Marketing Trends and Business Management Practices for the Wholesale Nursery Industry in California

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SUMMARY. A survey of wholesale nurseries in the United States was conducted in 1999, with 169 of the 806 nurseries surveyed responding from the state of California. The survey, consisting of 29 questions related to production practices, products, sales, and marketing, was sent to a random group of nurseries. Based on these results, over 50% of the new nursery businesses in California have been established within the last two decades. While most of the nurseries have computerized business practices, only 21% have implemented the use of computers or other automation in their production practices. Horticulturally, containerized plant production (80% of the industry) is still the primary method of growing and shipping plants in California, and most (90%) of these products are sold within the state. Nevada, Arizona, Oregon, Washington, and Texas are the primary destinations for plant material that is exported out of state. The factors that nursery owners feel influence sales the most include market demand, weather unpredictability, and water supply, while governmental and environmental regulations are perceived to have the least impact. The factors that influence product price include cost of production, market demand, and product uniqueness.

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In 1999, the nursery and greenhouse industries of California represented 20% of the nation's total receipts for these commodities (Johnson, 1999). Florida and Texas ranked second and third, with 11% and 9% of the country's total receipts, respectively (Johnson, 1999). Since California accounts for such a large share of the U.S. nursery industry, modifications in the state's nursery industry may have an impact on the nation's nursery economy. In the following study, a survey of California's nursery business was conducted, as part of a nationwide survey, to evaluate structural changes in marketing practices and interstate flows of nursery crops. The resulting information may be used on a statewide and nationwide level to prioritize research and extension program resources committed to support the industry. The information may also be of use to nursery owners when making decisions about future production and marketing adjustments in company operations.

Materials and methods

SURVEY DEVELOPMENT. In 1989, a survey was developed to examine trade flows and marketing practices for the U.S. nursery industry (Brooker and Turner, 1990). This survey has been conducted every 5 years since 1989 (Brooker and Turner, 1990; Brooker et al., 1995, 2000). Based on the suggestions of participating scientists and nursery leaders, questions have been added, deleted, and modified to improve the first survey's clarity and to improve the quality of information collected. Horticulturists and agricultural economists who are members of the S290 Multi-state Research Project developed the original survey and subsequent versions. This project is entitled "Technical and Economical Efficiencies of Producing, Marketing and Managing Environmental Plants" and focuses on financial and market analyses, along with advances in retail and consumer research.

SURVEY CONTENT AND DISTRIBUTION. Questions were broken down into five categories: 1) general business information, 2) product descriptions, 3) sales and marketing techniques, 4) product distribution, and 5) product pricing. The method of selecting nurseries to receive the surveys varied among the states. For California, a random selection of nurseries was ob-

tained by choosing every fifth nursery from a list of 4680 wholesale nurseries licensed in California (California Department of Food and Agriculture, 1998). In addition, the largest nurseries, based on profits, were also included in the survey, since their annual sales represent a significant portion of the state's nursery revenues, and would, therefore, impact results of the survey. After removing nurseries with duplicate listings, 806 nurseries were chosen. The modified survey was sent out by D. Pittenger of the University of California Cooperative Extension. A cover letter was included with each survey describing the purpose of the survey and emphasizing the importance of the survey to the needs of the industry, as well as the extension and research programs in California. Four weeks after the survey was sent to the nurseries, another letter was sent to remind companies to complete and return the questionnaire. Nationwide, 22 states participated in the survey (Brooker et al., 2000). For California, 169 surveys were completed and returned. In some cases, respondents did not answer all questions or did not answer questions completely. Any incomplete or unclear answers were not used in the data analyses. For example, some questions required answers in a numerical format, but respondents answered in a text format, which did not relate to the original question.

Results and discussion

Business profile

INFRASTRUCTURE. Over 25% of the nurseries responding were formed during the past 10 years, and over 50% were formed during the past 20 years (Fig. 1). Based on annual sales data, the size of nursery companies was quite varied, with over 30% of businesses bringing in sales receipts totaling less than \$50,000 per year. Yet some nurseries had yearly sales in excess of \$10 million (Table 1). Average nursery size was 21 acres (8.5 ha) and consisted of an employee base of 27 permanent personnel and an additional nine temporary employees during the busy season. Based on the 1994 survey, the permanent employee base increased over the past 5 years, with an average of 20 permanent employees in 1994 (Schuch and Klein, 1996). Nearly half of the plant material produced and sold was trees and shrubs, but no single crop comprised

Table 1. Average annual sales values for California wholesale nurseries and the percentage of nurseries within the specific sales bracket.

Gross value of products (\$)	Proportion of nurseries (%) ²
Less than 50,000	31
50,000–99,999	9
100,000–249,000	12
250,000–499,000	12
500,000–999,999	6
1,000,000–1,999,999	9
2,000,000–2,999,999	5
3,000,000–3,999,999	3
4,000,000–4,999,999	4
5,000,000–9,999,999	4
10,000,000 or greater	4

²Data are derived from a random survey, which was conducted in 1999 on the ornamental nursery industry in California.

Fig. 1. The percentage of existing California nurseries that were established during a given decade. Data is based on 169 respondents from a random survey conducted in 1999 on the ornamental wholesale nurseries in California.

more than 20% of all production (Fig. 2). The primary method of plant production and packaging was containerized plants, with 141 of the 164 nurseries that responded selling plants in this type of growing system (Table 2). Containerized plant production has long been the predominant method of plant production in California and other warm climate states (Hall, 2001; Hodges and Haydu, 2000; Schuch and Klein, 1996), but it is also gaining popularity in states with more temperate climates (Brooker et al., 2000).

GEOGRAPHICAL DISTRIBUTION. Most nurseries are located near the coast of central and southern California (Fig. 3) (California Agricultural Statistics Service, 2002), regions that are in proximity to major urban centers. Even though the costs of land and water are higher in the coastal regions compared to inland valleys, many nurseries remain along the coasts due to their mild, year-round growing climates. However, as urban populations increase near Los Angeles, San Diego, and San Francisco, nursery operations have begun to relocate to inland and less populated regions of the state. During the past decade, nursery production has decreased in Los Angeles, San Mateo, and San Diego counties, but has increased in the less populated and inland Riverside County (Fig. 3). Some

Fig. 2. Percentage of California's total nursery sales for different types of plant material, based on dollar value. Data are based on 169 respondents from a random survey conducted in 1999 on the ornamental wholesale nurseries in California.

Table 2. Number of California nurseries utilizing a specific packaging method and the percentage of total sales for each type of packaging method utilized.

Method of packaging	Nurseries (no.)	Proportion of sales (%) ²
Bare root	28	5.9
Balled and potted	8	1.0
Balled and burlapped	10	1.1
Processed balled	1	0.1
Container	141	80.1
Field grow-bag	7	1.4
In-ground containers (pot-in-pot)	8	2.6
Other ³	19	7.8

²Data are based on 164 respondents from a random survey, which was conducted in 1999, on the ornamental nurseries in California.

³This category includes other packaging methods, such as cut Christmas trees, budwood scions, seeds, tissue cultured plants, unrooted cuttings, and cut flowers.

Fig. 3. Map of the state of California with the top five counties for nursery crop production, based on the percentage of the state's gross nursery products sales produced for the years of 1991 and 2002. Counties are shaded in gray, and the percentage of the state's total nursery sales is indicated for each county, with 1991 data in parentheses. Data is based on California Agricultural Statistics Service, 2002.

of the larger nurseries also have additional production facilities in other states: Arizona, Florida, and Washington. When asked what factors would most likely limit the geographical expansion of their businesses, over 50% of the respondents considered all factors listed (capital, marketing, personnel, production, transportation, and plant offering) to be important (Table 3).

BUSINESS AND PRODUCTION PRACTICES. More than half of the nurseries surveyed had computerized business processes, such as accounting and word processing. However, few companies have computerized their horticultural practices, such as production scheduling and greenhouse operations (Fig. 4). Based on reports from University of California Cooperative Extension Farm Advisors (J. Newman and K. Robb, personal communication), most computerized production processes are associated with planting and irrigation. However, manual labor is still utilized for many planting and irrigation needs.

Sales, marketing, and clientele

CLIENTELE. Based on other research (Templeton et al., 2000), 42% (\$3.5 billion) of California environmental horticultural sales in 1995 went to the installation and maintenance of residential landscaping. The percentage of environmental horticulture sales that were accounted for by plant purchases was not indicated. However, the economic importance of residential landscaping to the wholesale nursery industry is reflected in the current survey, as over 60% of the respondents sold plants directly to landscapers, retailers, and re-wholesalers (Table 4), with over 75% of the clientele being repeat customers.

MARKETING AND SALES. The primary methods of conducting business were diverse, but the majority of the nurseries that responded made most sales via the telephone or in person (Table 5). The major factors perceived

Table 3. Ratings by California wholesale nurseries on the perceived level of importance that different factors may have on the expansion of the geographic scope of the nursery's trading area.

Influencing factor	Proportion of respondents (%) ^a				
	Very minor	Minor	Neutral	Important	Very important
Capital	12	6	22	25	35
Marketing	8	3	26	35	28
Personnel	10	8	25	28	29
Production	6	6	25	30	33
Transportation	14	8	19	26	33
Plant offering	14	9	26	31	20

^aValues for the rating of each factor are based on a percentage of the respondents who answered the question. Data are derived from a random survey, which was conducted in 1999, on the ornamental nurseries in California.

Fig. 4. The percentage of California nurseries that have computerized various horticultural and administrative functions. Data is based on 169 respondents from a random survey, conducted in 1999, on the ornamental wholesale nurseries in California.

Table 4. Types of California wholesale nursery customers and the percentage of respondents who claimed to sell to these types of clientele.

Wholesale clientele type	Proportion of respondents (%) ^z
Landscape firms (in-house or external)	69
Retail firms (garden centers)	60
Re-wholesalers (brokers, other grower, etc.)	60
Retail firms (other - grocery, hardware)	26
Retail firms (mass merchandisers/home centers)	24

^zData are based on 137 respondents from a random survey, which was conducted in 1999, on the ornamental nurseries in California.

to have the most impact on the business were market demand, weather uncertainty, and water supply, while environmental regulations and governmental regulations were considered to have the least impact on business (Table 6).

Product pricing and flow

PRICE DETERMINATIONS. When asked about product pricing, 54% of respondents considered the cost of production the most important factor that influences the price of a product (Table 7). Grade of plant (47%), market demand (43%), and product uniqueness (43%) were also considered very important factors in determining product prices.

PRODUCT IMPORTS. Over 80% of the plant materials required for production, such as seedlings, bulbs, rooted liners, cuttings, and grafted material, were purchased within California. The remaining 20% of the plant materials were derived primarily from Oregon, Washington, and Florida.

PRODUCT EXPORTS. Ninety-two percent of California nurseries' total annual sales are derived from in-state purchases. The primary destinations for out-of-state purchases were Nevada, Arizona, Oregon, Washington, and Texas. Similar product distribution was observed for the surveys conducted in 1988 and 1994 (Schuch and Klein, 1996). Product export for California is less than that observed for the nursery industry of Florida, which exports 31% of products produced, and the Texas nursery industry, which exports 51% products produced (Brooker et al., 2000). Internationally, only 8% of the respondents exported nursery products out of the U.S., and these exported products accounted for 3.5% of their total sales.

Table 5. The primary methods used for conducting business transactions by the California wholesale nursery industry and the number of nurseries who utilize each transaction type.

Method of sales transactions ^z	Nurseries utilizing sales transaction type (no.) ^y
Trade show orders (negotiated)	8
Trade show orders (nonnegotiated)	15
Telephone orders (negotiated)	58
Telephone orders (nonnegotiated)	85
In person orders (negotiated)	74
In person orders (nonnegotiated)	97
Mail orders	13

^zNegotiated indicates that the price, quality, shipping, or other terms of the sale were discussed.

^yData are derived from a random survey, which was conducted in 1999 on the ornamental nurseries in California.

Table 6. Ratings on the impact that climate, business, and governmental factors may have on California wholesale nursery businesses. Values for the ratings are based on the percentage of respondents who answered the question.

Influencing factor	Proportion of respondents (%) ^z				
	Very minor	Minor	Neutral	Important	Very important
Market demand	4	3	6	30	57
Weather uncertainty	7	7	12	28	46
Water supply	19	4	13	25	39
Own managerial expertise	13	4	13	34	36
Capital	14	7	23	26	30
Ability to hire competent hourly employees	24	6	12	32	26
Land	27	10	15	24	24
Competition	12	12	23	30	23
Labor	20	11	20	25	24
Ability to hire competent management	31	9	15	22	23
Environmental regulations	21	14	20	26	19
Other government regulations	20	10	25	27	18

^zData are derived from a random survey, conducted in 1999, on the ornamental nurseries in California.

Table 7. Ratings on the impact that different factors may have on the price determination of products grown in California wholesale nurseries. Values for the ratings of each factor are based on a percentage of 159 respondents.

Influencing factor	Proportion of respondents (%) ^z				
	Very minor	Minor	Neutral	Important	Very important
Cost of production	4	4	11	27	54
Inflation	16	18	27	27	11
Other growers prices	7	7	19	36	31
Grade of plants	4	5	16	27	47
Market demand	4	3	17	34	43
Product uniqueness	7	3	18	29	43
Inventory levels	10	10	33	28	18
Last year's price	16	13	31	26	14
Other	0	25	0	25	50

^zData are derived from a random survey, which was conducted in 1999 on the ornamental nurseries in California.

Conclusions

Based on the results of this survey, the California wholesale nursery industry is very diverse in the size of operations and in the plant materials produced. The nursery industry is continuing to expand in California, with over 50% of businesses being established during the last two decades; however, the geographical distribution of nurseries is shifting away from the populated coastal communities of southern California to less populated regions of the inland valleys. Most nurseries utilize computers for business practices, but only one-fifth of them have adopted any type of computerized technology for horticultural practices, such as irrigation and planting. Horticulturally, containerized plant production (80% of the industry) is still the primary method of growing and shipping plants in California. The primary sources of propagation material are within the state. Based on these data, the cultural practices have not changed since the last survey was conducted in 1994. However, the shift of nursery facilities from coastal communities to inland areas suggests that cultural practices will need to be modified to deal with the more extreme weather conditions (winter cold and summer heat) of California's interior valleys.

From a marketing perspective, most of the plant material is sold within the state, with residential landscaping being the primary destination for the majority of wholesale nursery sales. When plant material is exported, the western states are the primary destinations. The factors that nursery owners felt affected business the most were market demand, unpredictability of the weather and water supply, while governmental and environmental regulations were perceived to have the least impact.

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