal shoots	Visual quality ^z
101	35.9	29.5	9.4	2.3	4.2
134	36.8	29.3	9.1	2.4	4.6
168	35.3	29.1	9.3	2.6	4.6
Significance ^y	NS	NS	NS	NS	NS

^zVisual rating where 1 = poor, 3 = saleable and 5 = excellent quality.

^yRegression analysis where NS = no significant difference.

Growth characteristics of *Aglaonema* 'Emerald Bay' were determined using 30 newly rooted cuttings with 4–5 leaves each. The experimental setup was the same as for 'Diamond Bay' except plants were grown for 9 months (18 Aug. 1998 to 5 May 1999) at

three fertilizer levels (due to fewer available cuttings) equivalent to 101, 134, and 168 $\text{g}\cdot\text{m}^{-2}$ of N per year. Data recorded at termination of both growth tests included canopy height, length and width of largest leaf, number of basal shoots and a visual quality rating where

1 = poor, 3 = acceptable (saleable), and 5 = excellent quality. Canopy width was measured for 'Diamond Bay' but not for 'Emerald Bay'. Data were analyzed using analysis of variance (ANOVA) procedures of the SAS program (SAS Institute, Cary, N.C.). Parameters with means showing significant differences were subjected to regression analysis.

Aglaonema 'Diamond Bay' and 'Emerald Bay' both reached marketable size in 9 months. 'Diamond Bay' yielded no significant differences in canopy height or width, leaf size or basal shoot number due to different fertilizer levels (Table 1). Visual quality showed a significant quadratic effect to fertilizer level but all plants were rated as excellent or near excellent in quality. There was a slight loss of quality at the lowest and highest nutritional levels. Plants were well branched averaging ≈ 3 basal shoots per plant. For 'Emerald Bay' there was no significant difference in any of the measurement taken in response to fertilizer level (Table 2). Plants were moderately branched averaging 2 to 3 basal shoots per plant while plant quality averaged from good to near excellent at all nutritional levels.

Availability

Aglaonema 'Diamond Bay' and 'Emerald Bay' are intended for commercial producers growing finished plants in 1.6- or 3.9-L containers. Patent applications for both cultivars have been submitted to the United States Patent and Trademark Office. Plant patent rights have been assigned to the Florida Foundation Seed Producers. Stock plants have been released to cooperating Florida tissue culture labs for propagation and distribution. Inquiries regarding participating labs may be obtained by writing the Florida Foundation Seed Producers, P.O. Box 309, Greenwood, FL 32443. Plants for research purposes may be obtained directly from the author.

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