HRI's Mission:

To direct, fund, promote and communicate horticultural research, which increases the quality and value of ornamental plants, improves the productivity and profitability of the nursery and landscape industry, and protects and enhances the environment.

For seeds germinated at 25°/15°C (77°/59°F) there were no significant germination responses up to day 12 (Table 1, Fig. 2B). By day 15, a highly significant linear response and a significant quadratic response were observed. By day 18 both responses became highly significant and continued to day 30.

Although light was essential for germination at both temperatures, photoperiods of 12 and 24 hr appeared to inhibit germination at 25°/15°C (77°/59°F) (Fig. 2B). This was not noted at 25°C (77°F). Beginning at day 18 and continuing to day 30, germination under an 8 hr photoperiod was always greater than photoperiods of 12 and 24 hr. A similar response was reported by Blazich et al. (1) for seeds of catawba rhododendron whether germinated at 25°C (77°F) or 25°/15°C (77°/59°F). However, for seeds of catawba rhododendron, inhibition at 25°C (77°F) dissipated by the end of a 30-day germination period while the inhibition was still present after 30 days (1) at 25°/15°C (77°/59°F), which is similar to data in Fig. 2B.

Germination >87% was achieved at 25°/15°C (77°/59°F) for the split photoperiod and photoperiods of 2 to 24 hr (Fig. 1B). This is a minimum of 24% greater than the 70% germination realized under constant light at 25°C (77°F), although germination commenced earlier at 25°C (77°F) (Fig. 1A). Faster initial germination at 25°C (77°F) in comparison to germination at 25°/15°C (77°/59°F) has also been reported for other ericaceous species (1, 7, 8).

Data in Fig. 1 suggest that light stimulation of seed germination of *L. fontanesiana* is phytochrome mediated (2). This is illustrated by comparing germination of the split photoperiod (two 1/2 hr exposures separated by 7 1/2 hr of darkness) with a single continuous light treatment of 1 hr. At 25°C (77°F), 30-day germination under the split photoperiod was 39% greater than the response under a 1 hr photoperiod and at 25°/15°C (77°/59°F) the response was 13% greater.

Seeds of *L. fontanesiana* are very small. Following collection and drying to a moisture content of 3% there were approximately 640,000 seeds per 28 g (1 oz). Small seed size plus the requirement of light for germination should caution nurserymen not to cover the seeds during propagation.

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Buyer Perceptions of Foliage Trade Shows: Implications for Marketing[1]

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Abstract

A ten question survey was mailed to all registered buyers of the 1988 Foliage Expo trade show in Hallandale, Florida to seek their opinions on the performance of the show, to better understand the buyer profile, and gain insight into the effectiveness of these shows as marketing tools. Based on the results of this survey, it appears that an important target group, namely the retail trade sector, were not being drawn in sufficient numbers to this particular trade show. These findings indicate that sponsors may not have clearly identified the intended audience, determined unambiguously the preferences of this audience, nor effectively advertised and promoted the trade exhibition.

Index words: Foliage plants, market research, merchandising

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Significance to the Nursery Industry

Trade exhibitions are an important marketing tool utilized by the foliage industry, yet the benefits from these shows have become increasingly dubious. A major finding of this

study is that an important target group, the retail trade sector, was not being drawn to the show in adequate numbers. This implies serious flaws in sponsors' current procedures for reaching important clientele. If nursery trade shows are to remain viable, sponsors must use more effective market research and merchandising strategies. Specifically, a clear knowledge of target audiences, their expectations regarding exhibit attributes, and the identification of appropriate advertising media, are central to the success of trade exhibitions.

Introduction

Horticultural trade shows have become established functions of many state trade associations in the landscape or foliage plant production industry, with the number of regional shows steadily increasing up until the last few years. The Florida Foliage Association (FFA) sponsored two foliage trade shows within Florida, Foliage World, held in Orlando in January, and Foliage Expo, a summer show in south Florida. The sponsorship of two regional expositions reflects the two primary locations of foliage plant production in Florida. The industry in central Florida primarily produces smaller containerized material in enclosed greenhouses and is highly mechanized (5). The south Florida industry produces large, acclimated specimens for the interiorscape trade, as well as containerized material for the mass market, relies heavily on hand labor, and for the most part utilizes open shade structures as the growing environment (5). Additionally, the Florida Nurserymen and Growers Association (FNGA) sponsors the Tropical Plant Industry Exposition (TPIE), held annually each January in Miami. The emphasis at TPIE is also on tropical foliage for the interior, but a number of landscape plant producers participate as well.

Despite the reliance on trade expositions as a marketing tool, little or no effort has been made in the past to survey and determine a profile of the audience. A lack of information on the industry's major marketing device seems unfortunate in light of the weak market situation that has plagued the foliage plant industry in recent years (1, 2). Moreover, when one considers the steady increase in the number of trade shows and the concomitant decline in exhibitor and buyer attendance, this attribute of 'diminishing returns' further underscores the need for additional information. The objective of our research was to survey the attendees at a major horticultural trade show and gain insight into the effectiveness of these shows as marketing tools. Based on survey findings, we outline potential strategies which could prove helpful to foliage trade exhibitions.

Materials and Methods

One thousand individuals from across the United States and Canada who registered as buyers at the June, 1988 Folige Expo were mailed a copy of a ten question survey (Table 1) approximately 1 month after the show. Total returns numbered 120 representing a 12 percent response rate after two months from the mailing.

The questionnaire was designed in closed-end form to facilitate data compilation and analysis. This approach produced frequency data which were then categorized into "groups" or cells. The primary classification variable was size of business operation (Question 3, Table 1). Additional variables examined for significance were reasons for attending the trade show (Question 1, Table 1), dollar amount purchased (Question 5, Table 1), and the number of shows attended (Question 6, Table 1). Crosstabulations of the variables were created using PC-SAS (SAS Institute, Cary, NC) and a Chi-square was employed to test for independence.

Table 1. Florida Foliage Expo buyer survey.

1. The main reason you attended Foliage Expo was
   a. to make purchases
   b. to attend the seminars
   c. to make business contacts
   d. to find out what new material is available
   e. as a social event primarily
2. How would you characterize your primary business?
   a. retail nursery, garden center
   b. wholesale nursery, liner production
   c. wholesale nursery, finished material
   d. florist
   e. interiorscaper
   f. broker
   g. horticultural consultant
   h. educator
   i. industry supplier (allied firm)
3. On the basis of its gross annual sales of goods or services, how would you characterize the size of your business?
   a. large (> $1,000,000)
   b. moderately large ($500,000–1,000,000)
   c. medium ($100,000–500,000)
   d. small (< $100,000)
4. If you made or arranged purchases at Foliage Expo, what area below would characterize them? If more than 1 (one), please number in order of importance.
   a. plants c. equipment e. fertilizers
   b. containers d. growing media f. pesticides
5. If you made or arranged purchases at Foliage Expo, please circle the dollar amount that most closely approaches what you spent:
   a. less than $100 c. between $500 and 1000
   b. between $100 and 500 d. more than $1000
6. How many Florida trade shows do attend each year?
   a. 1 c. 3 e. 5
   b. 2 d. 4 f. more than 5
7. Do you believe that there are too many trade shows?
   a. yes b. no
8. Do you also attend Foliage World in Orlando? If you answered yes, indicate how you feel Foliage Expo rates compared to Foliage World in the second column.
   a. yes a. better
   b. no b. worse
   c. equal
9. Do you attend TPIE in Miami? If you answered yes, indicate how you feel Foliage Expo rates compared to TPIE in the second column.
   a. yes a. better
   b. no b. worse
   c. equal
10. What do you think is the single most important way in which Foliage Expo could be improved?
    a. no improvement necessary
    b. more educational programs
    c. better displays
    d. change time of year it occurs
    e. change location
    f. open show to general public on last day

Results and Discussion

Wholesale growers of finished foliage comprised 37% of the attendees in our sample, with interiorscape firms occupying the next highest category at 29% (Fig. 1). Noticeably under-represented in the sample were retail garden centers (including mass merchandisers) and florists, ac-

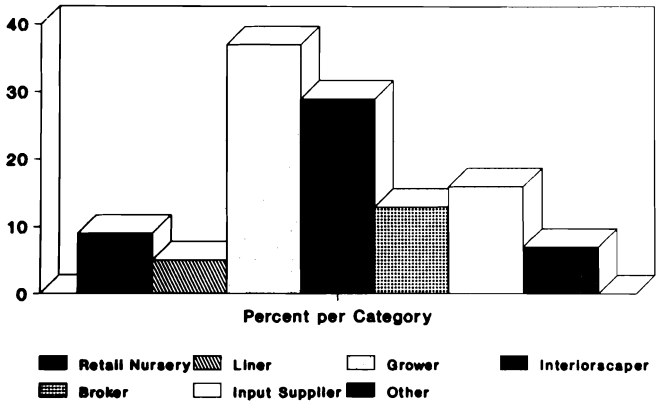

Fig. 1. Business categories of surveyed buyers attending Foliage Expo.

counting for 9% and 3% of the sample, respectively. Within all business categories, firms of each size class (see Tables 1–3 for definitions) were evenly represented.

Sixty-two (62) percent cited that making business contacts was the most important reason for attendance, rather than finding new plant material (42%). Making business purchases ranked as the third most important reason for attending (19%). Size of operation was strongly correlated with the reason for attendance ($P > 0.05$). The major reason that large firms attended was to make business contacts, whereas small firms (< $100,000 gross annual sales) emphasized locating new plant material as the most important reason for coming to Foliage Expo (70%), placing business contacts at a distant second (36%). Plant material was the most important item purchased among 80% of the respondents. Various materials supplied by allied firms were considerably less important, and all were rated within a few percentage points of each other.

Just over half of the respondents spent over $1000.00 in purchases at the Expo (Fig. 2). As might be expected, large firms (> $1,000,000 gross annual sales) were located in the highest purchasing categories, whereas smaller operations (< $100,000 gross annual sales) were predominantly in the lowest dollar purchase categories ($P > 0.10$). Wholesale growers of finished material, the type of business in greatest attendance based on our sample, had the smallest percentage of purchases over $1000.00 compared to retail

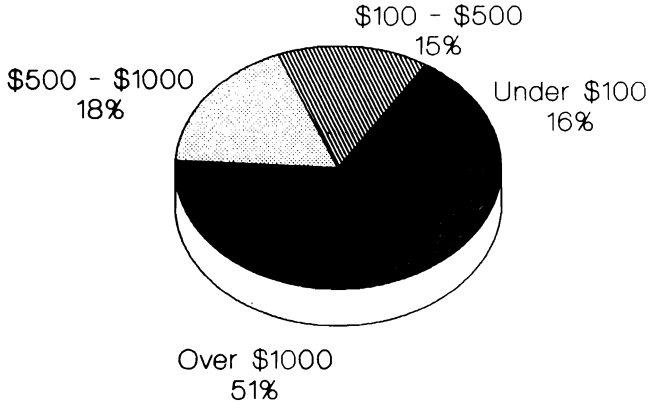

Fig. 2. Dollar amounts of purchases by surveyed buyers at Foliage Expo.

outlets, liner producers, florists, interiorscapers, brokers and even horticultural consultants.

Among the respondents, attendance at trade shows averaged 2–4 times per year, with a correlation to firm size ($P > 0.05$). Approximately 75% of the larger and medium-sized businesses attended 3 or more shows annually, while only 17% of the small businesses attended that number of trades (Table 2). Less than half of the respondents overall believe that there are too many trade shows (Table 3), but these sentiments once again exhibited a discrepancy based on business size. Over half of the larger firms agreed with this statement in contrast to 11% of the smaller businesses. This finding is interesting given the fact that large firms actually attended more shows on an annual basis than did smaller operations.

Half of the sample had attended Foliage World in Orlando, and a third of this group considered Foliage Expo superior. Nearly one-fourth rated Expo as inferior to the Orlando show, with the remainder (38%) placing them equal in quality. A larger percentage had attended TPIE (73%), and 58% considered the Miami exposition to be superior to Foliage Expo. Sixteen percent rated Foliage Expo as better than TPIE, and 19% considered the two shows equal.

Seventeen (17%) percent of the sample felt that Foliage Expo needed no improvement, while over 1/4 of the respondents suggested changing the time of year that the show occurs (Fig. 3). One-fifth (20%) of the respondents indicated a need for more educational programs and changing the location, respectively. Only 13% felt that the show should be opened to the general public on the last day.

Written comments by the participants shed some further insight into the dynamics of trade show strategy. Many stated the need to attract more people and buyers. Suggestions included combining several shows, alternating locations, and providing incentives for attendance (dinners, contests or other promotions).

The results of this survey strongly suggest that Foliage Expo was not attracting the important retail market in sufficient numbers. In 1975, over 40% of state-wide foliage sales in Florida were to various retail outlets (6), and recent trends suggest that this percentage has probably increased (Haydu, unpubl. data). Nonetheless, this important market segment was represented by only 12 percent of the sample. In contrast, over 1/3 of respondents identified themselves as wholesale growers of finished material, also the main category of exhibitor at Foliage Expo. Consequently, our

Table 2. Number of trade shows attended per year by buyers at 1988 Foliage Expo.

No. of Shows Attended	Firm Size[z]			
	Large	Mod. Large	Medium	Small
	Percent Attending			
1	6	0	6	17
2	21	23	19	59
3	26	18	23	7
4	24	36	35	10
5	0	5	0	0
> 5	24	18	16	0

[z]Based on gross annual sales; large (> $1,000,000), moderately large ($500,000–1,000,000), medium ($100,000–500,000), small (< $100,000).

Table 3. Response of buyers to the question: "Do you believe there are too many shows?"

Response	Firm Size[z]			
	Large	Mod. Large	Medium	Small
	Percent Response			
Yes	50	57	45	11
No	41	35	55	89

[z]Based on gross annual sales; large (> $1,000,000), moderately large ($500,000–1,000,000), medium ($100,000–500,000), small (< $100,000).

data suggest that the show, in drawing most heavily from the same audience that is likely to be exhibiting, was self-serving to some extent. This observation is borne out by examination of respondent buying patterns. Wholesale growers of finished material had one of the lowest percentages of purchases in excess of $1000.

These findings suggest that while trade shows are an important marketing tool, they are probably not used in the most effective manner. This assertion is supported further by the authors' informal discussion with both attendees and exhibitors at numerous Florida trade shows over the past 3 years. Two related factors lead us to this conclusion. First, a central issue lies not with the number of shows, *per se*, but rather with their content. Even though products exhibited and the audiences who attend may vary across trades, programmatic features of the show are not tailored to take these differences into account. Therefore, from the point of view of attendees, trade shows are likely perceived as a homogeneous product. At the same time, recall that large firms attended trade shows much more frequently than smaller businesses. Furthermore, it is unlikely that the needs, wants, and expectations of these two groups are similar. A second point is that there may be serious flaws in current methods of reaching intended audiences, particularly through advertising and promotional programs. The fact that wholesale growers were not a primary buyer group and yet constituted a major presence at the show, suggests that advertising media were either intentionally or unintentionally targeting this group, rather than to the more desirable "buyer" segments, like retailers and interiorscapers. In sum, poor buyer attendance may be attributed to too many shows which are "stamped from the same mold" and improper or inadequate targeting of intended markets.

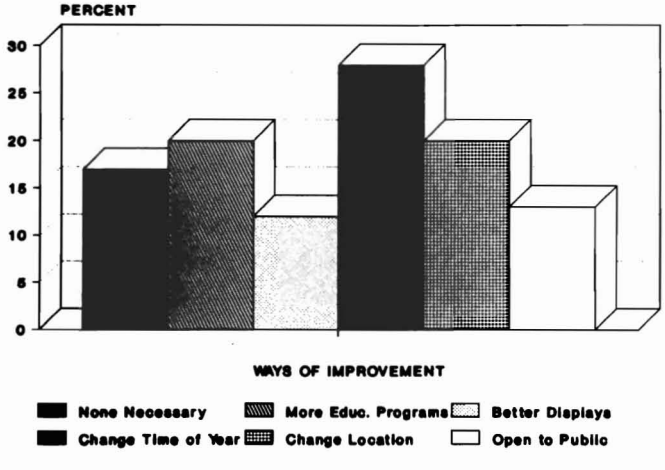

Fig. 3. Surveyed buyers' suggestions for improving Foliage Expo.

To address this problem, two questions should be considered; *who* is the intended audience; and *why* should the target audience attend trade shows? Identifying the target audience takes into account that it is extremely difficult to provide "all things to all people", without compromising the end product. This is because available resources, particularly management skills and capital, will in many cases be inadequate for large scale programs. The question of target audience addresses whether or not the benefits from attending a show outweigh its costs. Not only must attendees derive positive net benefits from a trade show, these gains must be clearly apparent to them. This underscores the importance of circumscribing target audiences—by knowing them well, it is easier to determine what they *want and expect*. Therefore, one would anticipate a negative correlation between the number of distinct groups one caters to and a show's capacity to satisfy them adequately.

Today trade shows are operating within an extremely dynamic and complex economic environment. The trade show industry is competing with many other industries for the same customers. Moreover, these customers are faced with an increasing number of choices. Decision on what to buy or what business activities to attend are becoming more difficult. Similarly, the decision making process is constrained by two increasingly scarce resources, money and time. To market trade shows effectively, the task becomes one of simplifying and clarifying feasible choices, while simultaneously taking into account the limitations confronting buyers. Accomplishing this requires implementing a marketing program that is tailored expressly to trade shows.

A complete marketing program consists of two inter-related components, market research and merchandising (3). A major purpose of market research is to reduce financial risks that commonly attend business ventures. Naturally, the costlier the show, the greater inherent risk sponsors will face. Useful market research identifies potential market niches, evaluates target markets based on appropriate criteria, determines unambiguously the preferences of the prospective client group(s) and how best to satisfy customer expectations (4).

The importance of market research cannot be overstated. Although merchandising is the second step in the marketing process, its success depends on the accuracy of the research and the extent to which study findings are actually adopted. The logic is straightforward; by knowing the preferences and expectations of potential client groups, trade shows should readily sell themselves. This implies that successful market research minimize the obstacles and subsequent expenditures of a merchandising program.

The purpose of merchandising is to enhance the profitable sales of goods and services. It achieves this by utilizing information obtained from market research. For trade shows, at last five merchandising components should be considered; including image and atmosphere, layout and displays, product factors such as quality and variety, pricing strategies, and off-site advertising and promotion. Ultimate success depends on how successfully these components are blended together into an overall strategic marketing program that gives the show a competitive advantage over other trade exhibitions. The key is to make the show clearly noticeable, different, and worth the expense of both time and money.

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Effect of Seasons and Irrigation Regimes on Plant Growth and Water-Use of Container-Grown *Photinia* × *fraseri*[1]

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Abstract

Water-use and plant growth of Fraser photinia (*Photinia* × *fraseri* Dress) were studied under varying irrigation regimes during 2 different growing seasons, winter and summer. Rooted cuttings were transplanted into 7.57 l (2 gal) plastic containers containing Metro-mix 500 and greenhouse-grown under 2 irrigation frequencies (3.5 or 7-day intervals) and 3 replacement amounts (100%, 75% or 50% replacement of actual water-use).

Increased irrigation frequency significantly reduced plant growth parameters of winter-grown plants, including shoot growth, leaf number, leaf area and shot dry weight. Decreased irrigation amount significantly increased root dry weight. Significant differences were not detected in growth measurements of summer-grown plants suggesting differences between experiments are seasonal in nature. Frequent irrigation resulted in poor plant performance under winter growing conditions of lower evapotranspiration (ET); however under summer growing conditions, frequent irrigation did not significantly affect plant growth.

Decreased irrigation frequency significantly increased total water-use for winter-grown plants due to increased plant performance. No significant differences in water-use due to frequency in summer-grown plants was found.

Index word: Fraser photinia

Significance to the Nursery Industry

Plant growth data from these experiments indicate that maintaining high medium moisture levels through frequent irrigations does not always stimulate growth and quality, especially during winter growing conditions. The data suggest that poor aeration is enhanced by frequent irrigation and results in decreased plant growth of *Photinia* × *fraseri* grown in containers filled with Metro-mix 500. In this study, high water contents were maintained in the medium of each treatment; therefore, reduced plant performance due to water deficits and low water potential of the medium was not evident.

Variation in water holding capacities and porosity of growing media requires that nursery managers and research scientists monitor medium moisture levels and ET rates to optimize plant growth and irrigation water-use and/or validate research findings. For Metro-mix 500, a medium with high water-holding capacity, there seems to exist a fine line between optimum irrigation and excess irrigation. This is especially true under conditions of low ET rates combined with high medium moisture levels often experienced in greenhouse and nursery operations during winter months. Careful consideration should be given to irrigation scheduling during such periods to avoid plant damage by saturated medium environments and poor medium aeration. Fixed irrigation schedules for long-term convenience should be avoided due to variations in ET rates, media moisture capacities and plant development.

Introduction

Fraser photinia (*Photinia* × *fraseri* Dress) production represents as much as 10% of annual production of woody landscape plants in container nurseries throughout the southern U.S. Despite the popularity of this landscape species, the optimum irrigation regime for Fraser photinia production is not known.

A standard irrigation practice for the nursery industry involves frequent watering schedules (ie., daily, twice daily) to maintain high moisture levels in the growing medium (7). This schedule is believed to avoid reduced plant quality and growth caused by lack of water; therefore, excess water is often applied.

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