FE894

Production and Marketing Practices in the Florida Nursery Industry, 2008[1]

Alan Hodges[2]

Acknowledgments

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Abstract

This report presents information on production and marketing practices of Florida's wholesale nursery and greenhouse industry in 2008, with comparisons to the rest of the United States, based on information collected through national mail, Internet, and telephone surveys. A total of 556 firms in Florida responded to the survey, representing a response rate of 18 percent. Respondents reported total annual sales of $698 million in 2008, or an average of $1.53 million per responding firm, and average employment of 22 permanent and temporary jobs. Based on a validated business population of 3,794 active firms, Florida nursery industry sales were estimated at $3.52 billion, which represented 13.0 percent of total U.S. nursery sales ($27.14 billion), and total employment was estimated at 39,791 jobs, or 15.1 percent of that for the United States (262,941). Estimated sales and employment in Florida were second only to California among all states in the United States. These sales figures are substantially higher than official estimates by USDA. The leading plant-type reported by Florida growers was tropical foliage, representing 30 percent of total sales. Native plants represented 19 percent of total Florida nursery sales, compared to 13 percent for the United States. Containerized plants accounted for 86 percent of product sales in Florida, compared to 62 percent for the United States. Overall, 93 percent of sales were through wholesale outlets, including re-wholesalers

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(34%), landscape firms (31%), home centers (12%), and single-location garden centers (12%), with the balance (7%) through direct retailing to the public. Most sales were to repeat customers (86%). About 17 percent of sales were contracted with customers in advance, and 11 percent were for brokerage of finished products. The most common sales transaction methods were orders made by telephone (57%) and in-person (36%), followed by trade show orders (4%) and the internet (2%). About 75 percent of propagated seedlings, whips, grafts and liners for nursery production were sourced from other firms within Florida. About 67 percent of nursery products were sold within the state, but other states receiving significant sales were North Carolina (12%), Connecticut (5%), Georgia (2%) and Texas (2%). Advertising expenditures represented 2.4 percent of total sales, and the most commonly used media were trade shows and gardening publications, representing 29 and 24 percent of advertising budgets, respectively. Respondents attended an average of 1.9 trade shows annually with an exhibit and 1.4 shows without an exhibit. Groundwater wells were the most common source of irrigation water, used by 78 percent of respondents, and overhead sprinklers were the most common irrigation application method (73%). Computers were currently used by over half of respondents for word processing, communications (email), and accounting, while inventory management, internet commerce, and production scheduling are expected to increase significantly in the next five years. The most common integrated pest management practices (IPMs) followed were removal of infested plants, hand weeding, and spot treatment with pesticides, all practiced by at least two-thirds of respondents. The most important factors affecting pricing of nursery products were cost of production, market demand, and grade of plants. Transportation and plant offerings were rated as the most important factors affecting the geographic trade area. The biggest factors impacting Florida growers and the U.S. nursery industry in general were market demand, competition/price undercutting, and weather uncertainty.

Introduction

The 2009 *National Nursery Survey*, which gathered annual information for 2008, represented the fifth such effort by the *Green Industry Research Consortium*, following previous surveys for 1988, 1993, 1998, and 2003. Basic descriptive results of previous *National Nursery Surveys* were reported by Brooker et al. (1990, 1995, 2000, 2005). Overall national results for the 2009 survey were reported by Hodges et al. (2010) and Hall et al. (2011). The objective of these surveys was to document production and management practices of the U.S. nursery and greenhouse industry, and to provide information useful to growers, allied industry professionals, extension educators, and researchers.

The environmental horticulture or "green" industry complex encompasses a wide range of business entities: input suppliers; production firms such as nursery, greenhouse, and sod growers; wholesale distribution firms, including importers, brokers, re-wholesalers, and transporters; horticultural service firms providing landscape and urban forestry services such as design, installation, and maintenance; and retail operations, including independent garden centers, florists, home improvement centers, and mass merchandisers or other chain stores. The United States leads the world in the production and marketing of floriculture and nursery crops. Floriculture crops include bedding plants, potted flowering plants, tropical foliage plants, cut cultivated greens, and cut flowers, while nursery crops include trees, shrubs, and groundcover plants. Floriculture crops are generally herbaceous; have prominent floral features; and are grown in flats, trays, pots, or hanging baskets, usually inside a controlled greenhouse environment.

Market outlets for nursery and greenhouse crops include florists, garden centers, mass merchandisers, supermarkets, chain stores, discount stores, home improvement centers, hardware stores, landscape contractors, and re-wholesalers. Other retail outlets are farmers markets, flea markets, and street vendors. Since cut flowers are perishable and live floral crops are sensitive to variations in temperature, they usually require cooled transportation and storage conditions to preserve and prolong their quality before final sale.

The demand for floral crops, especially cut flowers, is highly seasonal. Sales are normally highest from February through May and in the fall, with peak sales during holidays such as Valentine's Day, Mother's Day, Thanksgiving, and Christmas. Wholesale sales of green industry products are usually handled by salespersons who have established relations with large buyers. Marketing programs include trade shows, trade publication advertisements, catalogs, and direct mail. Close planning or partnering with large buyers is required to secure long-term markets and to ensure that the right product mix is produced; however, demand for different products can still vary substantially from year to year. Cash flow is uneven throughout the year, so effective cash management is important. Technical knowledge of plants and pests is also important for nursery management, but many of the everyday tasks and cultural practices are routine and do not require specialized labor. Although automation in this industry has proven to be difficult, nursery and greenhouse operations may have automated irrigation, fertilization, and air and lighting systems controlled by a variety of sensors. Innovations demanded by big-box retailers, such as custom labeling, bar codes, scanners, and electronic data interchange between suppliers and buyers, are now used by many producers.

Competitive rivalry in the green industry is intensifying, especially at the retail level. Mass merchandisers, often referred to as "big box" stores, that sell large volumes of plants, are continuing to ramp up their presence in the lawn and gardening industry. Their largest competitors include thousands of independent garden centers across the nation that charge higher prices but typically provide far more service and variety. One impact of the mass marketing of floricultural crops has been an increase in the overall size of growing operations. The capital requirements for mass production often exceed those that this industry has historically managed. Most firms generate capital on their own, but the industry is now seeing investment brokers financing some of the production operations. In some instances, chain stores have limited the number of approved vendors with whom they deal in any market area in order to realize certain procurement and merchandising efficiencies. Large producers may partner with several smaller producers in order to handle the volumes required to supply large retail chains, which helps to spread the market risk among several producers. Some nursery firms have grown rapidly through acquisition during the past decade, largely to service mass marketers. The big-box retailers and large landscape installation companies are supplied mainly by large nurseries, while independent garden centers, retail nurseries, and smaller landscape firms may be supplied by both large and small growers. Proximity and high product quality are more important to these buyers than low price because the end consumer is most interested in the quality and breadth of retail selection. In recent years, grower numbers have declined because of the stresses of supplying mass marketers or competing with them as independent grower-retailers.

In contrast, the focus on mass marketers by large growers has created opportunities for smaller growers to develop niches serving independent retailers/landscapers or to go into retailing themselves, selling directly to the consumer. Keeping plants alive and healthy is a challenge for many consumers, and small retail operations often have more technically knowledgeable staff than big-box retailers to assist customers with plant care advice. In the 2003 national survey of growers, it was found that 59 percent of producers surveyed had some retail sales (Brooker et al. 2005). Smaller growers sold a higher percentage of their production on a retail basis either from drive-in customer traffic at the nursery/greenhouse or at wholly-owned retail sales yards. Some larger producers have also used their own retail outlets as a tactic for diversification.

The green industry has experienced unprecedented growth, innovation, and change over the last couple of decades. For a while, nursery and floral production was one of the faster growing sectors in agriculture because of relatively high profitability. However, factors such as a slowing growth in demand and tighter margins suggest that the industry is maturing.

The objective of this research project was to obtain data on selected production and marketing practices followed by U.S. nursery growers in order to provide stakeholders with additional information to help with strategic planning decisions. Also, this type of information is beneficial to other industry

professionals, such as extension educators, researchers, and input suppliers. This data collection effort began because of the void of industry-wide data regarding production and marketing practices in the green industry, and was designed to supplement rather than duplicate data collected by the National Agricultural Statistics Service (USDA/NASS).

Methods

The content of the *National Nursery Survey* has remained very similar over time, but it has evolved in response to changing characteristics of the industry. Information collected in this survey included annual sales, full-time and part-time employment, plant types produced, native plants, product forms, market distribution channels, interstate and international trade flows of finished products and propagation materials, selling methods, advertising forms, irrigation water sources and application methods, integrated pest management (IPM) practices, year of business establishment, computerized business functions, and factors affecting business growth and pricing. Many questions in the survey asked respondents to indicate the percentage share of total activity for specific items, with all items being assumed to sum to 100 percent. Other questions were posed as checklists or "Yes"/"No" items, while still others asked the respondent to rate items on a four-point scale of importance. All information collected pertained to business operations in 2008. A copy of the survey questionnaire is provided in the Appendix. The questionnaire and survey protocol were approved for compliance with ethical standards for human subjects research by University of Florida's Institutional Review Board.

A list of over 38,000 U.S. nursery firms was developed for the national survey, including 7,848 firms in the state of Florida for which contact information was obtained from the Florida Department of Agriculture and Consumer Services, Division of Plant Industry, certified nursery directory. All commercial growers and dealers of live plants are required to be registered and annually certified for compliance with phytosanitary regulations, so this can be considered an exhaustive listing of plant growers to the extent of the force of law. The list was screened to eliminate duplicate entries and companies not involved in plant production.

Survey sample numbers and responses are summarized in Table 1. A total of 3,148 nursery firms in Florida were surveyed by both mail and Internet methods, representing about 40 percent of the business population. Valid responses were received from 566 firms, representing a response rate of 17.7 percent. Overall, 82 percent of respondents reported the key information on annual sales. A random sampling plan was used to select 2,365 Florida firms for the mail survey, with firms stratified in four size classes based on plant inventory (number units), in order to provide a greater sampling rate for large and medium firms in order to maximize responses of these firms, which typically represent a dominant share of industry activity while still representing small or very small firms.

Two complete mailings of the printed survey were conducted in June and July of 2009. Questionnaires were mailed to selected firms, along with postage-paid return envelopes and a cover letter from the investigators explaining the purpose and benefits of the survey. The questionnaires and letters contained the logos of the sponsoring organizations to enhance the credibility and legitimacy of the survey. Return envelopes accompanying the survey mailings were imprinted with a code number matched to the mailing list in order to identify respondents for purposes of sample extrapolation and quality control. Reminder postcards were mailed to respondents about one week after each survey mailing.

In addition to the mail survey, for the first time in the history of the *National Nursery Survey*, firms with email accounts were surveyed via electronic mail. Firms surveyed via email were removed from the population considered for the mail survey to avoid duplications. The online survey was implemented using the *SurveyMonkey* service (SurveyMonkey.com), which supports batch email invitations, security-encrypted data recording, and automatic tracking of respondents. Three email invitations to participate in the survey were made in June, July, and August 2009. Firms were invited to participate in the survey by clicking on a link to the survey website, then were explicitly asked for consent to participate in the survey, and were given the option to decline or "opt-out" as required by anti-spam laws governing electronic communications. The content of

the USPS mailed and online internet versions of the survey questionnaire were identical, so the results are strictly comparable.

Completed surveys were returned to Texas A&M University for data coding and entry into worksheets for analysis. Annual sales for each firm were estimated at the midpoint or average of the sales range indicated, unless the actual sales were specified (Table 2). Sales for each product type, market channel, etc. within each firm were estimated from the annual sales, together with the percentage breakdown reported, so that the results represent sales-weighted averages. Expanded estimates of annual sales and employment in each state were based on the adjusted population of firms, multiplied by the average sales or employment per firm, representing the subset of firms that provided this critical information within stratified firm size classes.

A follow-up telephone survey was conducted in April 2010 for the purpose of testing the representativeness of the mail and internet survey samples, and to determine the share of the business population that was active and qualified. The validated business population was then used to estimate total industry sales and employment. Telephone interviews were subcontracted to the Bureau of Economic and Business Research, University of Florida. The survey contacted a random sample of 936 firms in Florida, and completed interviews with 168 firms. The firms were either not sampled previously, or had not responded to the mail or Internet surveys. About 26 percent of firms were currently inactive and 35 percent were judged to be unqualified based on the disposition of calls, including reasons such as no-answer, fax/data line, non-working number, or number changed. Together, these two factors indicated that 48 percent of the Florida business population consisted of bona fide active nursery producers (Table 3).

Results

Year Established

The U.S. nursery and greenhouse industry has experienced substantial growth in the number of firms throughout history due to robust demand. Entry of new firms into the nursery industry appears to be continuing, as evidenced by the large percentage of surveyed Florida firms established since 2000 (32.2%), as shown in Figure 1. Rapid growth and expansion in the 1980s and 1990s are reflected in the number of firms currently operating that were established during those decades, 19.1 percent and 35.9 percent, respectively. As part of the regular business cycle, firms enter and exit the industry. For the United States as a whole, the survey results indicate that about 44 percent of firms entered the business since 2000. These results stand in contrast to the United States Census of Agriculture, which reported that the total number of firms in the nursery industry decreased by nearly 10 percent, from 56,070 firms in 2002 to 50,784 in 2007 (USDA/NASS 2009). Substantial turnover of firms is expected to continue in the nursery industry in the years to come, especially given the residual effects of the economic and financial crisis of 2008–09.

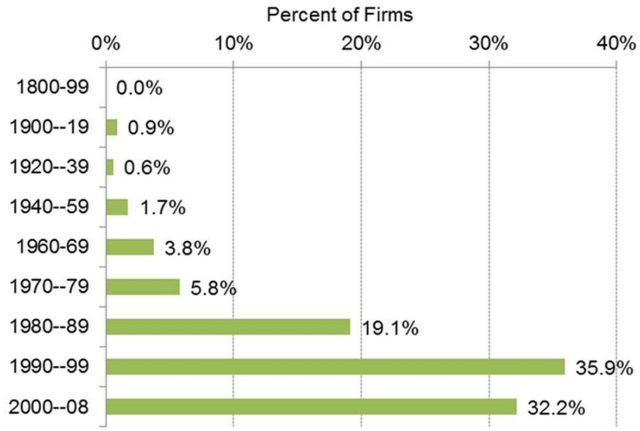

Figure 1. Year established of surveyed Florida nurseries

Sales and Employment

Annual sales were reported either as a specific amount or as a range, from less than $250,000 to more than $50 million (Table 3). Over 50 percent of all respondents in Florida were firms with less than $500,000 in annual sales, while 9.7 percent of firms had sales of $500,000 to $999,999, 5.6 percent had sales of $1 million to $1.99 million, 6.5 percent had sales of $2 million to 4.99 million, 1.6 percent had sales of $5 million to $9.9 million, and 2.9 percent had sales of $10 million or greater (Figure 2). Some 15 percent of survey respondents did not report annual sales. For the U.S. nursery industry, about 3.1 percent of firms had annual sales of $10 million or greater.

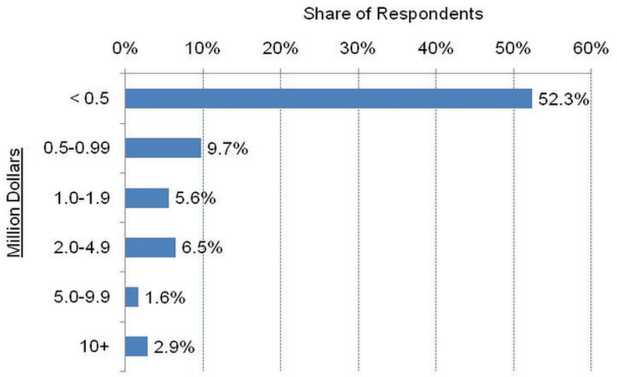

Figure 2. Distribution of 2008 annual sales reported by surveyed Florida nurseries

Total sales in 2008 reported by 455 Florida survey respondents amounted to $697 million, representing average sales per firm of $1.53 million (Table 4). A total of 9,896 employees were reported, including 6,875 permanent employees and 3,021 temporary employees. This represented an average of 15.3 permanent employees and 6.7 temporary employees per firm. By comparison, average annual sales-per-firm in the United States was $1.73 million, and the average number of employees was 20.5, including 11.5 permanent and 9.0 temporary employees.

Total nursery and greenhouse industry sales and employment for Florida were estimated based on the survey sample data together with a priori information on the distribution of firm sizes (Methods section). Based on the validated nursery industry population of 3,800 bona fide active firms in Florida (Table 2), total expanded industry sales in 2008 were estimated at $3.52 billion, and total industry employment was estimated at 39,791 permanent and temporary jobs (Table 4). By comparison, total industry sales and employment for the United States were estimated at $27.15 billion and 262,941 jobs, respectively. The estimated sales are significantly larger than official estimates by USDA; however, the estimated employment was smaller than reported in the 2007 United States Census of Agriculture (USDA/NASS 2009).

Plant Types Produced

The leading plant type produced by Florida nurseries was tropical foliage, reported by 30 percent of respondents and representing 31 percent of total sales reported, as shown in Figure 3. Deciduous and flowering trees were produced by 31 percent of respondents and represented 12 percent of total sales. Other miscellaneous or nonclassified plant types represented ten percent of sales, followed by flowering potted plants (8%), propagated liners, cuttings and plugs (7%), broad-leaved evergreen shrubs (5%), deciduous shrubs (5%), and evergreen trees (5%). Other remaining plant types representing at least two percent of total sales were vines and ground covers, flowering annual bedding plants, roses and azaleas. For the United States as a whole, the most common plant types in terms of overall sales were deciduous shade and flowering trees (12%), bedding plants (10%) and miscellaneous other plants (11%).

Native plants, which are defined as plants present in each respondent's home state before European settlement, represented 19.4 percent of total nursery sales in Florida. By comparison, for the United States overall, native plants represented 13.4 percent of total sales.

Nursery Product Forms

Respondents were asked to indicate the percent distribution of their sales in various product forms, including containerized, balled and burlapped, field grow bag, bare root, balled and potted/ process balled, in-ground containers (including pot-in-pot), and other types. Container-grown products were the dominant root packaging category in the survey, used by 76 percent of growers and representing 86 percent of all products sold (Figure 4). Balled and burlapped products were a distant second, used by 17 percent of growers and accounting for 3.8 percent of sales. Bare root plants represented 3.4 percent of sales. Field grow-bags and in-ground containers (pot-in-pot system) accounted for 1.6 percent and 0.7 percent of sales, respectively. Other product forms, such as cut plants, scions, budwood, seeds, tissue cultured plants, etc. accounted for 4.9 percent of total sales. For the United States, 65 percent of sales were containerized products, and 13 percent balled/burlapped.

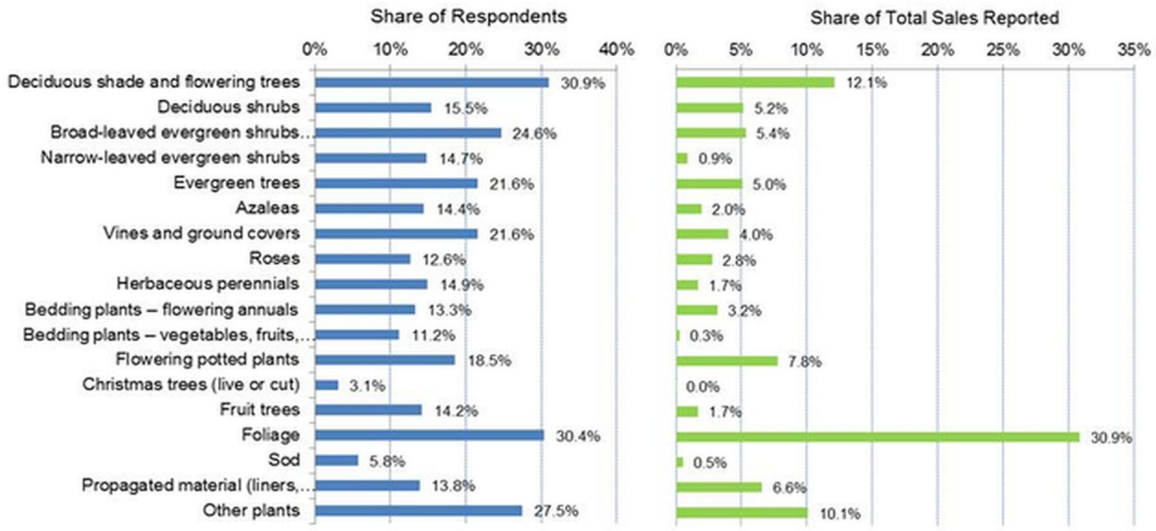

Figure 3. Plant types produced by Florida nurseries, 2008

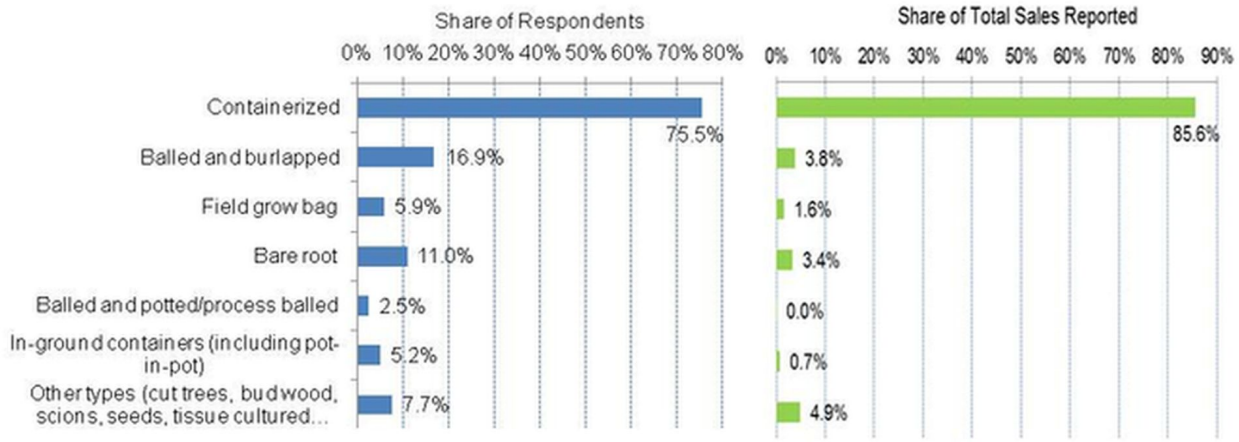

Figure 4. Nursery product forms sold by Florida nurseries, 2008

Market Channels

Overall, 93 percent of sales by Florida nursery growers went to wholesale markets and 7 percent of sales were direct retail to the public. For the United States overall, 77 percent of total sales were through wholesale channels and 23 percent were at retail. Many states with small nursery industries sold nearly all products at retail.

Among wholesale market outlets, the most important for Florida growers was re-wholesale distributors, used by 53 percent of firms and accounting for 34 percent of total wholesale sales (Figure 5). Landscape firms were the next largest outlet, used by 47 percent of firms and representing 41 percent of total sales. Other important outlet types in terms of share of sales were home centers (12%), single-location retail garden centers (12%), and mass merchandisers (8%). Multiple location garden centers accounted for only 3 percent of sales. For the United States, 31 percent of sales were to landscape firms, 22 percent to single location garden centers, 21 percent to re-wholesalers, 9 percent to mass merchandisers, and 7.5 percent each to home centers and multiple location garden centers.

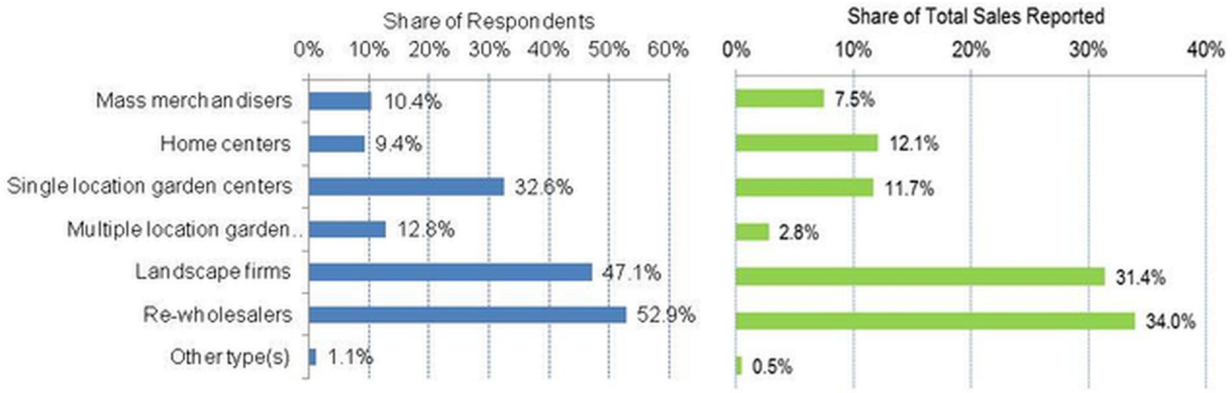

Figure 5. Wholesale market channels for Florida nursery products, 2008

Marketing Practices

Marketing practices examined in this study included sales to repeat customers, negotiated sales, brokerage sales, contract sales, and export sales. About 86 percent of overall nursery sales by Florida growers were to repeat customers (Figure 6). Negotiated sales—defined as transactions where various terms of sales such as price, quantity, and delivery were discussed—were practiced by 72 percent of firms, and represented 51 percent of total sales. Brokerage or resale of finished products was practiced by 62 percent of respondents and represented 11 percent of total sales. Forward contracting, the specification of pricing and terms of trade in advance of production, is an important marketing practice for risk management; it was used by 30 percent of respondents and accounted for 17 percent of total sales by Florida growers. Although the U.S. share of sales on contract was very similar (16%), it is notable that respondents in some states did not engage in any forward contracting.

Nearly 23 percent of Florida nurseries surveyed reported other producers as their most common type of buyer for forward contracting, followed by retail garden centers at 14 percent, mass merchandisers at 3 percent, cooperatives at 1 percent, and miscellaneous others at 7 percent (Figure 7).

The most common sales transaction methods for Florida nurseries surveyed were in-person orders and telephone orders, each accounting for 43 percent of total sales, and used by 74 percent and 56 percent of firms, respectively (Figure 8). Trade show orders represented 6 percent of sales, followed by Internet sales (4%) and mail order sales (3%). An average of 1.9 trade shows were attended with an exhibit, and 1.4 trade shows without an exhibit.

Irrigation Practices

Irrigation management practices are important for the long-term sustainability of the nursery industry. Groundwater wells were by far the most important source of irrigation water, used by nearly 78 percent of Florida nurseries, followed by natural surface water (21%), city/municipal water (8%), and recaptured sources (11%) as shown in Figure 9. Note that the sum of these sources exceeds 100 percent because respondents were allowed to indicate multiple sources. For the United States, the most common water source for nursery irrigation was also wells but at a lower level (56%), with higher levels for natural surface waters (27%) and city water (20%).

The most common irrigation application method in Florida was overhead sprinklers, used by 73 percent of respondents, followed by drip irrigation (42%), sub-irrigation or ebb/flood (5%), and other unspecified methods such as hand watering (15%) as shown in Figure 10. For the United States, the pattern of irrigation application methods used was similar, with overhead being the highest (60%), following by drip (38%), sub-irrigation (5%) and other (19%).

Computer Use

Respondents were asked to indicate whether they currently use, or plan to use the following computer functions within the next five years: word processing,

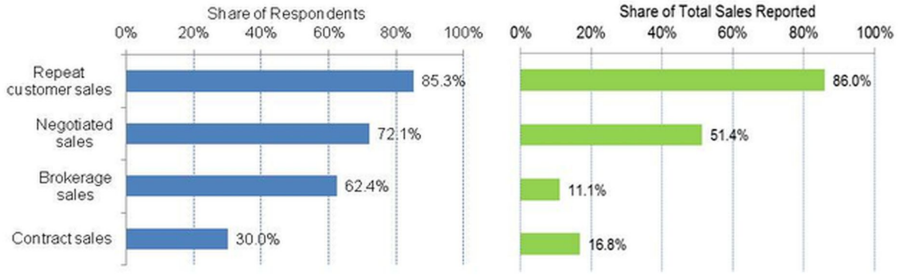

Figure 6. Marketing practices used by Florida nurseries, 2008

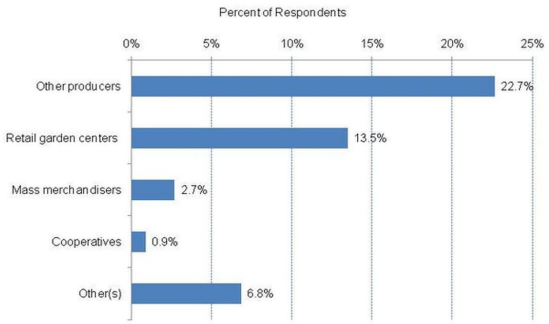

Figure 7. Customers for forward contracting as reported by Florida nurseries, 2008

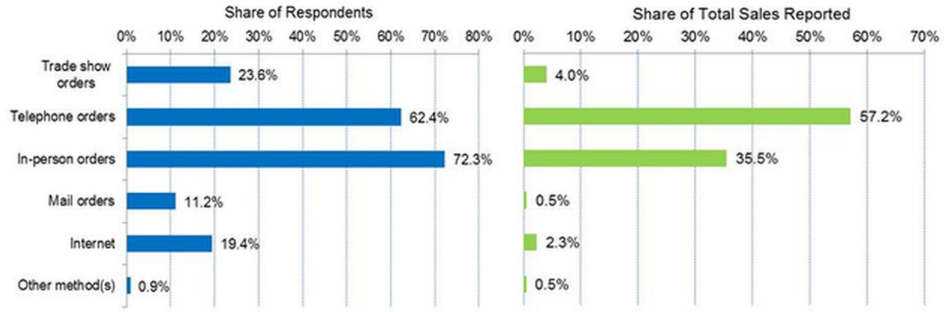

Figure 8. Sales transaction methods used by Florida nurseries, 2008

accounting/cost analysis, inventory, financial investment/analysis, internet commerce, compact discs (CDs) for marketing, communications (email), landscape design (CAD), production scheduling, greenhouse production controls, digital imaging for disease diagnosis, bar coding and other functions. These results for Florida growers are summarized in Figure 11. The most common use for computers currently was word processing, used by 58 percent of respondents, followed by accounting/cost analysis (57%) and communications/email (57%). Other common computer applications being used were inventory management (37%), financial analysis (26%), internet commerce (24%), and production scheduling (16%). Landscape design, greenhouse production controls, marketing compact discs, digital imaging, bar coding, and miscellaneous other functions were used by 10 percent or less of growers. The most common computer applications that growers planned to adopt within the next five years were inventory management (11%), production scheduling (11%), and internet commerce (10%). The pattern of computer usage was very similar for nurseries in the United States as a whole.

Integrated Pest Management Practices

Because the state of Florida has very high pest pressures due to the warm and humid climate, integrated pest management (IPM) has become a common best management practice for nurseries and other agricultural producers. Respondents were asked to indicate which of the following 22 IPM practices they follow: removing infested plants, alternating pesticides to avoid chemical resistance, elevating or spacing plants for air circulation, cultivation or hand weeding, disinfecting benches/ground cover, sanitized water foot baths, soil solarization or sterilization, monitoring pest populations with traps or sticky boards, adjusting pesticide application to protect beneficials, mulching to suppress weeds,

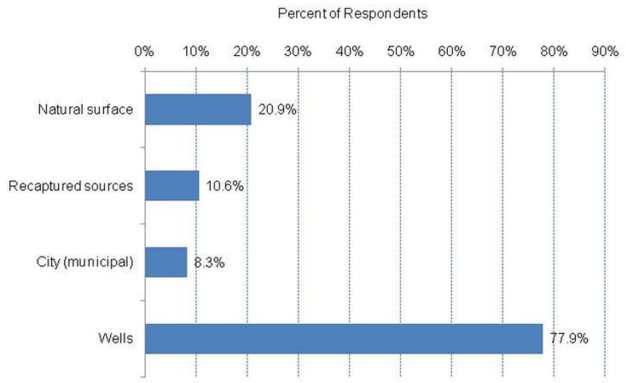

Figure 9. Irrigation water sources used by Florida nurseries, 2008

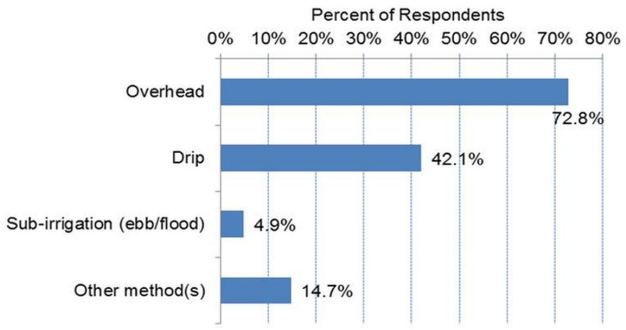

Figure 10. Irrigation application methods used by nursery producers in Florida, 2008

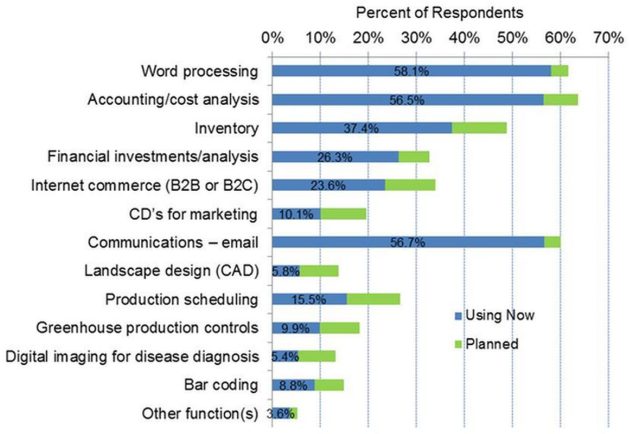

Figure 11. Use of computers for nursery business functions, now and planned within five years, by nursery producers in Florida, 2008

beneficial insect identification, inspecting incoming stock, managing irrigation to reduce pests, spot treatment with pesticides, ventilating greenhouses, use of beneficial insects, keeping pest activity records, adjusting fertilization rates, screening or barriers to exclude pests, biopesticides or lower toxicity pesticides, treating retention pond water, and pest resistant varieties. The most common IPM practices followed by nurseries in Florida were removing infested plants (73%), cultivation/hand weeding (71%), applying spot treatments with pesticides (65%), alternating pesticides to avoid chemical resistance (56%), elevating or space plants for air circulation (54%), and inspecting incoming stock for pests (52%) as shown in Figure 12. Other practices followed by at least 30 percent of respondents were disinfecting benches/ground covers, adjusting pesticide application to protect beneficial organisms, managing irrigation to reduce pests, ventilating greenhouses, and adjusting fertilization rates. The overall level and pattern of IPM practices followed by nurseries were similar at the national level.

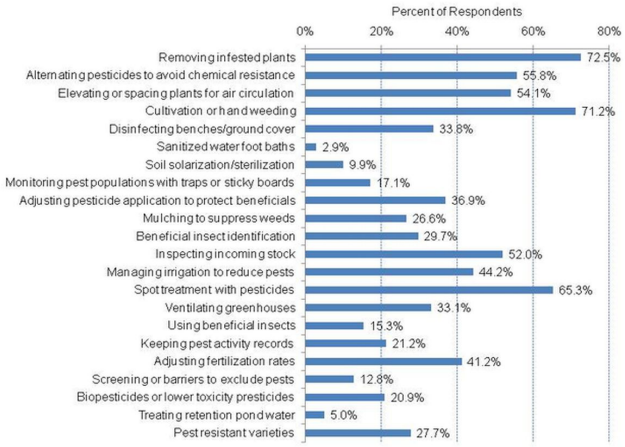

Figure 12. Integrated pest management (IPM) practices used by Florida nurseries, 2008

Inter-Regional Trade of Nursery Products

Shipment of nursery products from Florida to other states and countries is important for generating export earnings in the state economy. Survey respondents were asked to indicate the top five destinations for their products, including their home state. Sales by Florida growers to customers within the state represented two-thirds (67%) of total sales. Other states comprising a substantial share of Florida's nursery product sales were North Carolina (11.5%), Connecticut (4.8%), Georgia (2.3%), and Texas (2.1%). Foreign sales to Canada and Europe were 0.2 and 0.1 percent of total sales, respectively. For all nurseries in the United States, 73 percent of product sales were within the home state.

Respondents were asked to indicate the percentage of seedlings, whips, grafts, and liners purchased from the top five states/countries, including their own home state. As expected, most propagation materials purchased by Florida growers were from within the state (75%). Substantial purchases were also made from California (10%), Oregon (3.5%), Washington (1.2%), Georgia (1.1%), and Costa Rica (2.7%). Besides Costa Rica, other foreign countries noted for sourcing materials included the Bahamas, Dominican Republic, Brazil, Belize, Mexico, Canada, Belgium, Germany, Netherlands, China, Australia, and New Zealand.

Advertising Expenditures

Advertising expenditures reported by Florida survey respondents averaged 2.4 percent of total sales revenues. This was much lower than the overall average for U.S. nurseries (4.6%). The most popular advertising media in terms of percentage of Florida respondents was the internet (25%), followed by trade journals (21%), and trade shows (20%) as shown in Figure 13 (see next page). In terms of advertsiing expenditures, however, the most important media types were trade shows and gardening publications, accounting for 29 percent and 24 percent of total spending, respectively, followed by catalogs (9.8%), trade journals (6.3%), internet (6.5%), and miscellaneous other media (12.3%). For all U.S. nurseries, advertising expenses were higher for internet websites (13%), yellow pages (8%), and radio/TV (5%), but were lower for trade shows (21%), gardening publications (4%), and trade journals (3%).

Factors Affecting Price Determination, Geographic Expansion, and General Industry Outlook

Survey respondents were asked to indicate the importance of factors affecting price determination, geographic expansion, and general issues affecting the nursery business by rating each on a scale of 1 to 4, with 4 representing "most important" and 1 representing "not important." The eight factors affecting product prices were cost of production, inflation, other grower prices, grade of plants, market demand, product uniqueness, inventory levels, and last year's prices. The factors with the highest percentage of respondents rating as "important" or "very important" were market demand (61%), cost of production (60%), grade of plants (57%), and other growers' prices (53%) as shown in Figure 14. For all U.S. nurseries, the relative importance of these factors was very similar, although cost of production, grade of plants, and product uniqueness were rated somewhat higher.

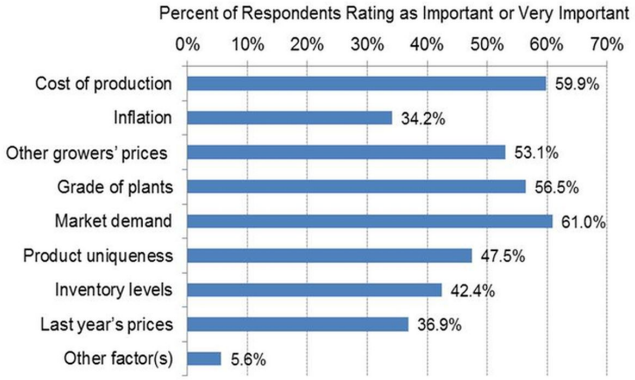

Figure 14. Factors affecting product pricing for Florida nurseries, 2008

Factors potentially limiting the expansion of the geographic scope of nursery marketing included debt capital, equity capital, marketing, personnel, production, transportation, and plant offerings. The most important factors were transportation and plant offerings, both rated as "important" or "very important" by 38 percent of respondents, followed by production factors (35%) and marketing factors (32%) as shown in Figure 15. For U.S. nurseries generally, all of these factors were rated slightly more important, including transportation (45%), plant offerings (43%), and production (41%).

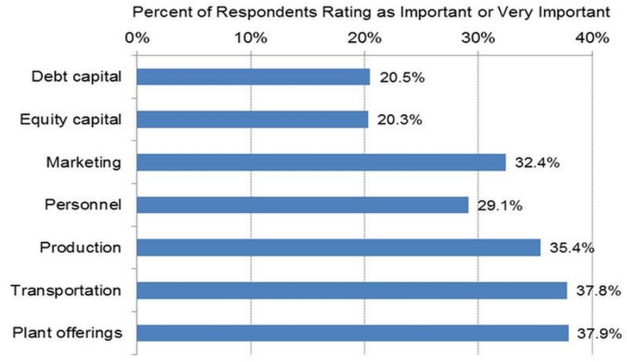

Figure 15. Factors affecting geographic expansion for Florida nurseries, 2008

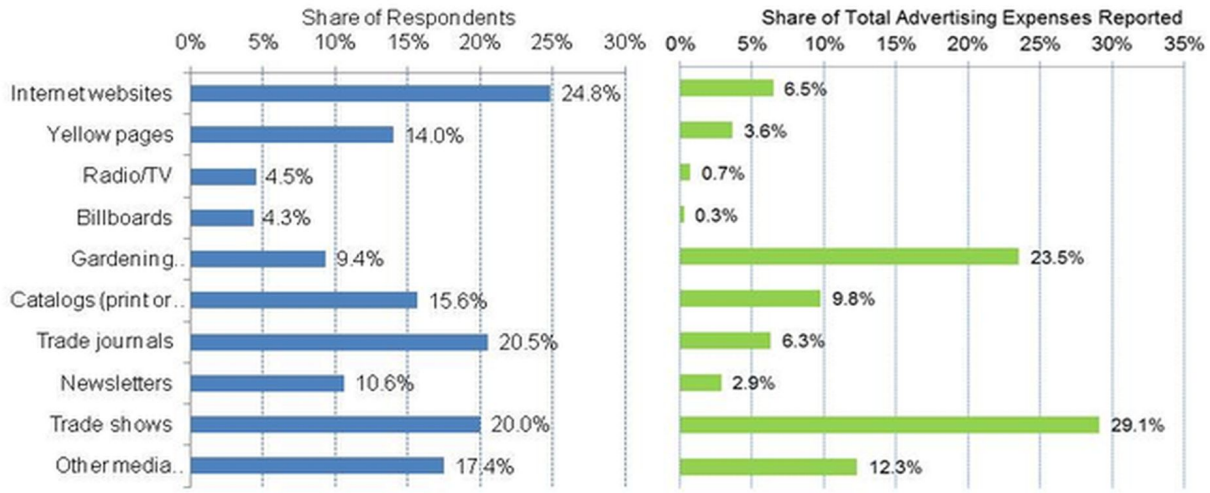

Figure 13. Advertising media used by Florida nurseries, 2008

General issues that may impact the nursery business included weather uncertainty, land, market demand, labor, water supply, debt capital, equity capital, own managerial expertise, competition/price undercutting, environmental regulations, other government regulations, ability to hire competent management, and ability to hire competent hourly employees. Market demand was the factor rated as important/very important by the most respondents (66%), followed by competition/price undercutting (51%), weather uncertainty (50%), own managerial expertise (47%), water supply (43%), and labor (43%) as shown in Figure 16. For all U.S. nurseries surveyed, again, market demand was rated as important/very important by the highest percentage of respondents (68%), followed by weather uncertainty (59%), own managerial expertise (51%), competition (46%), labor (45%), ability to hire competent hourly employees (41%), and water supply (39%).

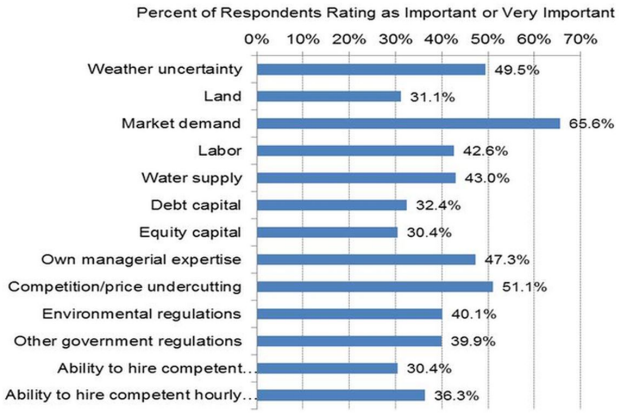

Figure 16. General issues impacting Florida nursery businesses, 2008

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Table 1. Florida nursery population, mail, and internet survey sample, number of respondents, and response rate

Business Population	Survey Sample			Share of Population Sampled (percent)	Survey Respondents			Response Rate (percent)	Share of Respondents Reporting Sales (percent)
	Mail	*Internet (e-mail)*	*Total*		*Mail*	*Internet (e-mail)*	*Total*		
7,848	2,365	783	3,148	40.1	456	100	556	17.7	81.8

Table 2. Ranges for annual sales reported, and average value used to estimate sales

Sales Range	Average Value
Less than $249,999	$51,426
$250,000 to $499,999	$347,069
$500,000 to $999,999	$700,757
$1,000,000 to $1,999,999	$1,324,466
$2,000,000 to $2,999,999	$2,303,556
$3,000,000 to $3,999,999	$3,325,000
$4,000,000 to $4,999,999	$4,162,889
$5,000,000 to $9,999,999	$7,217,964
$10,000,000 to $14,999,999	$12,325,000
$15,000,000 to $19,999,999	$17,400,000 *
$20,000,000 to $29,999,999	$24,666,667
$30,000,000 to $39,999,999	$35,000,000
$40,000,000 to $49,999,999	$45,000,000 *
$50,000,000 or more	$50,000,000 *

* Sales estimated at midpoint or lower end of range due to lack of specific information.

Table 3. Florida telephone survey sample, share of firms unqualified or inactive, and population validated

Calls Made (number)	Interviews Completed (number)	Firms Unqualified (percent)	Firms Inactive (percent)	Population Validated* (percent)
936	168	34.6	25.9	48.4

* Share of population validated calculated as (1-A)x(1-B), where A is share of firms unqualified and B is share of firms inactive.

Table 4. Annual sales and employment reported by surveyed nurseries, and expanded estimates for the business population in Florida, 2008

Category	Number
Permanent employment reported	6,875
Temporary employment reported	3,021
Total employment reported	9,896
Annual sales reported (million dollars)	697.5
Average number of permanent employees per firm	15.3
Average number of temporary employees per firm	6.7
Average annual sales per firm ($1,000)	1,533
Expanded sales (million dollars)	3,520.9
Expanded employment (permanent & temporary jobs)	39,791

* Expanded sales and employment estimates based on telephone survey respondents reported inactive and call disposition ineligible (Table 3).

Appendix. Survey Questionnaire

***2009 National Nursery Industry Survey*,**
Conducted by the *Green Industry Research Consortium* of University Horticulturists and Economists

Funded by the Horticultural Research Institute (HRI)

Dear Nursery Owner or Manager:

This survey is being conducted by the *Green Industry Research Consortium*, a group of university-based horticulturists and agricultural economists, with funding by the Horticultural Research Institute (HRI). This represents the fifth this this survey has been conducted by our group since 1989. The purpose of the survey is to document trends in production and marketing practices in the U.S. nursery and greenhouse industry. The survey is being sent to randomly selected nursery firms throughout the United States. Information collected in this survey will be invaluable to researchers, educators, and allied professionals, as well as owners and managers in the nursery industry. Much of this information is not available from any other source. To see examples of the results provided by this project, please visit our website at http://www.s1021.org/publications.html.

It is important that you respond to this survey so that your type of business is represented in the study. Of course, your participation is voluntary, and you do not have to answer any questions you wish to omit. All information provided is ***anonymous and strictly confidential***, and results will only be disclosed in summary form. Unfortunately, while we cannot provide any compensation for your participation, your time in this matter is gratefully appreciate.

When you have completed the questionnaire, please return it in the postage-paid envelope provided.

If you have questions or concerns about the survey, please contact one of the principal investigators:

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979-845-5284
mapalma@tamu.edu

Thank you very much for your cooperation!

This project is dedicated to the memory of our colleague John Brooker, an Agricultural Economist at the University of Tennessee, who had a long and distinguished career in service to the environmental horticulture industry, and was instrumental in developing and conducting the National Nursery Survey.

Appendix. Survey Questionnaire

***2009 National Nursery Industry Survey*,**
Conducted by the *Green Industry Research Consortium* of University Horticulturists and Economists

General Company Information

1. In what **state** is your business primarily located? _____ (use two-letter abbreviation)
2. What is the **zip code** for this location? _____
3. Does your business **operate a nursery in another state**? _____ Yes _____ No
4. What year was your firm established? _____

Employment

5. How many employees did your firm have last year (2008)?

   _____ Permanent employees

   _____ Temporary or seasonal employees (average number during peak season)

   How has the **number of employees changed** over the last five years? (check which applies)

   Permanent: _____ increased _____ remained the same _____ decreased

   Temporary: _____ increased _____ remained the same _____ decreased

   If employment has changed, indicated by what percent: Permanent _____% Temporary _____%

Nursery Product Types

6. What percentage of your sales last year (2008) were for the following **plant types**? (answers should sum to 100%)

____% Deciduous shade and flowering trees	____% Deciduous shrubs
____% Broad-leaved evergreen shrubs (excl. azaleas)	____% Narrow-leaved evergreen shrubs
____% Evergreen trees	____% Azaleas
____% Vines and grounds covers	____% Roses
____% Herbaceous perennials	____% Bedding plants – flowering annuals
____% Bedding plants – vegetables, fruits, and herbs	____% Flowering potted plants
____% Christmas trees (live or cut)	____% Tree fruits
____% Foliage	____% Sod
____% Propagated material (liners, cuttings, plugs, etc.)	____% Other (list

Appendix. Survey Questionnaire

***2009 National Nursery Industry Survey*,**
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7. What percentage of your total plant sales are native plants, i.e., plants present in your state before European settlement? _____%

8. What percentage of your total plant sales were in the following **product forms** last year? (answers should sum to 100%)

____% Containerized ____% Balled and burlapped

____% Field grow bag ____% Bare root

____% Balled and potted / process balled ____% In-ground containers (incl. pot-in-pot)

_____% Other types (e.g., cut trees, budwood, scions, seeds, tissue cultured plantlets, unrooted cuttings)

Production and Management Practices

9. What percentage of your irrigation water is obtained from the following source(s)? (answers should sum to 100%)

____% Natural surface ____% Recaptured

____% City ____% Well

10. What percentage of your irrigation water is applied by the following methods? (answers should sum to 100%)

____% Overhead ____% Drip

____% Subirrigation (ebb/flood) ____% Other types (list)

11. How has your **irrigation water use on a per acre basis** changed over the past five years (check answer that applies)

____ increased ____ remained the same ____ decreased

12. What functions of your firm are currently **computerized**, or will be in the next five years?

Function	Using Currently	Planned for Next Five Years (check if yes)
Word processing	_____	_____
Accounting / cost analysis	_____	_____
Inventory	_____	_____
Financial investments / analysis	_____	_____
Internet commerce (B2B or B2C)	_____	_____
CDs for marketing	_____	_____
Communications – E-mail	_____	_____
Landscape designing (CAD)	_____	_____
Production scheduling	_____	_____
Greenhouse production controls	_____	_____
Digital imaging for disease diagnosis	_____	_____
Bar coding	_____	_____
Other (please list)	_____	_____

Appendix. Survey Questionnaire

***2009 National Nursery Industry Survey*,**
Conducted by the *Green Industry Research Consortium* of University Horticulturists and Economists

13. Which of the following **Integrated Pest Management (IPM) practices** do you follow? (check any that apply)

____ Remove infested plants or plant parts	____ Alternate pesticides to avoid chemical resistance
____ Elevate or space plants for air circulation	____ Use cultivation, hand weeding
____ Disinfect benches/ground cover	____ Use sanitized water foot baths
____ Soil solarization/sterilization	____ Monitor pest populations with tarp/sticky boards
____ Adjust pesticide appl. to protect beneficial	____ Use mulches to suppress weeds
____ Beneficial insect identification	____ Inspect incoming stock
____ Manage irrigation to reduce pests	____ Spot treatment with pesticides
____ Ventilate greenhouses	____ Use of beneficial insects
____ Keep pest activity records	____ Adjust fertilization rates
____ Use screening/barriers to exclude pests	____ Use biopesticides / lower toxicity
____ Treat retention pond water	____ Use pest resistant varieties

Marketing Practices

14. At how many **trade shows** was your firm represented last year, with out without an exhibit?

____ With an exhibit ____ Without an exhibit

15. What percentage of your sales are to **repeat customers**? _____%

16. Do you publish discount (price) information for large-volume purchases? _____ Yes _____ No

17. What percent of your sales are **negotiated**, i.e., there was discussion over price, quality, or other terms of sale? _____%

18. What percentage of your sales were made last year using the following **sales methods**? (answers should sum to 100%) _____%

____% Trade show orders ____% Telephone orders ____% In-person orders

____% Mail orders ____% Internet sales

Appendix. Survey Questionnaire

***2009 National Nursery Industry Survey*,**
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19. What percentage of your sales last year were **wholesale vs. retail**? (answers should sum to 100%)

____% Wholesale ____% Retail

20. If you sell wholesale, what percentage of your wholesale sales were to the following type(s) of **market outlets**? (answers should sum to 100%)

____% Mass merchandisers (general merchandise stores, etc.)

____% Home centers (home improvement, building supply, hardware, etc.)

____% Single location garden centers

____% Multiple location garden centers (chain stores)

____% Landscape firms (in-house or external)

____% Re-wholesalers (brokers, other growers, etc.)

21. Do you resell or broker plants from other growers? _____ Yes _____ No

If yes, for what percent of your total sales does this account? _____%

22. What percentage of your total sales are **on contract**, i.e., sold or committed before being produced? _____%

23. If you do **forward contracting**, which of the following types of buyers contract for production with your firm? (check any that apply)

____ Other producers ____ Retail garden centers ____ Mass merchandisers

____ Cooperatives ____ Other (please specify

24. What percentage of total sales did your firm spend on **advertising** last year (2008)? _____%

25. What percentage of your **advertising budget** is spent on the following media forms? (answers should sum to 100%)

____% Internet websites ____% Yellow pages

____% Radio / TV ____% Billboards

____% Gardening publications ____% Catalogs (print or CD)

____% Trade journals ____% Newsletters

____% Trade shows ____% Other (please specify)

Appendix. Survey Questionnaire

***2009 National Nursery Industry Survey*,**
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Regional Trade in Nursery Products

26. What are the top five **states or countries**, including your own state, that you **purchase from** to obtain seedlings, liners, whips, grafted material, tissue culture plantlets, cuttings, or plugs, and the percentage of total purchases represented by each?

Top Five States or Countries	Percent of Purchases
1. _____	_____%
2. _____	_____%
3. _____	_____%
4. _____	_____%
5. _____	_____%

27. Do you **export** nursery products out of the United States? _____ Yes _____ No

If yes, what percentage of total sales are for exports? _____%

If you export, please list the countries: _____

_____

28. What are the top five states or countries, including your own state, that you **sell to**, and what percentage of total sales does each represent?

Home State	Percent of Total Sales
1. _____	_____%
2. _____	_____%
3. _____	_____%
4. _____	_____%
5. _____	_____%

Appendix. Survey Questionnaire

***2009 National Nursery Industry Survey*,**
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Factors Affecting Management and Planning

29. Rate the importance of each of the following **factors for determining prices for your products**, using a scale of 1 to 4, with 1 = not important, 2 = minor importance, 3 = important, and 4 = very important (check in appropriate column).

	1	2	3	4
Cost of production	_____	_____	_____	_____
Inflation	_____	_____	_____	_____
Other growers' prices	_____	_____	_____	_____
Grade of plants	_____	_____	_____	_____
Market demand	_____	_____	_____	_____
Product uniqueness	_____	_____	_____	_____
Inventory levels	_____	_____	_____	_____
Last year's price	_____	_____	_____	_____
Other	_____	_____	_____	_____

Please specify other _____

30. Rate each of the following **factors affecting the geographic range of your trading areas**, using a scale of 1 to 4, with 1 = not important, 2 = minor importance, 3 = important, and 4 = very important (check in appropriate column).

	1	2	3	4
Debt capital	_____	_____	_____	_____
Equity capital	_____	_____	_____	_____
Marketing	_____	_____	_____	_____
Personnel	_____	_____	_____	_____
Production	_____	_____	_____	_____
Transportation	_____	_____	_____	_____
Plant offerings	_____	_____	_____	_____

Appendix. Survey Questionnaire

***2009 National Nursery Industry Survey*,**
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31. Rate each of the following **factors impacting your business**, using a scale of 1 to 4, with 1 = not important, 2 = minor importance, 3 = important, and 4 = very important (check in appropriate column).

	1	2	3	4
Weather uncertainty	_____	_____	_____	_____
Land	_____	_____	_____	_____
Market demand	_____	_____	_____	_____
Labor	_____	_____	_____	_____
Water supply	_____	_____	_____	_____
Debt capital	_____	_____	_____	_____
Equity capital	_____	_____	_____	_____
Own managerial expertise	_____	_____	_____	_____
Competition / Price undercutting	_____	_____	_____	_____
Environmental regulations	_____	_____	_____	_____
Other government regulations	_____	_____	_____	_____
Competent management	_____	_____	_____	_____
Competent hourly employees	_____	_____	_____	_____

32. What was the **gross value of product sales** from your nursery last year (2008) or most recent completed fiscal year? Please enter the value here (rounded to nearest $1,000): %_____

____ Less than $249,999
____ $250,000 to $499,999
____ $500,000 to $999,999
____ $1,000,000 to $1,999,999
____ $2,000,000 to $2,999,999
____ $3,000,000 to $3,999,999
____ $4,000,000 to $4,999,999
____ $5,000,000 to $9,999,999
____ $10,000,000 to $14,999,999
____ $15,000,000 to $19,999,999
____ $20,000,000 to $29,999,999
____ $30,000,000 to $39,999,999
____ $40,000,000 to $49,999,999
____ $50,000,000 or more