

questioned by enumerators. Passive surveys that attendees *must fill out* on their own generally have a lower response ratio and a higher incidence of misinterpreted questions. A personal interview method also allows more flexibility and in-depth discussion, thus providing more valuable information. Limit the survey to one page asking only those questions essential to the study. In addition to speeding up the survey process, leaving out non-essential questions simplifies subsequent analysis by limiting the number of variables requiring comparison. Contrary to expectations, most people are willing to share information they believe will improve the show, including expenditures. An inexpensive gift like a flower has been useful at Broward County shows to increase survey participation. Pre-testing the survey instrument is important to insure that questions are accurate and easily understood (3). The survey can be refined each year for an annual show but the basic format should be set up early so that consistency, and therefore comparability, of annual information is possible.

Surveys are often fatiguing to administer and the process can fail if enumerators are not consistent and responsible individuals. Volunteers or paid workers are both options but, regardless of the labor source, good supervision and monitoring is a essential.

Data compilation and analysis are best accomplished with spreadsheet or simple database management software available for use with microcomputers. Computerization tremendously simplifies the large number of mathematical computations necessary for survey analysis. Also, once data is entered it is always available for further use, including inter-year comparisons of important variables.

Using Information

In order to maintain simplicity the limited market research process identified here does not require statistical

analysis. However, results should be cautiously interpreted and used, particularly if a small sampling was utilized. Be sure that large rather than insignificant survey results are utilized as a basis for changes in the show. For example, if ninety percent of surveyed attendees purchased woody ornamentals, then those products should be more heavily represented at future shows. Obviously, publicity and promotion efforts should be concentrated in geographic areas which represent the largest portion of sales. Information provided by the exit survey is a good starting point for decisions; often the "art of marketing" is necessary when the information is creatively applied.

The goal of the exit survey is to expand profitable show sales. As data indicated by the surveys are exploited, shows can be refined and made more effective. Expanding profits can finance extensive sample surveys for entire geographic regions and additional target groups. As large, untapped groups of buyers are identified, shows can be designed and promoted to attract their business by optimally meeting their needs. Decisions should be based on factual evidence provided by market research, and "intuition" reserved for the creative application of that information.

Literature Cited

1. Dillman, D. A. 1989. Our changing sample survey technologies. Choices. American Agricultural Economics Association, Herndon, VA. 3rd Quarter:12-15.
2. Haydu, J. J. 1989. What's happening to Florida's ornamental industry?. Fla. Nurseryman 36(9):25, 27, 29-30.
3. Iman, L. B. and W. J. Conover. 1983. A modern approach to statistics. J. Wiley and Sons, New York, N.Y.
4. Kepner, K. W. 1988. Trade show secrets: pre-show strategies and tactics. Fla. Nurseryman 35(8):4-6, 55-56.
5. Kepner, K. W. 1988. Trade show secrets: working the trade show. Fla. Nurseryman 35(9):20-21, 23, 25, 27.
6. Kepner, K. W. 1988. Trade show secrets: after the show. Fla. Nurseryman 35(10):29-30.

Proc. Fla. State Hort. Soc. 102:86-89. 1989.

MAJOR ISSUES CONFRONTING THE FLORIDA ORNAMENTAL INDUSTRY

ALAN HODGES AND JOHN HAYDU
University of Florida, IFAS
Food & Resource Economics Department
Gainesville, FL 32611

Abstract. To learn more about the organization of the southern Florida nursery industry, a comprehensive survey of 250 firm managers was conducted in 1985. Topics addressed in the survey included business and manager history, sales volume, product mix, product outlets, marketing practices, and labor management. Data were analyzed by firm size to identify special needs of larger and smaller firms. Results are discussed in relation to current industry problems in marketing, increased competition, and labor management. This information may be used to develop policy and guide research efforts for the ornamentals industry.

The ornamental horticulture industry in Florida has suffered a serious business downturn in recent years. Prob-

lems associated with the maturation of this industry are similar to those common in other parts of U.S. agriculture: overproduction, depressed product prices, and rising input costs (3). Other industry problems often cited include a lack of cooperation and a lack of professional management. Also, potential high returns for real estate investments motivate unprofitable operation of nursery enterprises to maintain agricultural property tax exemptions. The structure of the ornamentals industry poses some special difficulties: barriers to entry of firms in the marketplace are very small, with relatively low capital requirements, giving rise to a large number of small, family operated firms, with little or no professional training.

In order to intelligently guide research and policy development by public agencies and industry leaders to solve current problems, reliable information is needed that characterizes the structure and organization of the industry. Mathis and Degner (4) analyzed the Florida nursery industry and market problems from secondary data and selective interviews with industry leaders. Smith et al. (5) provided an economic overview of Florida's tropical foliage plant industry.

Florida Agricultural Experiment Station Journal Series No. R-00437.

A Major center of growth in the Florida ornamentals industry where problems have been especially acute is the southeast coast area of Dade, Broward, and Palm Beach counties. The southern Florida nursery industry is particularly complex because the sub-tropical climate allows unique production practices, and permits many tropical foliage products to be used locally as landscape ornamentals. To adequately address the fundamental problems in the ornamental horticulture industry, region-specific peculiarities must be recognized and understood. Therefore, an in-depth survey of the southern Florida nursery industry was undertaken.

Materials and Methods

Industry firms in Dade, Broward, and Palm Beach counties were selected to participate in the survey by a randomized sampling of the Florida Division of Plant Industry's (DPI) 1984 registry of certified nurseries. A total of 250 firms were surveyed, representing 14 percent of the entire population of firms. The distribution of firms surveyed by county were as follows: Dade, 115; Broward, 54; Palm Beach, 77.

The sampling procedure was designed to give greater representation to larger, strictly commercial firms. This was done by using a graded sampling intensity for each of the 10 categories of the DPI classification of firm size, which is based upon number of plant units inventoried during their annual inspections. For instance, 77 percent of firms in the largest firm classification (#10) were sampled, whereas 16 percent were sampled in the middle category (#5), and 3 percent were sampled in the smallest category (#1) (Figure 1).

The survey questionnaire was administered in-person by enumerators in each county who were hired temporarily for this job. At each firm, the top ranking person present was interviewed: in some cases this was the owner, and in some instances it was an employed manager.

The questionnaire asked managers to identify their firm's annual sales in 1984 in one of 17 categories, ranging from less than \$500 to over \$10 million. To find possible effects of firm size on business characteristics, data were analyzed according to the following four annual sales volume categories: small, less than \$250 thousand; medium,

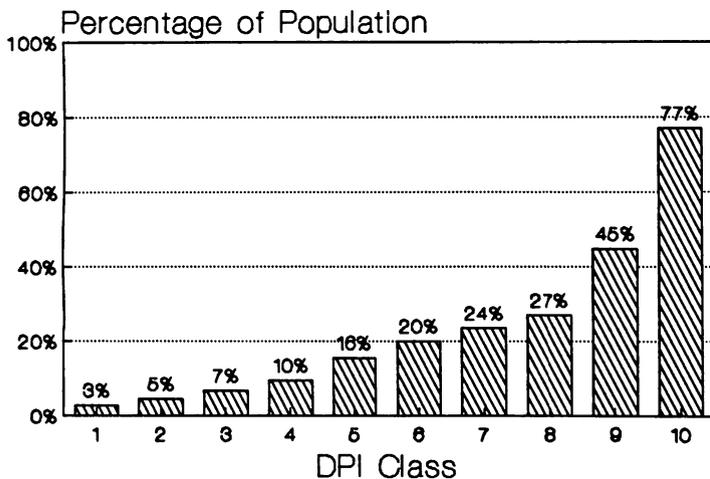


Fig. 1. Sampling intensity by Florida Division of Plant Industry (DPI) class.

\$250 thousand to \$1.5 million; large, \$1.5 to \$3 million; very large, greater than \$3 million. Firms were also classified by primary product types, representing greater than 50 percent of sales value: tropical foliage, woody ornamentals, flowering plants, mixed and other products.

Results and Discussion

Business, Manager & Employee Characteristics

Figure 2 shows the distribution of firms by primary product type. Thirty nine percent of firms sampled were primarily woody ornamentals producers, 38 percent were tropical foliage, 5 percent were flowering plants, and 18 percent were mixed or other product types.

Although commercial ornamentals production has been in existence in South Florida since before the turn of the century (6), survey results indicate that the industry was generally very young at the time of the survey. Over 50% of firms were less than 10 years old, and over three-fourths were less than 20 years old (Figure 3). The current competitive situation is probably the first such business experience for many managers.

One of the basic problems with the Florida ornamentals industry, as with many parts of agriculture, is that management is essentially production oriented, rather than market

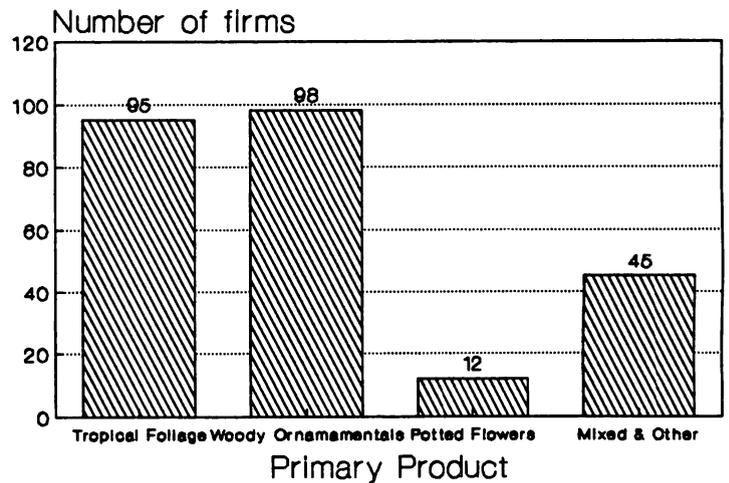


Fig. 2. Firms sampled by primary product type.

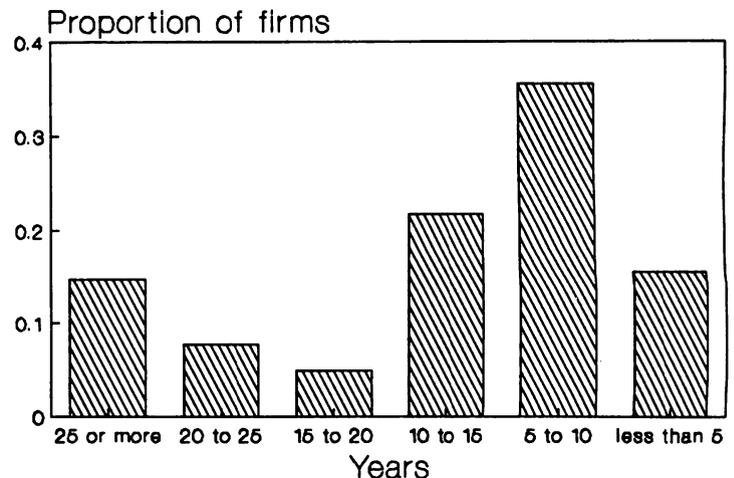


Fig. 3. Number of years in business.

Business Development

oriented. This situation stems from the fact that most managers are primarily horticulturists, rather than business professionals. Many managers began in the business as hobbyists. In evaluating potential new products, 58 percent of managers expressed the opinion that production characteristics, such as ease of growing or handling, rather than marketability were the most important attributes. This finding generally held true regardless of firm size.

Managerial training has been emphasized repeatedly as a critical need for the ornamentals industry (FFA and FNGA Marketing Task Forces). The results of this survey support this contention: 43 percent of managers were educated through high school or less, and among small firms it was 54 percent of managers (Figure 4). Forty six percent of managers in small firms had some college in contrast to 58 percent of managers in very large firms.

Employee education and training is another serious concern in this labor-intensive industry. The survey found that less than 6 percent of the work force had any vocational or technical training. Most individuals were either trained on-the-job or had some previous job experience. In spite of this, only 64 percent of managers indicated a need for continuing employee education/training. Since employee training and quality of work were considered important issues, why didn't a higher percentage of managers express a need for it?

In labor compensation practices, there are probably many ways in which Florida ornamentals producers can better motivate employees. Surveyed managers reported paying average hourly wages of \$4.89 for non-family production workers, and \$8.48 for supervisory employees. On a weekly basis, this represents \$201, and \$362 per worker, respectively. These wages are not competitive with many other job opportunities for unskilled agricultural labor. Piece rate workers in fruit and vegetable harvesting earn 20 to 40 percent more than this on an hourly equivalent basis (2).

Many studies have shown that fringe benefits are as important as wages or salaries in employee motivation. According to managers surveyed, the average percentage of total payroll spent on fringe benefits in the ornamentals industry was 10.5 percent. This contrasts with expenditures of 20 to 30 percent of payroll on fringe benefits in similar industries. Better benefits may be provided through increased vacation time, for instance. The most common employee vacation policy reported by managers (93%) was 1 week per year, after 1 year of employment.

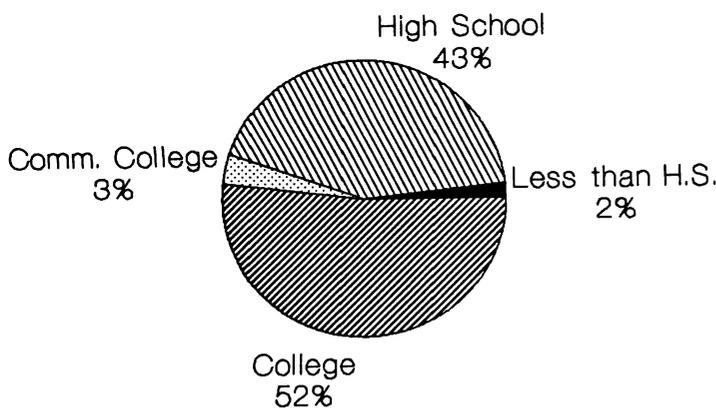


Fig. 4. Owner/manager education.

One indicator of business development efforts is support for research on new products and markets. In this area, Florida ornamental producers have exhibited little initiative. According to managers surveyed, less than 10 percent of annual sales were budgeted for market expansion efforts. Also, less than 0.3 percent of production area was used for research or product testing. Roughly half of managers favored generic product promotion regardless of firm size. Although the recent defeat of the proposed foliage marketing order was widely blamed on the small grower class, these results indicate that the proposal was probably equally unpopular across the firm-size spectrum.

Perhaps many growers feel unqualified in technical expertise to plan, carry-out, and evaluate meaningful research. However, in this era of reduced funding for public agencies, industry must be willing to provide greater support to research. Perhaps more access to grower facilities and labor may be one way in which industry can contribute resources for continued research in cooperation with state agencies.

Marketing Practices

"Marketing" has become an industry buzzword today. The mere mention of the word is often meant to summarize all of its problems. As commonly understood by many, marketing means "how can I get more return for the products I have now?" But the real meaning of marketing has to do with determining consumers needs, and providing products that meet those needs. If the ornamentals industry is to remain competitive with other luxury consumer goods, a more market-based business philosophy must be developed. Consumer preferences for plant products have changed substantially over recent years. For instance, a 1987 national consumer survey conducted by the Gallup organization found an overall 26 percent decline in consumer purchases of houseplants from the previous year (1).

Strong personal sales are at the heart of marketing programs. Effective personal selling requires specialized skills and time commitments that are often at odds with the de-

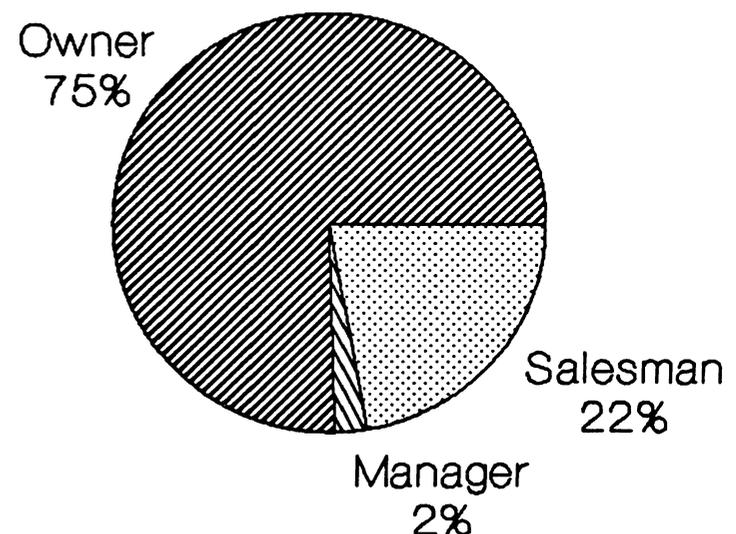


Fig. 5. Primary salesperson.

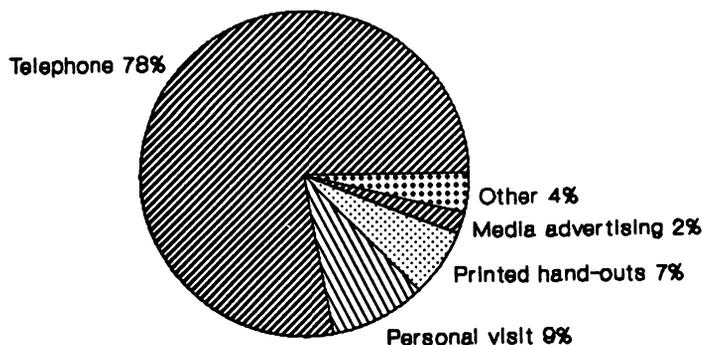


Fig. 6. Primary sales method.

mands of general business management. According to surveyed firms, the owner was the primary salesperson for 75 percent of all firms, and for 90 percent of small firms (Figure 5). Only 22 percent of firms employed the services of a professional salesperson, indicating a lack of understanding of the time and effort required to be effective at personal selling.

Sales methods were an important marketing consideration. The telephone was the primary channel of direct sales for 78 percent of firms, and for 89 percent of large and very large firms (Figure 6). Smaller firms tended to rely less on the telephone, which is a relatively expensive means of communication. Personal visits were a primary sales method for 10 percent of firms, and printed hand-out materials were used by 7 percent. Trade shows were another important sales tool. However, only 43 percent of firms attended a trade show, and only 19 percent attended two or more shows.

In the realm of advertising media, price lists were the main form for 79 percent of firms, trade publications were used by 14 percent, and 4 percent used local media (Figure 7). The high degree of dependence on price lists for advertising media is an indication that industry marketing is done on the basis of price rather than value.

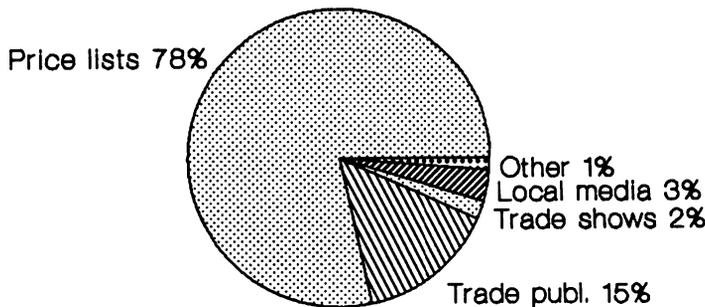


Fig. 7. Primary advertising method.

Conclusions

Florida's ornamentals industry faces great challenges to remain a sustainable and profitable industry. Many standard business practices were found to be lacking or absent entirely, according to results of a large survey of producers in southern Florida in 1985. Needs were emphasized for increased training of employees and management, more attention to employee fringe benefits programs, greater use of professional sales personnel, and more industry support of research and development activities.

Literature Cited

1. Butterfield, Bruce. 1989. Participation level; sales off. *Lawn and Garden Marketing*, Feb., p. 6-9.
2. Fla. Ag. Stat. Serv. 1989. Farm Labor, Florida, May, 4 pp. Orlando, FL.
3. Haydu, J. 1989. What's Happening to Florida's Ornamental Industry? *Florida Nurseryman* 36(9), Sept., pp. 25, 27, 29, 30.
4. Mathis, K. and R. Degner. 1981. The Florida Nursery Industry: Current Economic Status and Market Trends. Industry Report ☆81-13, Fl. Ag. Market Research Center, Food & Resource Economics Dept., Univ. Fla., Gainesville.
5. Smith, C., M. Miller, E. Scarborough, and J. R. Strain. 1981. An Economic Overview of the Tropical Foliage Plant Industry. Econ. Info. Report 156, Food & Resource Economics Dept., Univ. Fla., Gainesville.
6. Smith, C. N. 1980. Evolution of the Florida Foliage Plant Industry. *Proc. Fla. State Hort. Soc.* 93:208-210.

Proc. Fla. State Hort. Soc. 102:89-92. 1989.

ORNAMENTAL PLANT GROWTH RESPONSES TO DIFFERENT APPLICATION RATES OF RECLAIMED WATER

JOHN R. PARNELL
Water Quality Assessment Division
Public Utilities Department
City of St. Petersburg
P. O. Box 2842
St. Petersburg, FL 33731

Abstract. To determine the quantity of reclaimed irrigation water required to supplement normal rainfall and still produce optimum growth in ornamental plants, an experiment was set up in the landscape and turf areas of thirty private residences in the Colony Point area of St. Petersburg. Six different irrigation rates varying from 0.5 to 2.5 inches per week were applied throughout the experiment from January to Au-

gust 1988. The growth of twelve replicates of each of twenty species of ornamental plants was monitored throughout the experimental period at each of the application levels. Using analyses of variance and Duncan's multiple means tests, Italian cypress (*Cupressus sempervirens*), asparagus fern (*Asparagus densiflorus*), yew podocarpus (*Podocarpus macrophyllus*), bird of paradise (*Strelitzia reginae*), juniper (*Juniper procumbens*), philodendron (*Philodendron williamsii*), croton (*Codiaeum variegatum*), schefflera (*Brassaia actinophylla*), yaupon holly (*Ilex vomitoria* 'Schellings'), and orange (*Citrus sinensis*) showed no significant growth response to different application rates, Natal plum (*Carissa grandiflora*), chrysanthemum (*Chrysanthemum morifolium*), privet (*Ligustrum japonicum*) and dracaena (*Dracaena dere-*

Proc. Fla. State Hort. Soc. 102: 1989.