‘Pearls and Jade’ Pothos

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Additional index words. *Epipremnum aureum* ‘Pearls and Jade’, pothos, golden pothos, foliage plant, foliage plant production, plant breeding

Epipremnum aureum (family Araceae), commonly referred to as pothos or golden pothos, contains some of the most popular and durable interior tropical ornamental foliage plants. The genus *Epipremnum* and its 10 known species are tree-climbing vines native to the Solomon Islands. In tropical settings, pothos can grow to be large in size, climbing trees 50 feet tall and producing lobed leaves up to 3 feet in length. Plants used for interiorscape purposes such as pedestal plants, totems, hanging baskets, ground-covers, dish gardens, and small desk plants usually have heart-shaped leaves that rarely exceed 6 inches in length. Common commercial cultivars include the standard golden pothos (green leaves with varying degrees of irregular yellowish variegation), marble queen (white variegation), jade (uniform dark green leaves with no variegation), and neon, which displays uniform chartreuse-colored leaves (Chen et al., 2002).

Origin

Pothos plants do not flower under greenhouse or interior environments and seldom flower even within the native habit (Henny et al., 2004). No hybridized pothos cultivars are known to exist. Because of the commercial importance of this crop and the difficulty in its hybridization, we initiated a program at the Mid-Florida Research and Education Center (MREC) in Apopka, FL, to induce mutations in available cultivars. Pothos ‘Pearls and Jade’ is a selection from that program. Pothos ‘Pearls and Jade’ is a mutation selected from a group of pothos ‘Marble Queen’ plants that had been irradiated once with 6.5 gray of gamma rays from a Cesium 137 source that emitted 9.18 gray/minute. Six months after irradiation, a shoot appeared on one plant as a single uniform stem mutation. The mutant was isolated and asexually increased by tip and single node cuttings for

2 years to produce stock plants for further evaluation. During this process, it was determined that the growth habit and variegation pattern of pothos ‘Pearls and Jade’ were stable and suitable for introduction as a new cultivar.

Description

Pothos ‘Pearls and Jade’ is a small plant compared with other pothos cultivars. Mature leaves from ‘Pearls and Jade’ reach an average of 7 to 8 cm long and 4 to 5 cm wide compared with 12 cm × 8-cm leaves on the parent plant ‘Marble Queen’. ‘Pearls and Jade’ leaves display areas of white, gray, and green coloration in irregular patches. Color includes blotches, streaks, and islands of green (RHS 137A; Royal Horticultural Society, 1995), grayed-green (RHS 191A), and white (RHS 155A–B). Different colored areas vary in size from less than a 1-mm dot to large blotches covering over half the leaf surface. The variegation is visible on both the adaxial and abaxial sides of the leaves. Each leaf varies slightly, typical for most variegation patterns in this genus, but the overall phenotypic effect is a pleasing uniform variegated appearance (Fig. 1). The tops of the stems, where vines are exposed to higher light levels, display a faint, striped effect as a result of narrow, alternating bands of grayed-green (RHS 191A) and grayed-green (RHS 191B). This stem coloration blends into the underside of the vine in a similar pattern but with an overall lighter variegation made up of stripes of yellow-green (RHS 146C) and yellow-green (RHS 146D). Petiole coloration follows the same color and variegation pattern as the stems (vines). Petiole lengths tend to approximate the attached leaf blade length and range from 3 to 8 cm. Internode lengths vary from 2 to 7 cm depending on light levels with lower light resulting in longer distances.

Performance

Using pothos ‘Pearls and Jade’ stock plants that were maintained in a shaded greenhouse at MREC Apopka, 10 tip cuttings 2 to 3 cm in length and displaying one to two expanded leaves were harvested and stuck 10 per pot in both 0.6-L and 1.6-L pots containing Fafard 2 Mix (Conrad Fafard, Inc., Agawam, MA; 55% Canadian peat:25% perlite:20% vermiculite) in Dec. 2007. The cuttings were rooted within a propagation

chamber to maintain high humidity (maximum irradiance of 80 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$) in a shaded greenhouse (maximum irradiance of 125 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$) and under natural photoperiod within a temperature range of 15 to 34 °C. The cuttings were rooted and removed from the propagation chamber in Jan. 2008. One week later, plants were fertilized with Nutricote (18N–2.6P–6.6K; 140-d formulation; Chisso-Asahi Fertilizer Co., Ltd., Tokyo, Japan). Plants in 0.6-L pots (10 replications per treatment) received 1.5, 2.5, or 3.5 g, whereas 1.6-L pots (eight replications per treatment) were treated with 3.5, 5.0, or 7.5 g. Pots were set on raised benches in a completely randomized experimental design and hand-watered as needed.

Data recorded after 12 weeks of growth included canopy height and width, length of the longest vine (plus the number of expanded leaves, number of nodes, and length and width of largest leaf on that vine), and a visual quality rating where 1 = dead, 2 = fair, 3 = acceptable (saleable quality), 4 = good, and 5 = excellent quality. Data were analyzed using analysis of variance procedures of SAS (SAS Institute Inc., Cary, NC).

Results

Pothos ‘Pearls and Jade’ performed well at all fertilizer levels, showing no significant differences in any parameters measured (Tables 1 and 2). Overall plant quality averaged between good and excellent in both experiments. In each test, all plants were above salable quality. After final growth data were collected, all plants were moved into an interior growth room for 3 months with a light level of 25 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ for 12 h daily at a constant 24 °C to test for ability to tolerate the low light levels of interiorscape environments. After 3 months, plants had continued to perform well with no loss of foliar coloration and overall plant quality rating of good to excellent.

Availability

Pothos ‘Pearls and Jade’ is intended for commercial producers growing finished ornamental tropical foliage plants. Trademark and Plant Patent Rights issued through the

Fig. 1. Pothos ‘Pearls and Jade’ after 12 weeks of growth in a 1.6-L pot that initially contained 10 single eye cuttings.

Received for publication 30 Jan. 2009. Accepted for publication 28 Feb. 2009.

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Table 1. Canopy height and width, longest vine length, number of expanded leaves, number of nodes, largest leaf length and width, and visual quality of Pothos 'Pearls and Jade' after 12 weeks growth (Jan. to Apr. 2008).

Effects of Nutricote ^z on growth and yield of 'Charm' grape (June to Sept. 2000)								
Nutricote ^z grams per 0.6-L pot	Canopy ht (cm)	Canopy width (cm)	Longest vine					Final visual quality ^y
			Length (cm)	No. of expanded leaves	No. of nodes	Length of largest leaf (cm)	Width of largest leaf (cm)	
1.5	11.0	20.3	18.8	7.8	8.8	6.6	4.1	4.4
2.5	11.4	20.6	22.0	7.8	8.8	6.8	4.4	4.6
3.5	11.9	21.3	19.1	7.7	8.7	7.2	4.7	4.5
Significance ^x	NS	NS	NS	NS	NS	NS	NS	NS

^zNutricote 140-d slow-release fertilizer (18N-2.6P-6.6K) applied as g/pot/3 months.

^yVisual quality rating where 1 = dead, 2 = fair, 3 = acceptable (saleable quality), 4 = good, and 5 = excellent quality. Ten replications per treatment.

^xStatistical significance where NS = no significant differences.

Table 2. Canopy height and width, longest vine length, number of expanded leaves, number of nodes, largest leaf length and width, and visual quality of Pothos 'Pearls and Jade' after 12 weeks growth (Jan. to Apr. 2008) in 1.6-L pots.

Nutricote ^z grams per 1.6-L pot	Canopy ht (cm)	Canopy width (cm)	Longest vine					Final visual quality ^y
			Length (cm)	No. of expanded leaves	No. of nodes	Length of largest leaf (cm)	Width of largest leaf (cm)	
3.5	12.1	22.8	19.8	8.8	9.8	7.0	4.7	4.2
5.0	12.6	22.9	20.5	8.5	9.4	7.2	4.6	4.2
6.5	12.4	24.4	23.0	8.8	9.8	7.2	4.6	4.6
Significance ^x	NS	NS	NS	NS	NS	NS	NS	NS

^zNutricote 140-d slow-release fertilizer (18N-2.6P-6.6K) applied as g/pot/3 months.

^yVisual quality rating where 1 = dead, 2 = fair, 3 = acceptable (saleable quality), 4 = good, and 5 = excellent quality. Eight replications per treatment.

^xStatistical significance where NS = no significant differences.

U.S. Patent and Trademark Office will be assigned to the University of Florida Board of Trustees. Stock plants will be released to licensed Florida growers for propagation and distribution. Inquiries regarding licensing may be sent to Florida Foundation Seed Producers, Inc., P.O. Box 110200, Gainesville,

FL 32611. Plants for research purposes may be obtained directly from the author.

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