



UNIVERSITY OF
FLORIDA

EXTENSION

Institute of Food and Agricultural Sciences

A Decade of Change in Florida's Ornamental Plant Nursery Industry, 1989 to 1999¹

Alan W. Hodges and John J. Haydu²

Abstract

Florida's large ornamental plant nursery industry has grown rapidly and has undergone significant structural changes during the 1990s in response to increasing competition and industry maturation. Industry surveys (with mailed questionnaires) were conducted in 1989, 1994, and 1999 to evaluate economic trends. Over 500 responses were received from these surveys. In 1999, sales reported by surveyed firms amounted to \$446 million, or approximately one quarter of total estimated industry sales. Results showed that the industry continues evolving toward consolidation of larger firms, with greater labor productivity, increasing diversity of ornamental plant products, a shift in markets from landscaper to retailer outlets, and wider distribution of products outside of Florida.

Introduction: Florida's Ornamental Plant Industry

Ornamental plants represent the sixth largest agricultural commodity group in the United States, with farmgate cash receipts totaling \$10.94 billion in

1997 (NASS, 1999). Floriculture and environmental horticulture is the fastest growing major segment of U.S. agriculture, averaging 7.1 percent annual growth during 1992 to 1997. Floriculture and environmental horticulture crops include bedding plants, cut flowers and greens, tropical foliage, potted flowering plants, nursery crops, and turfgrass sod.

The state of Florida is the second largest producer of ornamental plants in the United States, with sales of \$1.45 billion in 1997 (NASS, 1999). Ornamental crops are the third largest agricultural industry in Florida, following citrus and vegetables. Florida dominates the U.S. market for tropical potted foliage and cut foliage crops, with nearly 90 percent of U.S. sales. A recent study showed that over 5,000 firms in Florida's nursery industry accounted for \$1.79 billion in economic output, \$1.26 billion in value added, and employed 31,000 persons directly and in related businesses (Hodges and Haydu, 1999).

Sales of ornamental plant products in the U.S. and Florida increased rapidly during the 1970s and early 1980s, then experienced slower but steady

1. This is EDIS Document FE 177, a publication of the Department of Food and Resource Economics, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL. Published August 2000. [This document was previously published as University of Florida, Food and Resource Economics Department, *Economic Information Report 00-3*.] Please visit the EDIS web site at: <http://edis.ifas.ufl.edu>. The results reported in this paper were made possible by the cooperative efforts of the S-290 Regional Research Committee of the USDA's Cooperative Research and Extension Education System. Industry surveys were designed and coordinated by Dr. John Brooker at the University of Tennessee.
2. Alan W. Hodges, coordinator of economic analysis, and John J. Haydu, professor and extension economist, Department of Food and Resource Economics, University of Florida, Gainesville, FL.

The Institute of Food and Agricultural Sciences is an equal opportunity/affirmative action employer authorized to provide research, educational information and other services only to individuals and institutions that function without regard to race, color, sex, age, handicap, or national origin. For information on obtaining other extension publications, contact your county Cooperative Extension Service office. Florida Cooperative Extension Service/Institute of Food and Agricultural Sciences/University of Florida/Christine Taylor Waddill, Dean.

growth during the latter 1980s and 1990s. In the 1990s, sales of ornamental plants by Florida growers were steady or moderately increased in real terms (adjusted for inflation), as shown in Figure 1. All ornamental horticulture products showed strong growth in 1997, and all product categories except "other environmental horticulture crops," which represents landscape woody ornamentals, have grown since 1995. Tropical foliage, in particular, has shown strong growth since 1993.

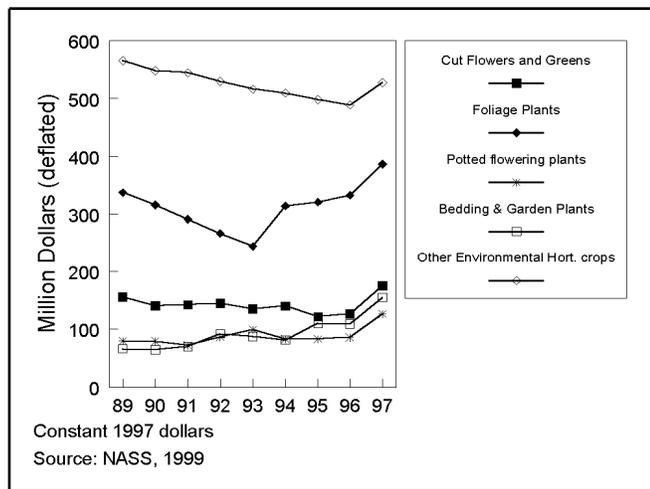


Figure 1. Florida sales of ornamental plants, 1989-1997.

As the ornamental horticulture industry matured, it has incurred problems common to other segments of U.S. agriculture, including increased competition, over-production, depressed prices, reduced profitability, and increased business failures (Hodges, Haydu, and van Blokland, 1996). The present paper describes changes occurring in the Florida ornamental plant industry during the past decade in response to this maturation process.

Methods

Surveys of Florida's ornamental nursery industry were undertaken as part of the National Nursery Survey sponsored by the Southern Regional Association of the USDA's Cooperative Research and Extension Education Service S-290 Committee. Survey questionnaires were mailed to selected firms in 1989, 1994, and 1999 requesting information on business activity for fiscal years 1988/89, 1993/94, and 1998/99, respectively. Information was collected on age and organization of the business, annual and monthly sales volume, employment, product types,

production systems, market outlets, interstate and international trade, sales and advertising methods, product pricing, use of computers, and factors limiting firm expansion. Questionnaires used in all three survey years were very similar, with minor exceptions.

Two source lists used to select firms for the survey were the Florida Department of Plant Industry (DPI) registry of certified nurseries and the membership list of the Florida Nurseryman and Grower's Association (FNGA, Orlando). Survey sampling concentrated on the largest firms in the industry. The DPI list was used to select firms that had more than 50,000 units in plant inventory, and the FNGA list was used to select additional firms that had eight or more full-time employees that did not meet the first criterion. The number of firms contacted, number of firms responding, response rate, and margin of error in each survey year are given in Table 1. A total of 104, 183, and 259 firms responded to the survey in 1988, 1994, and 1999, respectively. The increasing numbers of firms contacted and responding in the latter years is indicative of growth in the industry as well as expansion of the survey list sampling frame in the latter two survey periods. Response rates were at least 25 percent for all survey years. Based on these sample numbers, the margin of error for estimation of a proportion with 95 percent confidence ranged from 5.1 to 8.0 percent (Cochran, 1953).

Survey questionnaires were sent to selected firms (first class mail, included an addressed, postage-paid return envelope) in two separate mailings approximately two months apart. Returned questionnaires were forwarded to the project leader for data entry (consistency checking and compilation of a national database). Data sets for Florida respondents for all three survey years were combined for analysis of changes between 1989 and 1999. Analysis of trade flows and marketing practices was based upon the annual sales reported by survey respondents. Annual sales for each firm were estimated at the midpoint of the sales range indicated, except for the largest sales range (\$10 million or greater), in which firms were re-contacted to determine the sales level to the nearest \$1 million. Sales for each product type, month, media type,

market outlet type, and destination were estimated by multiplying each firm's total sales against the percentage of sales reported for each category. In some cases where noted, sales were adjusted for inflation based upon the gross domestic product implicit price deflator to state results in constant 1999 dollars (U.S. Department of Commerce, Slater and Strawser, 1999).

Results

Sales and Firm Size

The size and scale of ornamental plant nursery operations in Florida has increased during the past decade. Nursery product sales reported by survey respondents totaled \$100 million in 1989, \$249 million in 1994, and \$446 million in 1999 (Table 2). Average sales per firm rose from \$1.06 million to \$1.72 million between 1989 and 1999. After adjusting for inflation during this period, average sales per firm increased 29 percent. The greater concentration in the industry is indicated by the increasing number of firms having \$1 million or more in annual sales, and market share for this class of firms increased from 74 to 84 percent. Moreover, the greatest growth has been in very large firms, those with \$3 million or more in annual sales, whose market share nearly doubled from 32 to 62 percent. On the other hand, firms with less than \$1 million in annual sales lost market share, from 26 percent to 16 percent of total sales during this period.

Product Sales

Sales of specific ornamental plant products reported by surveyed firms are summarized in Table 3. Tropical foliage was the largest single product in 1994 and 1999, with 39 and 32 percent of total sales, respectively. Flowering potted plants were the next largest product category in 1999, with nine percent of total sales. Deciduous and evergreen trees and shrubs collectively represented 25 percent of sales in 1999, down dramatically from 71 percent in 1989. Some categories of products were not included in the 1989 and 1994 surveys, so it is not possible to make comparisons of trends for all specific products; however, most itemized categories of plant products were significantly reduced as a share of total sales between 1989 and 1999. Exceptions to this trend

were herbaceous perennials, propagating materials, and other miscellaneous products. These trends are evidence of increasing diversity and variety of plant products in Florida's ornamental nursery industry.

Employment and Labor Productivity

Ornamental plant production is a relatively labor-intensive agricultural enterprise. Total employment among surveyed firms increased from around 2,700 employees in 1989 to over 7,800 in 1999 (Table 4). The proportion of employees who were considered permanent rather than temporary or part-time ranged from 82 to 92 percent. The increasing size of firms in the industry is evident in the average number of employees per firm increasing from 26 in 1989 to over 30 in 1999. As a measure of labor productivity, sales per employee increased from \$37 thousand to \$57 thousand, which represented a 22 percent increase in inflation-adjusted terms. Larger firms generally had higher sales per employee in all survey years, representing an important economy of size, and this finding is consistent with results for detailed financial analysis of ornamental nurseries in Florida (Hodges, Satterthwaite, and Haydu, 1997).

Production Area, Production Systems, and Space Productivity

Total production area reported by survey respondents increased from 7,722 acres in 1994 to nearly 20 thousand acres in 1999 (Table 5). This represented an increase in the average production area per firm from 42 to 76 acres. In-ground field production systems for growing ornamentals in native soils increased dramatically to over 12,000 acres, representing 62 percent of the acreage reported in 1999. Container production, using an artificial rooting media in growing containers placed in open sun, represented 21 percent of total production area. Greenhouse and shadehouse production systems with enclosed structures for intensive cultivation of ornamental crops in a favorable microclimate made up 10 percent of total acreage. Sales per acre of production area is a measure of nursery space productivity; this measure decreased from \$32 to \$23 thousand between 1994 and 1999. Sales per acre varied directly with firm size, ranging from \$14 thousand for small firms to \$55 thousand for very large firms (1994), consistent with other findings that

larger and more profitable nursery firms in Florida had greater space productivity due to higher inventory turnover and higher levels of capital investment and labor (Hodges, Satterthwaite, and Haydu, 1997).

Nursery production in Florida is dominated by container growing systems because the mild winter climate allows year-round growing in above-ground containers without risk of freeze damage to roots. The trend toward containerized production systems has occurred throughout the United States because of the greater labor and space productivity enabled. Container-grown plants represented 80 percent of total industry sales in Florida in 1999; however, this was down from 95 percent in 1994 (Table 6). Sales of all types of bare-root and root-balled stock decreased from 22 percent in 1989 to only six percent in 1999. In-ground container growing systems, including fabric "grow-bags" and "pot-in-pot" systems, have increased in popularity but still represent a very small portion of the total market. There has also been a dramatic increase in "other" unspecified types of growing systems.

Market Channels

Ornamental plants are distributed through a variety of market channels. Most plants are sold through wholesale markets, with only three percent of sales through direct retail to the public in 1999, and this has declined from 10 percent in 1989 (Table 7). As an indication of the increasing complexity of the marketing system for ornamental plant products, re-wholesale brokers, distributors, or other nursery firms that buy and handle plants for resale to other buyers have become the largest single market channel, with 35 percent of total sales, up from 25 to 30 percent in previous surveys. An important re-wholesaler is other nursery firms whose strategy is to offer wider product lines and take advantage of a strong marketing organization. Forty three percent of firms reported re-selling finished nursery products purchased from other growers in 1999, representing eight percent of total sales. Mass merchandisers such as large chains like Home Depot, Wal Mart, and K-Mart are also an increasingly important market channel, comprising 24 percent of total sales by growers in 1999. Retail garden centers and other

types of retailers are becoming less important in terms of overall market volume. Collectively, retailers of all types handled about 39 percent of grower sales in 1999. Commercial landscape service firms are a third major buyer of nursery products for landscape construction or renovation jobs. This segment has declined in importance as a market outlet from 45 percent share in 1989 to 22 percent in 1994.

Geographic Market Distribution

Destinations of ornamentals sales are summarized by region in Table 8. Approximately 69 percent of industry sales were to customers within the state of Florida in 1999. Sales outside of Florida have steadily increased from 24 percent of total sales in 1989, to 30 percent in 1994, and to 31 percent in 1999. So, exports have continued to grow although not as fast during the early 1990s. Sales to the southeast, southcentral, northcentral and western U.S. markets all increased as a percentage of total sales between 1989 and 1999, while sales to the northeast and exports to foreign countries were decreased (Table 8). The share of within-state sales was highest for landscaper outlets in both survey years and lowest for re-wholesalers.

Market Seasonality

The distribution of annual sales reported for each month in each survey year is shown in Figure 2.

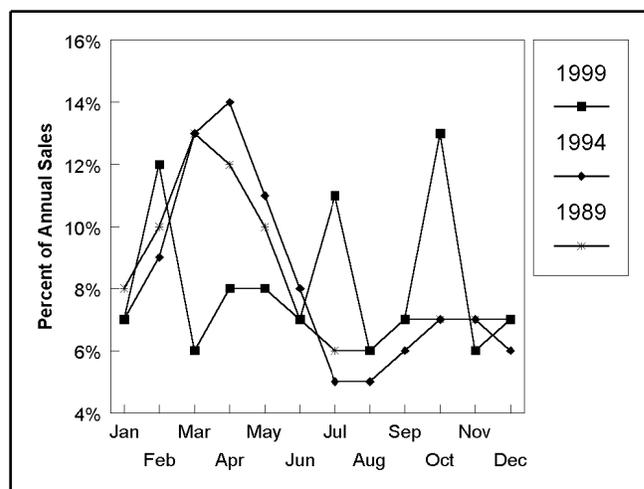


Figure 2. Monthly sales for surveyed Florida ornamental plant nurseries, 1989, 1994, and 1999.

The seasonality of Florida's ornamentals sales was not as seasonal as for other states, due to the

moderate climate allowing year-round growing and landscaping activity. In 1989 and 1994, sales followed a regular seasonal pattern, with sales peaking in the months of March, April, and May, then falling to their lowest levels in July, August, and September, at less than half of peak volume. In 1999, sales become more aseasonal, with peaks in February, July, and October. In general, a more even distribution of sales throughout the year is favorable for greater efficiency in production and marketing operations.

Sales Methods

Sales methods are a key aspect of marketing and include considerations such as how contacts are made and whether or not sales are negotiated. By far, the most important sales medium for Florida nurseries was the telephone, accounting for 59 percent of total sales in 1999, 63 percent in 1994, and 48 percent in 1989 (Table 9). Personal selling (in-person sales) was the next most important sales method, which declined from 43 percent of total sales in 1989 to 38 percent in 1999. Trade shows are another traditional marketing tool for ornamental plants, but are declining in importance, and now account for only four percent of total sales. Mail order accounts for only one percent of sales. For telephone sales, there was a slightly greater share of non-negotiated than negotiated sales in 1999 (31 percent versus 28 percent); however, the share of non-negotiated sales overall has declined since 1989. Larger firms had a greater share of negotiated sales, suggesting greater use of pricing incentives for marketing and some size economy in employment of sales personnel. Using a national data set for the 1989 survey, Hinson, Turner, and Brooker (1995) showed that firm age, sales volume, legal organization, and regional location all significantly affected choice of sales methods.

Repeat customers are the foundation of most businesses and are generally more profitable because of lower overhead transaction costs. The overall share of ornamentals sales to repeat customers increased from about 85 percent in 1989-94 to nearly 92 percent in 1999. The high percentage of business conducted with repeat customers suggests that competition for customers in this industry may be characterized as a zero-sum game, in which the acquisition of a new

customer by one firm means the loss of a customer from another firm.

Traditionally, nursery products have been produced on speculation, assuming that ready qualified buyers exist before crops are planted and grown. Forward contracting or pre-selling is an important strategy to reduce market uncertainty and is becoming more important in the nursery industry. In 1999, surveyed firms reported \$119 million in sales of forward contracted products, or about 27 percent of total industry sales. This was increased from about 21 percent in 1994.

Advertising

Advertising is an important sales tool for the ornamental nursery industry because of the wide diversity of products and lack of centralized market channels. Total advertising expenses in 1999 were \$21.5 million, representing 4.8 percent of sales. This was up sharply from 2.1 percent of sales in 1994. Average advertising expenditures per firm increased from \$17 to \$83 thousand between 1989 and 1999. Expenses on advertising specified by type of media are shown in Table 10. Trade shows remain the most important form of advertising although its share of total advertising expenditures has fallen from 43 to 33 percent. Trade journals are another important medium, representing 18 percent of expenditures in 1999, but their share has fallen from 29 percent in 1994. Catalogs and newsletters together represented 15 percent of total expenditures in 1999, down from 18 percent in previous years. With the popularization of the internet and online commerce, there has been a huge increase in advertising on internet web sites, now representing nine percent of total advertising for nurseries. After a decline in 1994, the yellow pages had sharply increased advertising in 1999. Radio and billboards were also used to a lesser extent. Other unspecified forms of advertising are rapidly increasing, indicating the greater diversity of approaches to marketing ornamental plants.

Product Pricing

Pricing of products is a major issue in the ornamentals industry because of alleged widespread below-cost sales. While costs of production have risen along with inflation in the general economy,

prices for ornamental products have remained relatively stable for a decade. Survey respondents were asked to rate the importance of various factors used to determine prices on a scale of one to five, and these scores were summarized in a weighted composite index (Figure 3).

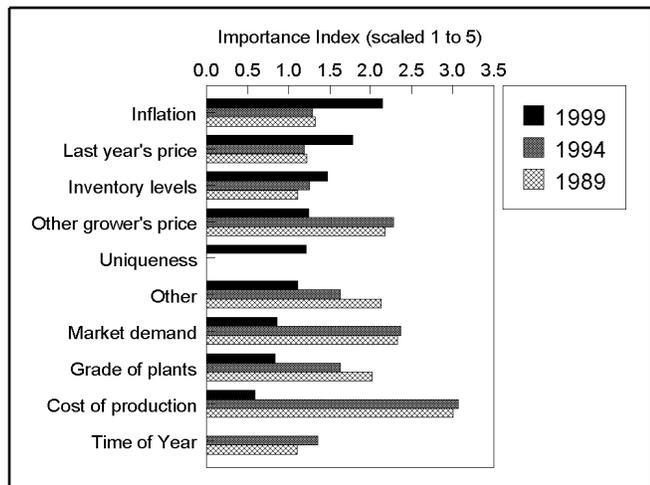


Figure 3. Factors affecting prices, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

There is a clear indication of changes in the perceptions of factors determining prices. In 1989 and 1994, cost was the most important factor determining prices, followed by market demand and other grower's prices. In 1999, however, inflation, last year's price, and inventory levels were the most important factors. This change in the factors considered for product pricing reflects a shift away from general specific market supply/demand and production costs toward more general economic conditions, internal management factors, and relationships with long-term customers. The perceived importance of inflation is interesting in view of the fact that inflation was relatively low in the late 1990s.

Business Growth and General Business Environment

In view of the maturation of the ornamentals industry during recent years, there is concern about what factors are limiting further expansion of the industry. Survey respondents were asked to rate various factors potentially limiting growth of their firm and geographic expansion. In 1999, the top-rated limiting factors were number of plant offerings, suitable transportation, and availability of capital (Figure 4). In 1994, the most important factors were

marketing, capital, production, and availability of personnel. The demand for new plant offerings is a major driving force in the industry.

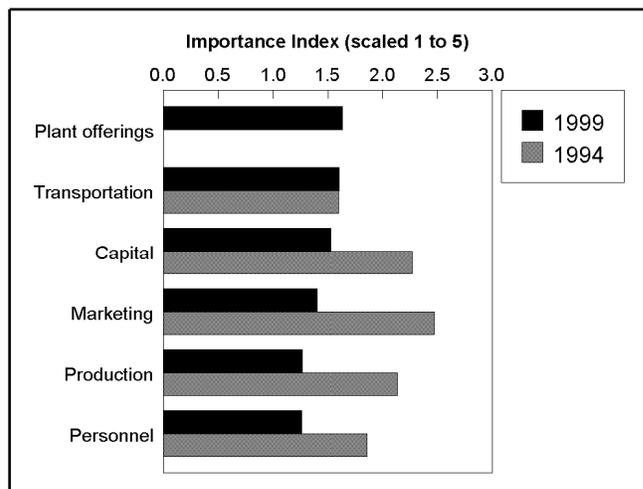


Figure 4. Factors limiting expansion, surveyed ornamental plant nurseries in Florida, 1994, and 1999.

When asked about factors affecting their business, in general, in 1999, the most important factors rated by respondents were availability of land, ability to hire competent management, competition, and environmental and other government regulations (Figure 5).

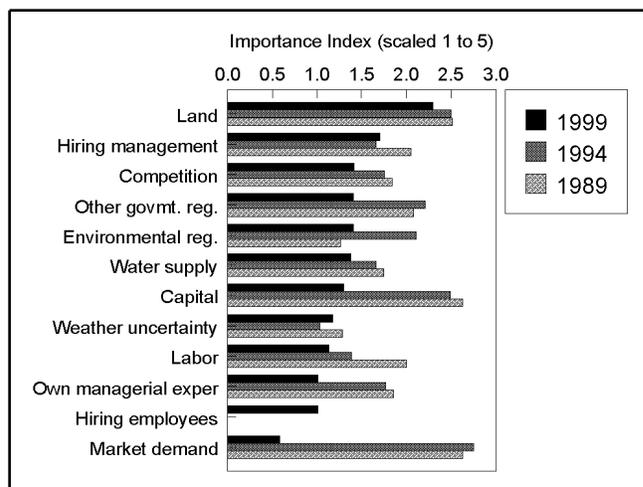


Figure 5. Factors affecting business, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Of lesser importance were water supply, availability of capital, weather uncertainty, and availability of labor. In the earlier survey periods, market demand, availability of capital, and availability of land were rated the most important factors.

Conclusion

Over the past 10 years, Florida's ornamental plant nursery firms have adapted to an increasingly competitive industry by growing to larger size, developing new products and markets, and achieving greater productivity and efficiency. During the 1989 to 1999 period, average sales per firm grew by 22 percent in constant-dollar terms, average employment increased by 15 percent, and sales per employee increased by 56 percent. The product mix of Florida's nurseries became more diverse, with sales of new and "other" plant products increasing dramatically. Markets for Florida ornamentals were substantially expanded in other regions, with sales to destinations outside the state increasing from 23 to 31 percent of total sales. Re-wholesalers and retail mass merchandisers (chain stores) became the dominant market outlet for ornamentals rather than landscape service firms. Concerns about factors limiting further growth of the industry and issues surrounding the general business environment have shifted away from general production and marketing problems toward internal management and customer service issues.

References

- Bryan, H.D. and J.R. Brooker. 1989. Tennessee's Ornamental Nursery Industry: Trade Flows and Marketing Practices. *Research Report* 89-01 (February), Department of Agricultural Economics and Rural Sociology, University of Tennessee Agricultural Experiment Station.
- Cochran, W.S. 1953. *Sampling Techniques, second edition*. New York, NY: John Wiley.
- Hinson, R.A., S.C. Turner, and J.R. Brooker. 1995. Transaction methods among US wholesale nurseries. *Agribusiness* 11(2):147-154.
- Hodges, A.W. and J. Haydu. 1999. Economic Impact of Florida's Environmental Horticulture Industry, 1997. *Economic Information Report* EI99-1, Food & Resource Economics Department, University of Florida, Gainesville, FL (March, 1999).
- Hodges, A.W., L.N. Satterthwaite, and J. Haydu. 1997. Business Analysis of Ornamental Plant Nurseries in Florida, 1995. *Economic Information Report* EI97-3, Food & Resource Economics Department, University of Florida, Gainesville, FL .
- Hodges, A.W., J.J. Haydu, and P.J. vanBlokland. 1996. Adaptation to competition and structural change in Florida's ornamental plant nursery industry, 1989 to 1994. *Acta Horticulturae* 429: 309-316.
- Hodges, A.W. and J.J. Haydu. 1992. Structure and Market Organization of Florida's Landscape Plant Industry. *J. Environ. Hort.* 10(1): 32-36.
- Johnson, D.C. 1999. Situation and Outlook for Ornamental Horticulture. FLO-99. USDA, Economic Research Service, Washington, DC.
- Johnson, D.C. and T.M. Johnson. 1993. Financial Performance of US Floriculture and Environmental Horticulture Farm Businesses, 1987-91. *Statistical Bulletin* 862. USDA Economic Research Service, Washington, DC.
- National Agricultural Statistics Service (NASS). 1999. Census of Agriculture, 1997. U.S. Department of Agriculture, Washington, DC.
- Slater, C.M. and C.J. Strawser. 1999. *Business Statistics of the United States, 5th edition*. Lanham, MD: Bernan Press.

Table 1. Number of firms contacted and responding, response rates, and margin of error, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Survey Year	Firms Contacted	Firms Responding	Response Rate (%)	Margin of Error (%)
1989	409	104	25.4%	5.1%
1994	610	183	30.0%	6.1%
1999	931	259	27.8%	8.0%

Table 2. Percentage of firms and sales by firm size class, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Firm Annual Sales Range	Firms Reporting			Total Sales					
	1999	1994	1989	1999		1994		1989	
				\$MM	%	\$MM	%	\$MM	%
	<i>Percentage</i>			<i>Millions Dollars and Percentage of Total</i>					
Less than \$500 thousand	31%	34%	38%	19.6	5%	16.1	6	8.5	8%
\$500 thousand to \$999 thousand	26%	21%	27%	50.3	11%	28.5	11%	18.0	18%
\$1 million to \$2.99 million	23%	33%	28%	100.0	22%	100.0	40%	41.8	42%
\$3 million or more	14%	12%	7%	276.4	62%	104.5	42%	31.9	32%
Total				446.3	100%	249.1	100%	100.2	100%

Table 3. Product sales by type of plant, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Type of Plant	1999		1994		1989	
	<i>Millions Dollars and Percentage of Total</i>					
Deciduous shade and flowing trees	35.8	8%	8.5	3%	11.8	13%
Deciduous shrubs	8.6	2%	2.2	1%	6.0	6%
Broad-leaved evergreen shrubs	40.7	9%	25.5	10%	22.5	24%

Table 3. Product sales by type of plant, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Type of Plant	1999		1994		1989	
	<i>Millions Dollars and Percentage of Total</i>					
Narrow-leaved evergreen shrubs	9.8	2%	12.4	5%	12.6	13%
Evergreen trees	16.6	4%	12.0	5%	14.1	15%
Azaleas	7.6	2%	0.0	N/A	0.0	N/A
Vines and ground covers	9.0	2%	0.1	4%	8.1	9%
Roses	8.5	2%	4.7	2%	2.8	3%
Herbaceous perennials	8.0	2%	4.0	2%	1.1	1%
Bedding plants — annuals	27.4	6%	N/A	N/A	N/A	N/A
Bedding plants — vegetables, fruits, herbs	3.1	1%	N/A	N/A	N/A	N/A
Flowering potted plants	38.9	9%	N/A	N/A	N/A	N/A
Tree fruits	3.9	1%	3.9	2%	5.8	6%
Small fruits	N/A	N/A	0.3	0%	0.3	0%
Foliage	141.9	32%	97.2	39%	N/A	N/A
Propagated materials	43.9	10%	9.1	4%	4.1	4%
Other types of plants	34.1	8%	57.5	23%	4.5	5%
Total	437.7	100%	246.6	100%	93.7	100%

Table 4. Employment and labor productivity of surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Employee Type	1999	1994	1989
Permanent employees	6,410	5,029	2,292
Total employees	7,833	5,409	2,743
Employees per firm	30.2	29.6	26.4
Sales per employee (thousand dollars)	57.0	46.0	36.5

Table 5. Production area of surveyed ornamental plant nurseries in Florida, 1994 and 1999.

Production Area Type	1999		1994	
	<i>Acres and Percentage of Total</i>			
In-ground field	12,105	62%	3,178	41%
Greenhouse or shade	2,035	10%	1,045	14%
Container	4,179	21%	2,582	33%
Propagation or other area	1,259	6%	917	12%
Total production area	19,578	100%	7,722	100%

Table 6. Sales by rooting media production system, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Growing System Type	1999		1994		1989	
	<i>Millions Dollars and Percentages of Total</i>					
Containerized	352.2	80%	204.5	85%	77.5	78%
Bare root	3.7	1%	5.5	2%	6.0	6%
Balled and potted	1.2	< 1%	1.6	1%	3.0	3%
Balled and burlapped	21.5	5%	10.7	4%	11.5	12%
Process balled	0.2	< 1%	0.1	< 1%	0.9	1%
Field grow bag	1.4	< 1%	3.5	1%	0.0	0%
Pot-in-pot	3.5	1%	3.5	1%	N/A	N/A
Other growing system	54.6	12%	13.4	6%	N/A	N/A

Table 7. Sales to wholesale and retail market channels, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Market Channel	1999		1994		1989	
	<i>Millions Dollars and Percentages of Total</i>					
Retail directly to public	12.5	3%	7.1	3%	9.5	10%
Retail mass merchandisers	104.5	24%	44.8	19%	N/A	N/A
Retail garden centers	36.9	8%	42.5	18%	N/A	N/A
Other retailers	31.9	7%	15.1	6%	24.1	24%
Landscape firms	97.4	22%	54.9	23%	41.0	41%
Re-wholesalers	155.3	35%	69.5	30%	25.2	25%

Table 8. Sales by United States region, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Region: States	1999		1994		1989	
	<i>Millions Dollars and Percentages of Total</i>					
Florida	228.6	69%	143.1	70%	60.8	76%
<i>Southeast:</i> SC, VA, TN, MS, GA, KY, DC, AL, MD, NC	47.2	14%	20.9	10%	8.1	10%
<i>Southcentral:</i> LA, TX, MO, AR, KS, OK	20.0	6%	13.1	6%	0.3	< 1%
<i>Northeast:</i> PA, NJ, NH, NY, MA, CT, DE	12.9	4%	12.4	6%	6.8	9%
<i>Northcentral:</i> MI, IN, IL, MN, OH, SD, WI	10.2	3%	9.5	5%	0.3	< 1%
<i>West:</i> MT, OR, UT, WA, CO, CA, AZ, NV	11.7	4%	3.8	2%	0.2	< 1%
Export	1.1	< 1%	1.7	< 1%	3.4	4%

Table 8. Sales by United States region, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Region: States	1999		1994		1989	
	<i>Millions Dollars and Percentages of Total</i>					
All Regions	331.6		204.6		80.0	

Table 9. Sales by type of contact and negotiaition method, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Type of Selling Method	1999		1994		1989	
	<i>Millions Dollars and Percentage of Total</i>					
Trade show, negotiated	7	2%	7	3%	4	4%
Trade show, non-negotiated	9	2%	6	2%	4	4%
Telephone, negotiated	122	28%	61	25%	19	19%
Telephone, non-negotiated	132	31%	90	38%	29	29%
In-person, negotiated	77	18%	34	14%	19	19%
In-person, non-negotiated	76	18%	39	16%	24	24%
Mail order	5	1%	2	1%	2	1%
Total	427	100%	238	100%	99	100%

Table 10. Advertising expenses, surveyed ornamental plant nurseries in Florida, 1989, 1994, and 1999.

Type of Media	1999		1994		1989	
	<i>Thousands Dollars and Percentage of Total</i>					
Web sites	928	9%	N/A	N/A	N/A	N/A
Yellow pages	652	7%	204	4%	144	8%
Radio	63	1%	16	< 1%	N/A	N/A
Billboards	28	< 1%	8	< 1%	N/A	N/A
Catalogs	1,155	12%	690	13%	185	10%
Trade journals	1,793	18%	1,580	29%	280	15%
Newsletters	256	3%	283	5%	150	8%
Trade shows	3,323	33%	1,579	29%	757	42%
Newspapers	N/A	N/A	134	2%	192	11%
Other	1,782	18%	692	13%	70	4%
Total amount specified	9,980	100%	5,375	100%	1,806	100%
Amount unspecified	11,551					