Two *Nandina domestica* Cultivars Perform Well as Interior Foliage Plants in Market Evaluations

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Abstract. Tissue-cultured plugs of *Nandina domestica* Thunb. 'Hat-hour Dwarf' and 'San Gabriel' were grown in 1.5-liter pots under 30%, 47%, or 62% shade. After 20 weeks, plants were moved to a simulated consumer environment (SCE) maintained at 21C, ≈60% relative humidity, and a 12-hour photoperiod with an irradiance of 7 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$. Final quality ratings (after 35 weeks in the SCE) for both cultivars were good, but the plant quality of 'San Gabriel' declined more quickly than that of 'Harbour Dwarf'. Final quality rating of 'Harbour Dwarf' grown under the highest percentage of shade was higher than that of plants grown under 30% or 47% shade; production shade percentages had no influence on the final quality rating of 'San Gabriel'. Plants (of both cultivars) grown in 0.6-liter (11-cm-diameter) pots were test-marketed through six supermarket floral departments and captured 16% of total 10- to 11-cm-size foliage plant sales. Sixty percent of consumers indicated the plant's "newness" as the primary consideration for its purchase. These two *N. domestica* cultivars could be marketed successfully as interior foliage plants.

Production and sale of foliage plants have stabilized in the past 10 years, a phenomenon indicating that the market has matured for existing varieties of foliage plants (Johnson and Napper, 1989). New or improved products often are introduced to "restart" a product's life cycle, a strategy that generates additional sales and profits (Mason and Mayer, 1984). Introducing new foliage plants may restart the life cycle of mature foliage plants, thereby increasing sales and profits for plant retailers.

One of the highest-volume sales retailers of foliage plants is supermarkets; 92% sells foliage plants (The Packer, 1989). Supermarkets earned \$1 billion in sales on foliage plants through their floral departments in 1986 (Kress, 1987). A high-volume supermarket floral department can sell six to twelve 10-cm-size foliage plants each week (Everett Alder, personal communication).

Several temperate-zone landscape plants have been adapted for use as interior foliage plants. In a simulated consumer environment (SCE), production and postproduction quality of *Nandina domestica* 'Wood's Dwarf' (heavenly bamboo) and several other temperate-zone landscape plants were improved by re-

ducing irradiance during production (Keever et al., 1988). *Nandina domestica* is a frequently planted, woody landscape shrub. Its cultivars Harbour Dwarf and San Gabriel have shown promise as potted foliage plants in preliminary evaluations. The objectives of this research were to determine the postproduction performance and market potential for 'Harbour Dwarf' and 'San Gabriel' as potted foliage plants.

Postproduction evaluation. Tissue-cultured plugs of 'Harbour Dwarf' and 'San Gabriel' were potted on 1 June 1990 in 1.5-liter containers using a medium of 7 pine bark : 1 sand (v/v) amended per cubic meter with 3.0 kg dolomitic limestone, 0.9 kg Micromax micro-nutrient fertilizer (Grace-Sierra, Milpitas, Calif.), and 8.3 kg Osmocote 18.0N-2.6P-10.0K (Grace-Sierra). Plants were grown in Mobile, Ala., under polypropylene shade cloth providing either 30%, 47%, or 62% shade. Ten plants per shade treatment per cultivar were arranged in a completely randomized design within cultivars. Plants were moved on 23 Oct. to an SCE maintained at 21C with an irradiance of 7 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ provided by cool-white fluorescent lamps from 0600 to 1800 HR. Relative humidity was monitored and averaged 60%. Plant quality data were collected at the beginning and end of the postproduction evaluation (35 weeks) on leaflet drop and growth index [(height + width + width)/3]. Plant quality was rated on a scale of 1 to 5, with 1 = poor, unsaleable; 3 = good, some leaflet abscission, saleable; and 5 = excellent. Data were tested by analysis of variance and means were separated using Duncan's multiple range test.

Quality ratings of both cultivars were good (3.0 or higher, Table 1) after 35 weeks in the SCE. 'Harbour Dwarf' grown under the highest percentage of shade had a final plant qual-

ity rating significantly higher than that of plants in 30% or 47% shade. The initial quality rating of 'San Gabriel' produced under the two highest percentages of shade was higher than that of plants grown under 30% shade, but the difference may not be commercially important. Shade percentages did not influence the final quality rating of 'San Gabriel'. Plant quality ratings of 'San Gabriel' initially were higher than those of 'Harbour Dwarf'; however, quality ratings of 'Harbour Dwarf' grown under 62% shade decreased from 4.5 to 4.0 during the 35-week evaluation, while the quality ratings of 'San Gabriel' dropped to 3.0, regardless of shade percentage (Table 1). Growth indexes and total leaflet drop within a cultivar were similar, regardless of the percentage of shade during production.

Market potential and consumer perception. 'Harbour Dwarf' and 'San Gabriel' plugs were planted in 0.6-liter (11-cm-diameter) pots using a medium as described for the postproduction evaluation. Plants were grown to a marketable stage (12 to 16 weeks) in a greenhouse with a night air minimum of 21C. Before the plants were shipped, tags were added to the pots to identify the plants and inform customers how to care for them. Plants were placed in paper sleeves, boxed, and shipped via common carrier to the stores. A self-addressed, stamped postcard survey form was attached to the pot. We requested the purchaser or gift recipient to complete and return the survey form.

Test plants were sold in two Birmingham, one Auburn, and one Opelika, Ala., and two Columbus, Ohio, supermarket floral departments. Ten plants of each cultivar were shipped to each of the six cooperating stores for testing in separate 4-week studies. 'Harbour Dwarf' was evaluated from 25 Sept. to 23 Oct. and 'San Gabriel' from 23 Oct. to 23 Nov. 1990. Direct production costs were \$2.05 for 'Harbour Dwarf' and \$1.32 for 'San Gabriel'. The difference in cost was due to the longer production time and higher plug cost of 'Harbour Dwarf'. Plants were test-marketed at a price of \$2.99, comparable in price to other foliage plants in the same container size.

Table 1. Influence of shade percentage during production on initial and final quality ratings of 'Harbour Dwarf' and 'San Gabriel' *Nandina domestica* after 35 weeks in a simulated consumer environment.

Shade (%)	Quality rating ^a	
	Initial	Final
<i>Harbour Dwarf</i>		
30	3.0 b ^c	3.1 b
47	3.8 ab	3.5 b
62	4.5 a	4.0 a
<i>San Gabriel</i>		
30	4.8 b	3.0 a
47	5.0 a	3.0 a
62	5.0 a	3.0 a

^aData taken when plants were moved to a simulated consumer environment; quality ratings on a scale of 1 to 5: 1 = poor, unsaleable; 3 = good, some leaflet abscission, saleable; 5 = excellent.

^bMean separation within columns and cultivars by Duncan's multiple range test, $P \leq 0.05$.

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Of the foliage plants sold per store, 'Harbour Dwarf' captured 6.6% and 'San Gabriel' 11% of the weekly sales.

Thirty percent (n = 120) of the postcards was returned. Of those responding, 90% was female and 10% male. Twenty-six percent had completed a high-school education or less, and 44% had completed at least 4 years of college. The average years of education completed was 14.7. The median age was 49 years. No other demographic information was collected. Most consumers (78%) purchased only one *N. domestica*. Most of the plants purchased were for personal use (90%), and the rest were purchased as gifts.

Consumers from all participating stores were asked to rate the importance of six characteristics pertaining to the foliage plants: the plant's newness, pest and disease resistance, small size, price, and form and the ability to use the plant inside the home. Respondents

differed as to which attribute was most important: newness, 60%; pest and disease resistance, 50%; use inside the home, 47%; price, 38%; small size, 35%; and form, 29%. Price, which was low, was rated least important by the most respondents (29%); plant form (16%) and its use inside the home (14%) also were rated unimportant. Thus, when prices of other foliage plants were equal, the plant's newness was identified as an important factor to most of the purchasers.

The consumer perception reported here and the sales data indicate that 'Harbour Dwarf' and 'San Gabriel' have good potential in the marketplace as interior foliage plants. Although both cultivars performed well in an interior environment, the quality ratings of 'San Gabriel' decreased more than those of 'Harbour Dwarf' during the 35-week postproduction evaluation. Market information indicated that consumers appreciate these cultivars for their

newness and were willing to purchase them at a price similar to that of other foliage plants of the same size.

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