Competition in the Horticultural Container Market in the Southeastern United States

Economics Report 01-2

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March 12, 2001

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Competition in the Horticultural Container Market in the Southeastern United States

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Executive Summary

This study investigated the question of whether competitiveness in the horticultural container market in the southeast US has changed as a result of industry consolidation from three to two major manufacturers in 1999. Focus group sessions were held with growers at two locations in Florida to solicit opinions on this matter, and provide guidance for design of a survey questionnaire. The focus groups indicated that availability of larger sizes of containers has decreased, and prices for most containers in year 2000 have increased by about 15 to 20 percent above 1999. A telephone survey was carried out in nine southeast US states with a representative sample of 491 wholesale nursery firms that had open-field production of woody ornamentals. Information collected regarding purchases of horticultural containers by growers included type, size, manufacturer/brand, changes in prices paid, and availability of supplies. Also, information was gathered on firm characteristics such as annual sales, production area, and number and type of plants produced. Market share for each manufacturer-brand was estimated based upon the survey data for percentage of purchases of different types and brands of containers, weighted according to estimated sales and total container purchases. Results indicated that the consolidated manufacturer *Nursery Supplies/Lerio* clearly has a dominant market position. For blow-molded containers, the current market share for *Nursery Supplies/Lerio* is 92 percent, nearly equal to the combined total in 1999 for the then separate manufacturers *Nursery Supplies* (52%) and *Lerio/IEM* (42%). The market share has remained about the same for a third major manufacturer (*ITML)* and other unspecified independent manufacturers (3-5%). Similarly for injection-molded/vacuum-formed hard cans, the current market share for *Nursery Supplies/Lerio* is 82 percent, compared to 25% for *Nursery Supplies* and 61% for *Lerio/IEM* last year. The *Nursery Supplies/Lerio* brand was purchased by 78 percent of respondents purchasing blow-molded containers, 56 percent purchasing injection-molded/vacuum-formed hard cans, and 92 percent purchasing injection-molded/vacuum-formed flower pots. For the blow-molded containers and injection-molded/vacuum-formed hard cans, the percentage of growers purchasing from *Nursery Supplies/Lerio* was about ten times greater than the next largest competitor (*ITML*). A majority of survey respondents indicated that prices paid for containers of all types increased since the previous year (1999). The increase in price averaged about 15 to 18 percent for blow-molded containers, 9 to 15 percent for hard cans, and 13 to 18 percent for flower pots. The magnitude of price increase did not significantly relate to brand. However, the increase in container prices was commensurate with increased raw material costs for plastics. Average prices for high-density polyethylene resins in year 2000 were 17 percent higher than in 1999 for blow-molding type resins, and 11 percent higher for injection-molding type resins. A majority of growers indicated that they prefer to ordinarily use blow-molded or hard can containers for open field production of woody ornamentals, however about a third of respondents did use flowerpots for this purpose. A higher number of respondents reported purchasing flower pots in 2000 than in 1999.

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Acknowledgments

This research was made possible by the financial support of Florikan, Inc., of Sarasota, Florida. Telephone surveys were conducted by the University of Florida, Bureau of Economic and Business Research, coordinated by Chris McCarty and Scott Richards. Peer review of the manuscript was provided by David Mulkey, Robert Degner, and Bill Messina.

Introduction

The nursery and greenhouse industry in the United States is the sixth largest major sector of agriculture, with wholesale farm-level sales of about $11 billion in 1997 (NASS, 1999). The southeast US is an important region for both production and marketing of ornamental plants because of the favorable climate and relatively plentiful land and water resources.

Manufactured plastic nursery containers are widely used for horticultural production because of their advantages of convenience and productivity over traditional field (in-ground) growing systems. A recent survey of nursery growers in 22 states found that container-grown plants represented two-thirds (67%) of overall production value, and in many states, including California, Florida, Alabama, and Mississippi, over 80 percent of production is in nursery containers (Brooker, Hinson, Turner, 2000). Purchase of nursery containers is a significant production expense for growers, and is often the single largest direct cost item. According to data from Florida wholesale nurseries, expenses for containers represented 5.4 percent of total operating costs, or 4.9 percent of gross sales (Hodges, Satterthwaite and Haydu, 2000).

In recent years, the market for nursery containers has become more concentrated, and is dominated by a small number of major firms. *Nursery Supplies Inc.* merged with *Lerio/IEM* in March, 2000, leaving only two major producers of the commonly used blow-molded nursery containers in large sizes, *Nursery Supplies/Lerio*, and *ITML*. Allegedly, this action has resulted in reduced competition in this segment of the horticultural container market.

Most economic theory assumes perfect competition in the marketplace. Perfect competition brings about the most efficient allocation of scarce resources, as costs of production and prices for consumers are minimized (Goodwin and Drummond, 1982). Some attributes of perfectly competitive markets include:

- Insignificance of the individual producing or consuming unit in relation to the total market, such that all participants are “price takers”.
- Homogeneity of product.
- Absence of artificial limitations on entry to or exit from the market.
- Stable and adequate supply of product.
- Widely available information about product features and prices.

In reality, however, most markets are not purely competitive. In the extreme case of monopoly (a single producing firm), the market demand curve is the same as the firm’s demand curve, so increased sales volume results in a lower sale price and lower marginal revenue. Rational monopolist firms may therefore restrict their production in order to maintain higher prices and profits per unit.

The primary objective of this project was to assess the competitiveness in the market for horticultural (nursery) containers in the southeast United States, through examination of brand purchasing patterns, changes in prices paid for containers, and availability of container supplies.

Scope of Work and Methods

Primary information on use of different types and brands of nursery containers was collected through a telephone survey of wholesale nursery firms conducted during September and October, 2000. Surveyed firms were located in the southeast US states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee. Telephone interviews were performed under subcontract by the University of Florida, *Bureau of Economic and Business Research*, using a computer-assisted telephone survey system. Interviewed firms were qualified as having open field container production of woody ornamentals, and having produced nursery plants for sale in 1999. Interview respondents were qualified as an owner, manager or other person knowledgeable about purchasing practices of the firm.

Lists of telephone numbers for wholesale growers in each state were obtained from state government agencies and industry trade associations. A total of over 10,000 wholesale nursery firms were registered in these selected states. Telephone numbers were compiled for a sample of 3,597 nursery firms, drawn roughly in proportion to the total population of firms in each state. Where possible, sampling was concentrated on larger firms in order to maximize the share of the total market covered. For several states in which information was available on production area, firms were selected which had at least 5 acres of production area. At least three attempts were made to contact each firm listed. A total of 491 firms were interviewed for the study, representing a sampling rate of about 5 percent. The number of respondents in each state are summarized in Table 1. Over half of the firms were located in the state of Florida, consistent with its share of the overall population

Table 1. Population and survey sample of ornamental plant nurseries in the southeast United States

State	Population Wholesale Nurseries	Number Firms Available in Sample List	Number Respondents	Percent Respondents
Alabama	450	159	34	7%
Arkansas	120	22	3	1%
Florida	6,657	2,177	300	61%
Georgia	1,717	700	76	15%
Louisiana	500	138	12	2%
Mississippi	125	42	8	2%
North Carolina	264	216	37	8%
South Carolina	184	49	10	2%
Tennessee	na	94	11	2%
All	10,017	3,597	491	100%

The telephone survey interview protocol was developed based upon input from nursery industry representatives and information provided by *Florikan*, Inc. and its legal counsel. In order to obtain general opinions about the market for nursery containers, and to pre-test the survey questionnaire, focus groups of nursery managers were conducted with nursery managers in Apopka and Seffner, FL, in August, 2000. The questionnaire was also reviewed by the *University of Florida Institutional Review Board* to assure protection of the rights of survey respondents. The text of the survey protocol is provided in the Appendix.

Respondent firms were characterized in terms of the number and types of ornamental plants produced, production area, and business volume. Survey questions concerning purchase of nursery containers addressed specific types (blow-molded, injection molded, vacuum-formed), sizes (e.g. 1, 3, 5, 7 gallon), and manufacturer or brand name (*Nursery Supplies, Lerio, IEM, ITML*, other). Respondents were asked about changes in prices for different types and brands of containers, and about difficulties in obtaining needed supplies of containers.

Estimates of the value of container purchases and market share for the various container manufacturer-brands in years 1999 and 2000 were developed based upon survey data for the percentage of purchases of different types and brands of containers, weighted according to estimated sales and total container purchases, as follows:

$$V_{ij} = \sum_{ijr} B_{jir} \times T_{jr} \times K \times S_r$$

where V_{ij} is the total value of purchases of container type j and brand i,
B_{jir} is the percentage of total purchases of brand i for container type j by respondent r,
T_{jr} is the percentage of total container purchases of type j by respondent r,
K is a constant (0.0489) representing the ratio of container purchases to annual sales, and
S_r is the estimated annual sales of firm r.

Company annual sales were estimated at the midpoint of the sales range indicated (see Table 2), and total value of container purchases were estimated at 4.89 percent of annual sales, based on cost data for Florida nurseries (Hodges, Satterthwaite and Haydu, 2000).

The margin of error for estimation of the proportion of firms for a binary (yes-no) variable was determined using the following formula: $d = [t^2 \times p \times q / n]^{0.5}$, where d is the relative margin of error (percent), t is the tail area of Student's t distribution, p and q are the respective proportions of the binary variable, and n is the sample number (Cochran, 1953). For t=2.69, representing an alpha value of 0.05, this expression gives a 95 percent confidence interval for the estimated proportion of firms that answered "yes" or "no". For the sample sizes in this survey, a margin of error of plus-or-minus 3 to 6 percent was obtained, and is reported for each binary variable.

Findings of Focus Group Sessions

Focus groups were convened with selected nursery managers on August 8-9, 2000 at Apopka and Seffner, Florida. At the Apopka session, eight nursery managers were present, including four greenhouse growers and four woody ornamentals growers, while at Seffner, there were four growers of woody ornamentals, plus an agricultural extension agent and a grower association executive. Participants stated that *Nursery Supplies/Lerio* is now the only source for large (15+gal) growing containers, and that large pots are difficult to get, with a waiting period up to 6 months. Availability of certain types of specialty containers, such as 7+ gal. and plastic cell trays is also very limited, and delivery times may be as long as 6-8 weeks. The market for blow-molded one gallon containers is not as critical, but is less competitive now than previously. There is a belief that the supply of pots is being artificially constrained by the manufacturer(s). Most firms now recycle pots to the degree possible, and purchase reused containers from dealers who specialize in this, however, pots are now made thinner and are less durable. In both focus groups, growers agreed that costs for nursery pots have increased 15 to 20 percent this year compared to last year. However, it is unclear to what degree this may be attributed to reduced competition, as it was noted that prices for nursery pots have historically fluctuated widely, due to cyclical variations in raw material costs for plastic resins which are tied to petroleum commodity prices. There was a general belief that other competitors will enter the container market if prices rise high enough. For example, some other plastic molding manufacturers may be interested in the nursery pot business.

There was some talk of a grower cooperative to manufacture pots. It was learned that Nursery Supplies is now building a large new plant in Kisimmee, and closing their operation in Mobile, AL. Also, the "Kool-Ring" system was mentioned as a promising alternative to large (45+ gal) containers, consisting of steel wire cages lined with porous fabric, and open on the bottom to allow plants to root into the ground.

Survey Results

Characteristics of Surveyed Firms

Sales. Annual sales in 1999 for respondent firms are summarized in Table 2. Of the 491 firms interviewed, roughly one-third (36%) of firms had sales of less than $250,000, another 30 percent of firms had sales of $250 to $999 thousand, and 21 percent had sales of $1 million or greater, including 3 percent greater than $5 million. Some 13 percent of respondents didn't know the firm's annual sales or refused to answer this question. Total estimated sales of survey respondents amounted to $402.9 million and sales per firm averaged $945,716.

Table 2. Number of firms by annual sales class, surveyed ornamental plant nurseries in the southeast USA, 1999

Annual Sales Class	Number Respondents	Percent Respondents
less than $250,000	176	36%
$250,000 - $499,000	75	15%
$500,000 - $999,000	74	15%
$1 million - $2.4 million	67	14%
$2.5 million - $5 million	20	4%
greater than $5 million	14	3%
Don't know, Refused, Not Available	65	13%
All	491	100%

Production Area. Open field production area for respondent firms averaged 32.5 acres, with half (50%) of firms having less than 10 acres, another third of firms having 10 to 49 acres, and 14 percent having 50 or more acres, as summarized in Table 3.

Table 3. Open field production area, surveyed ornamental plant nurseries in the southeast USA

Production Area (acres)	Number Respondents	Percent Respondents
Less than 10	247	50%
10 to 24	103	21%
25 to 49	61	12%
50 or more	71	14%
Don't know, Refused, Not Available	9	2%
Average acreage	32.5	

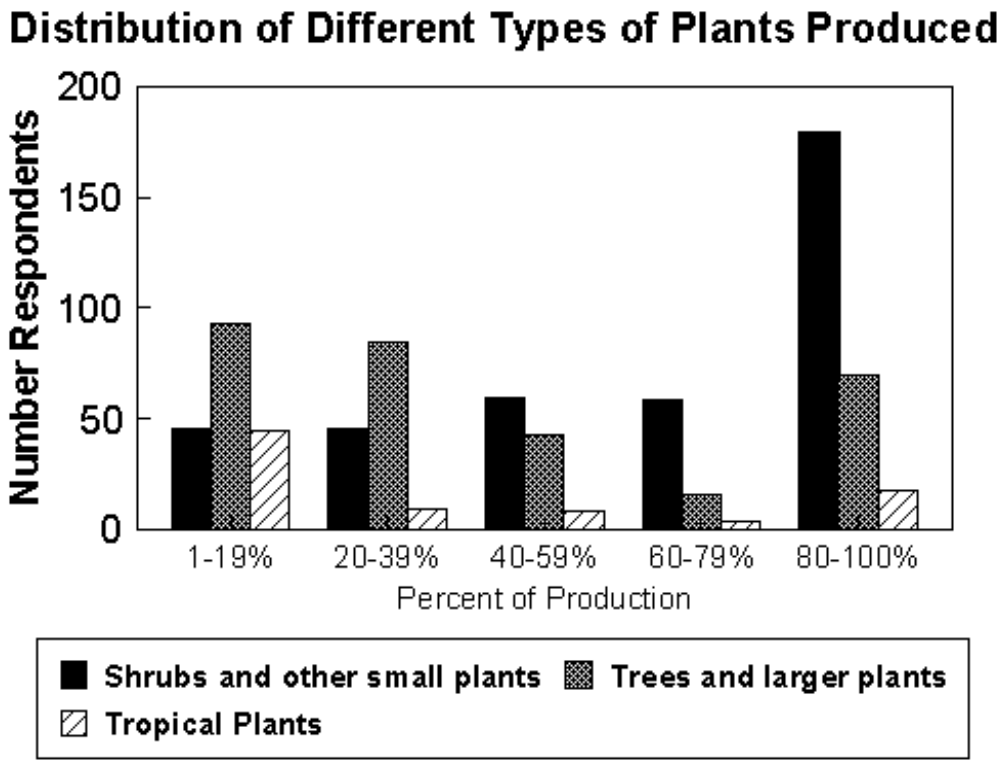
Plant Types. The number and percentage of survey respondents who reported producing different types of plants is given in Table 4, and the distribution of each plant type as a percentage of their total production is represented in Figure 1. A majority of survey respondents reported growing shrubs and other small woody plants (83%) or trees and larger woody plants (66%), while a smaller number of respondents (18%) grew tropical foliage plants. Shrubs and small woody plants represented most of production (80 to 100 percent) for 36 percent (176 of 491) of respondents (Figure 1). Surveyed firms sold or grew an average of 103 different species or varieties of plants, with one-third of firms having 24 or fewer plant species, and 41 percent of firms having 50 or more species.

Table 4. Types of plants grown, surveyed ornamental plant nurseries in the southeast USA

Type of Plant Product	Number (percent*) of Respondents
Shrubs and other small woody plants	409 (83%)
Trees and larger woody plants	326 (66%)
Tropical Plants	90 (18%)

* Numbers represent firms with at least 1% of product type, and percentages represent proportion of total 491 respondents.

Figure 1



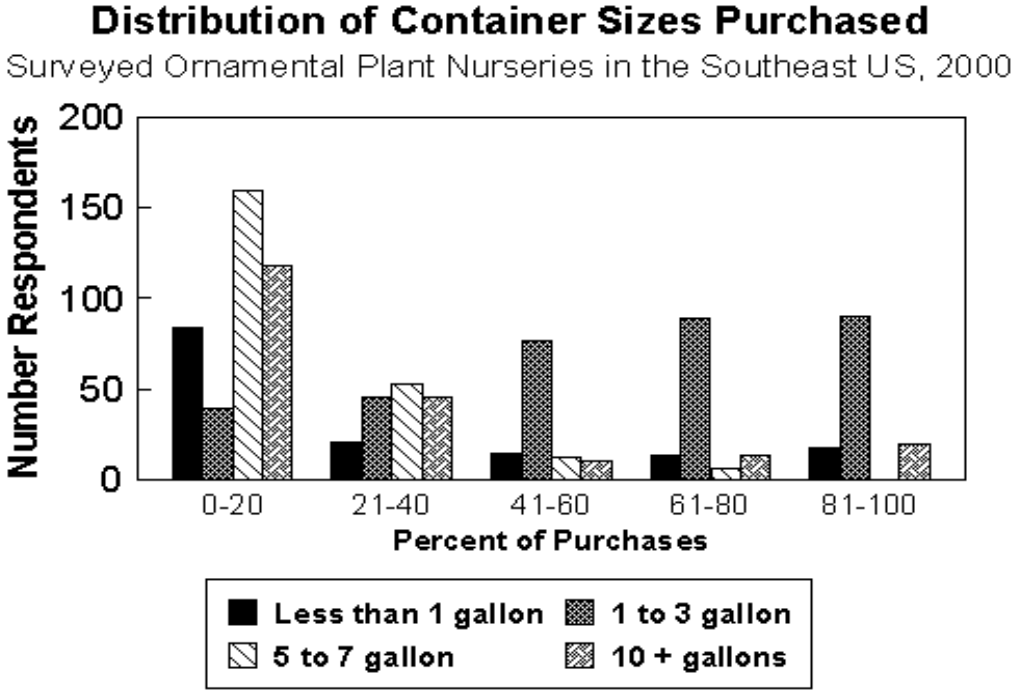
Purchasing Patterns for Nursery Containers

Container Size. Different sizes of nursery containers purchased by survey respondents are summarized in Table 5. Over three-quarters (79%) of respondents reported purchasing 1 to 3 gallon containers, about half of respondents purchased 5 to 7 gallon containers and 10 gallon or larger containers (55%, 49%, respectively), and about one-third (34%) of respondents purchased containers less than 1 gallon in size. A small number of respondents purchased other unspecified sizes, and a few purchased none, presumably using containers from inventory or recycling pots. The mean percentage of total container purchases reported by respondents for each container size ranged from 19 percent for the 5-7 gallon size to 63 percent for the 1-3 gallon size (Table 5). The distribution of purchases represented by each size of container is summarized by quintile ranges in Figure 2.

Table 5. Sizes of nursery containers purchased, surveyed ornamental plant nurseries in the southeast USA, year 2000.

Container Size	Number Respondents Purchasing	Percent Respondents Purchasing	Number Respondents Reporting Percentage of Purchases	Mean Percentage of Purchases
Less than 1 gallon	167	34%	151	31.7
1 to 3 gallon	387	79%	341	62.5
5 to 7 gallon	268	55%	230	19.0
10 gallons or larger	241	49%	207	28.9
Other size(s)	28	6%		
None	10	2%		
Don't know, Refused	6	1%		

Figure 2



Container Type. Information on the types of containers purchased by survey respondents in year 2000 is summarized in Tables 6 and 7 and Figure 3. A majority of respondents (61%) purchased blow-molded containers, 27 percent purchased injection-molded or vacuum-formed hard cans, 15 percent purchased injection-molded or vacuum-formed flower or greenhouse pots, and 11 percent purchased other unspecified types of containers (Table 6). A smaller number of respondents reported the percentage of their total purchases for the various types of containers. The mean percentage of total purchases reported was 82 percent for blow-molded containers, 60 percent for injection-molded or vacuum-formed hard cans, 50 percent for injection-molded or vacuum-formed flower or greenhouse pots, and 47 percent for other types of containers. Among the 270 respondents that indicated the percentage of total purchases for blow-molded containers, 165 (61%) indicated that this type of container represented between 81 and 100 percent of their total purchases (Figure 3). For a significant minority of firms (36%), injection-molded or vacuum-formed hard cans represented 81 to 100 percent of their purchases.

Table 6. Types of nursery containers purchased, surveyed ornamental plant nurseries in the southeast USA, year 2000.

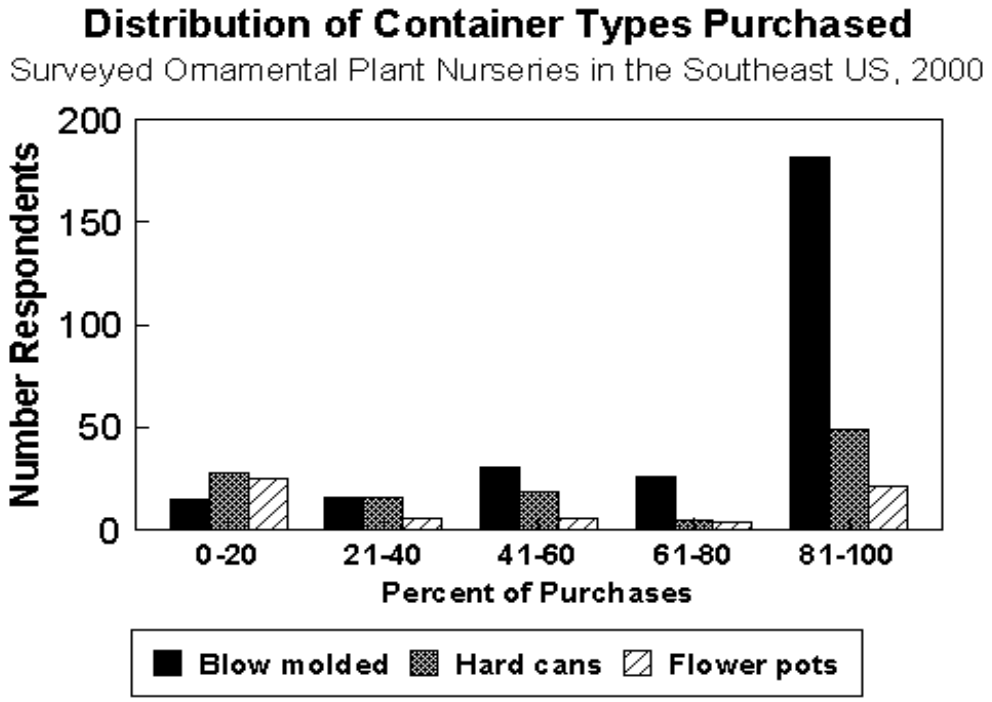
Type Container	Number Respondents Purchasing	Percent Respondents	Number Respondents Reporting Percentage of Purchases	Mean Percentage of Purchases
Blow-molded containers	300	61%	270	82.3
Hard cans (injection-molded or vacuum-formed)	135	27%	117	60.2
Flowerpots (injection-molded or vacuum-formed)	72	15%	62	50.4
Other	52	11%	39	47.2
None	16	3%		
Don't know	48	10%		

For those respondents that reported complete information on sales, and percentage of purchases by type of container, the total value of container purchases was estimated at $16.6 million, including $11.4 million or 68 percent for blow-molded containers, $3.6 million (22%) for hard cans, $1.4 million (8%) for flower pots, and $245,000 (1%) for other types of containers (Table 7). The mean value of purchases per firm ranged from $47,220 for blow-molded containers, to $7,209 for other types of containers.

Table 7. Estimated value of container purchases, by type, surveyed ornamental plant nurseries in the southeast USA, year 2000.

Type Container	Number Respondents	Mean Per Firm ($)	Standard Error ($)	Total ($)	Percent of Total
Blow Mold Containers	241	47,220	4,529	11,380,128	68%
Hard Cans (injection-molded or vacuum formed)	108	33,373	4,587	3,604,235	22%
Flower Pots (injection-molded or vacuum formed)	58	24,211	5,079	1,404,224	8%
Other Containers	34	7,209	1,842	245,111	1%
Total All Types				16,633,698	

Figure 3


Distribution of Container Types Purchased
Surveyed Ornamental Plant Nurseries in the Southeast US, 2000
Number Respondents
200
150
100
50
0
0-20
21-40
41-60
61-80
81-100
Percent of Purchases
Blow molded
Hard cans
Flower pots

Container Brand Purchasing

Survey results on the different brands of nursery containers purchased currently (year 2000) and last year (1999) are summarized in Table 8 and Figures 4 through 7.

For blow-molded containers, 78 percent of respondents reported purchasing in year 2000 from *Nursery Supplies/Lerio*, 8 percent from *ITML*, and 19 percent from other manufacturers. By contrast, in the previous year, 34 percent of respondents purchased from *Nursery Supplies*, 55 percent from *Lerio/IEM*, 6 percent from *ITML*, and 13 percent from other sources. Thus, the percentage of growers purchasing blow-molded containers from *Nursery Supplies/Lerio* in 2000 (78%) was not quite as high as the combined total of those purchasing from *Nursery Supplies* plus *Lerio/IEM* previously (34% plus 55%) (Table 8). The *ITML* brand and other brands were purchased by a marginally higher percentage of growers in 2000 than in the previous year (8% vs. 6%, 19% vs. 13%, respectively). For respondents that reported the percentage of total purchases for various brands of blow-molded containers, the mean percentage of purchases in year 2000 was 84 percent from *Nursery Supplies/Lerio*, 54 percent from ITML, and 54 percent from other sources. In 1999, the comparable mean percentage of blow-mold container purchases was 79 percent from *Nursery Supplies*, 76 percent from *Lerio/IEM*, 41 percent from *ITML*, and 54 percent from other sources. Nearly two-thirds (64%) of respondents purchasing from *Nursery Supplies/Lerio* indicated that this brand represented 81 percent or more of their current purchases of blow-molded containers (Figure 4). This represented roughly the same number of respondents that previously purchased 81 percent or more of their containers from either *Nursery Supplies* or *Lerio/IEM* (Figure 5).

For injection-molded or vacuum-formed hard cans, there was a generally similar pattern of results, although the number of growers purchasing this type of container was much lower. The percentage of growers purchasing from *Nursery Supplies/Lerio* in year 2000 (56%) was slightly lower than the combined total purchasing from *Nursery Supplies* and *Lerio/IEM* in 1999 (22% plus 47%) (Table 8). Again, the percentage of growers purchasing of the *ITML* brand and other brands in 2000 was marginally higher than the previous year (5% vs. 4%, 23% vs. 16%, respectively). Purchases of injection-molded or vacuum-formed hard cans from *Nursery Supplies/Lerio* represented 81 percent or more of total purchases for 52 growers in 2000 (Figure 6), compared to 18 from *Nursery Supplies* and 38 from *Lerio/IEM* in 1999 (Figure 7).

For injection-molded or vacuum-formed flower or greenhouse pots, 92 to 85 percent of respondents that purchased this type of container in 2000 purchased from each of the manufacturers, while a lower number and percentage of respondents (26% to 44%) purchased any manufacturer brand in 1999 (Table 8). However, only a very small number of respondents reported the percentage of their total purchases represented by each brand of this type of container.

Table 8. Brands of nursery containers purchased in 1999 and 2000, surveyed ornamental plant nurseries in the southeast USA.

Type-Period-Brand	Number and Percent* of Respondents Purchasing		Number Respondents Reporting Percentage of Purchases	Mean Percentage of Purchases
Blow-Molded Containers Purchased 2000				
Nursery Supplies/Lerio	234	78%	215	84.0
ITML	23	8%	16	53.8
Other	57	19%	46	53.4
Don't Know, Refused	31	11%		
Blow-Molded Containers Purchased 1999				
Nursery Supplies	103	34%	90	79.3
Lerio/IEM	165	55%	143	75.7
ITML	17	6%	10	41.4
Other	39	13%	25	45.5
Don't Know, Refused	46	16%		
Hard Cans (injection-molded or vacuum formed) Purchased 2000				
Nursery Supplies/Lerio	75	56%	71	84.9
ITML	7	5%	6	40.0
Other	31	23%	28	49.1
Don't Know, Refused	38	28%		
Hard Cans (injection-molded or vacuum formed) Purchased 1999				
Nursery Supplies	30	22%	26	80.1
Lerio/IEM	64	47%	60	81.3
ITML	5	4%	3	70.0
Other	22	16%	18	58.1
Don't Know, Refused	37	27%		
Flower Pots (injection-molded or vacuum formed) Purchased 2000				
Nursery Supplies/Lerio	66	92%	6	68.3
ITML	61	85%	0	na
Other	65	90%	1	20.0
Don't Know, Refused	64	89%		
Flower Pots (injection-molded or vacuum formed) Purchased 1999				
Nursery Supplies	21	29%	9	88.9
Lerio/IEM	31	43%	20	56.6
ITML	19	26%	7	68.3
Other	32	44%	19	61.3
Don't Know, Refused	30	42%		

*Percent of respondents represents share of respondents purchasing that type of container in 2000 (see Table 6).

Figure 4

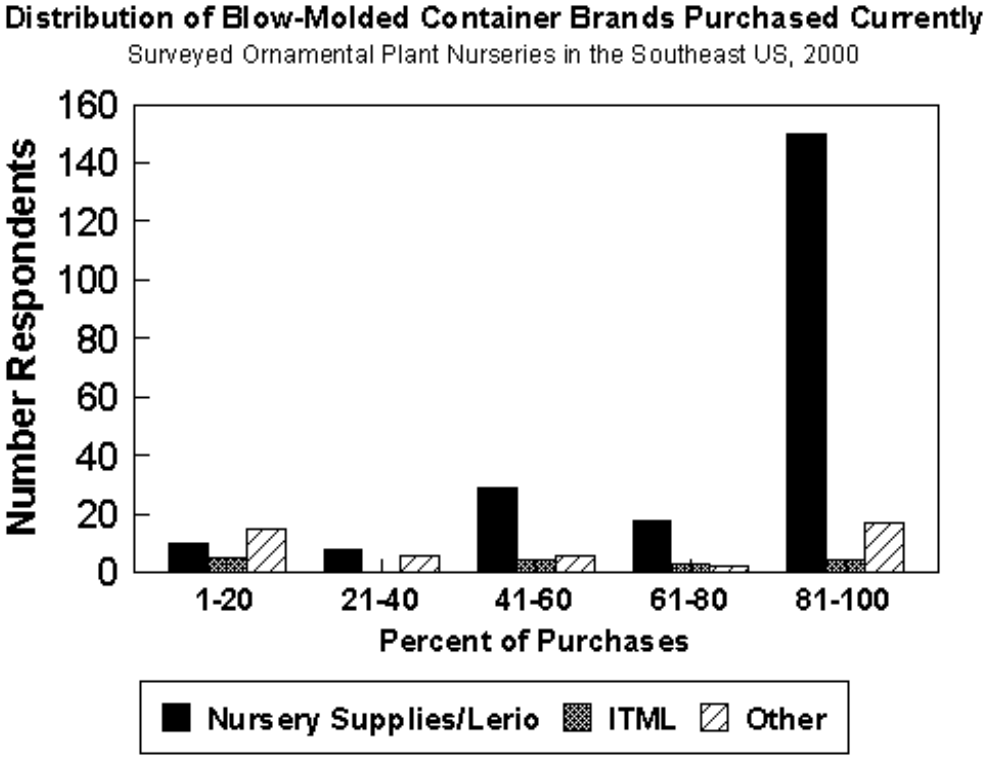


Figure 5

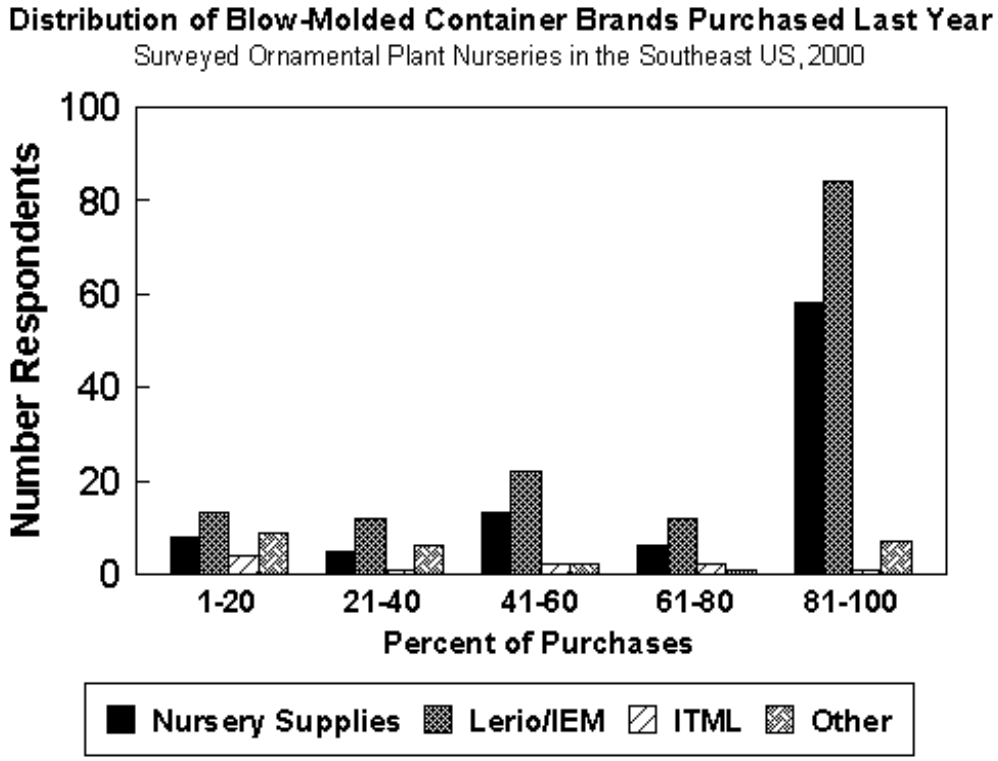


Figure 6

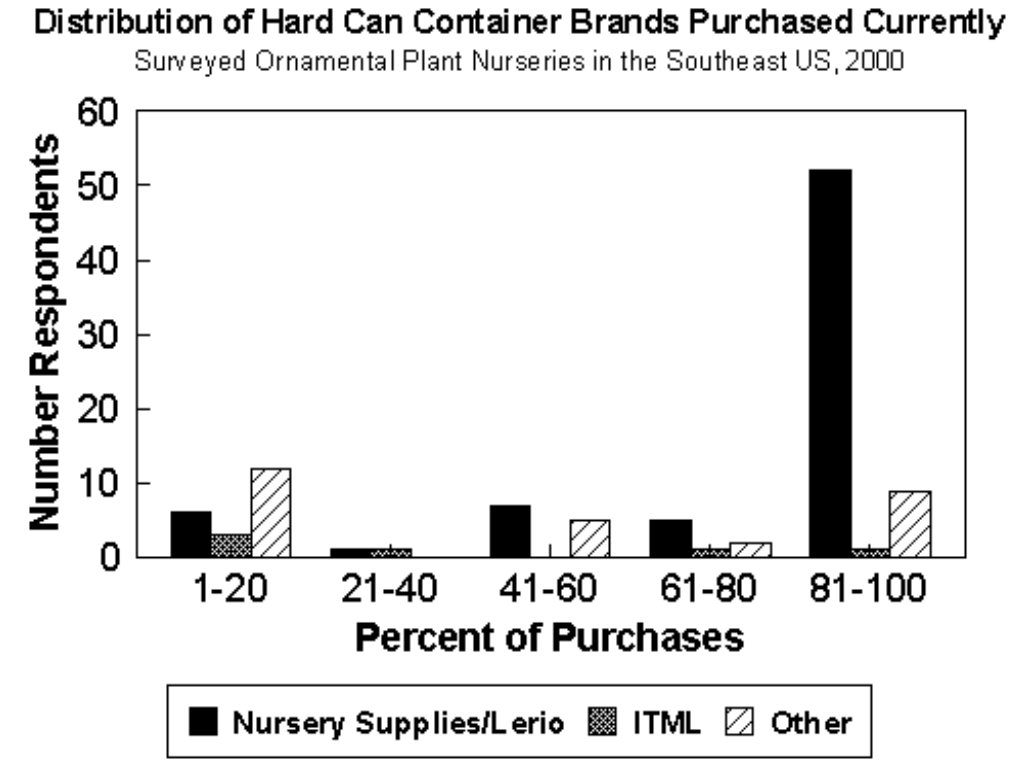
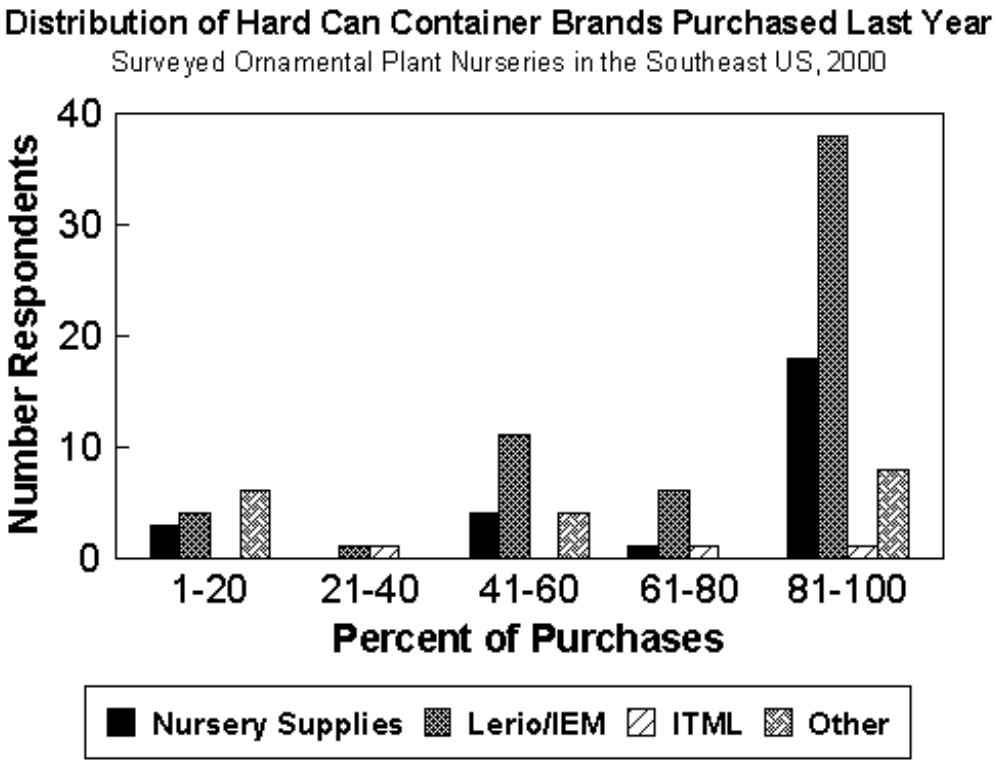


Figure 7



Container Brand Market Share

The estimated value of purchases of various types and brands of nursery containers by survey respondents, and their relative market share, are summarized in Table 9. Estimates of market share for the various container manufacturer-brands represent the percentage of purchases of each type, weighted according to estimated sales and total container purchases for each respondent. Purchases of blow-molded containers by survey respondent in year 2000 were estimated at $9.8 million, including $9.1 million or 92 percent from *Nursery Supplies/Lerio*, $317,000 (3%) from *ITML*, and $465,000 (5%) from other brands (Table 9). In year 1999, purchases of blow-molded containers by survey respondents totaled $9.6 million, with $5.0 million or 52 percent from *Nursery Supplies*, $4.0 million (42%) from *Lerio/IEM,* $260,000 (3%) from *ITML*, and $307,000 (3%) from other brands. So, the market share of *Nursery Supplies/Lerio* in 2000 was nearly equal to the combined market share of *Nursery Supplies and Lerio/IEM* the previous year.

For hard can containers, a similar pattern of results was found. The total value of purchases of this type of container by survey respondents was estimated at $2.2 million in year 2000. The market share of *Nursery Supplies/Lerio* in 2000 (82%), was nearly equal to the combined market share of *Nursery Supplies* and *Lerio/IEM* the previous year (24% and 61%, respectively) (Table 9).

Table 9. Value of blow-molded and hard can containers purchased and brand market share, 1999 and 2000, surveyed ornamental plant nurseries in the southeast USA.

Type-Brand-Period	Value of Purchases				Market Share (Percent of Total Purchases, best estimate, and 95% confidence interval)
	Number Respondents	Mean Per Firm ($)	Standard Error ($)	Total ($)	
Blow Molded Containers Purchased 2000					
Nursery Supplies/Lerio	185	48,964	5,536	9,058,391	92% (97%--85%)
ITML	14	22,644	6,751	317,009	3% (7%--1%)
Other brand	39	11,932	3,028	465,344	5% (9%--2%)
Total All Brands				9,840,745	
Blow Molded Containers Purchased 1999					
Nursery Supplies	77	65,269	10,476	5,025,712	52% (69%--36%)
Lerio/IEM	122	32,856	5,034	4,008,474	42% (59%--27%)
ITML	9	28,895	10,034	260,056	3% (7%--1%)
Other brand	22	13,953	4,665	306,973	3% (8%--1%)
Total All Brands				9,601,216	
Hard Can (injection-molded or vacuum formed) Containers Purchased 2000					
Nursery Supplies/Lerio	61	30,309	4,665	1,848,853	82% (96%--64%)
ITML	5	12,737	8,744	63,686	3% (10%--0%)
Other brand	26	12,769	4,509	332,000	15% (31%--4%)
Total All Brands				2,244,540	
Hard Can (injection-molded or vacuum formed) Containers Purchased 1999					
Nursery Supplies	22	27,062	5,293	595,373	24% (44%--12%)
Lerio/IEM	52	29,093	5,103	1,512,834	61% (82%--39%)
ITML	3	21,178	12,370	63,533	3% (9%--0%)
Other brand	17	18,399	6,631	312,777	13% (29%--3%)
Total All Brands				2,484,517	

The uncertainty in these market share estimates due to possible errors in survey sampling was reflected in 95 percent confidence intervals calculated using the mean value of purchases per firm, plus or minus two times the standard error, multiplied by the number of respondents. The 95 percent confidence interval represents the range of values in which we can be 95 percent confident that the true value lies. So, for example, the value of blow-molded containers purchased in year 2000 from *Nursery Supplies/Lerio* ranged from a lower bound of $7.0 million [(48,964 - (2 x 5,536)) x 185] to an upper bound of $11.1 million [(48,964 + (2 x 5,536)) x 185]. The upper and lower bounds of the estimated container purchases within the confidence interval for each brand were then used to determine the range in market share estimates indicated in Table 9. The market share of blow-molded containers for *Nursery Supplies/Lerio* in year 2000 ranged from 85 to 97 percent. The market share of blow-molded containers for *Nursery Supplies* in 1999 ranged from 36 to 69 percent, and the market share for *Lerio/IEM* ranged from 27 to 59 percent.

Container Price Changes

One of the most important indications of competitiveness in an industry is prices and price changes over time. In particular, rapid increases in price could potentially indicate an uncompetitive market, in the absence of other factors. Survey results regarding price changes experienced by growers for different types and brands of containers are summarized in Tables 10 and 11 and Figures 8-10. Growers were asked *"Has your business experienced higher prices for containers this year compared to last year?*" For blow-molded containers and injection-molded/ vacuum-formed hard cans, two-thirds or more of respondents answered in the affirmative, indicating that prices in year 2000 were higher than in 1999 (Table 10). This finding was strongest for blow-molded containers, with 79 percent of respondents indicating that this type had increased in price. For injection-molded/vacuum-formed greenhouse pots, a lower percentage (49%) of respondents reported that prices had increased. The margin of error (95 percent confidence interval) for these results ranged from 3.5 to 10.7 percent, depending upon the number of respondents reporting for each type of container. In other words, we can be 95 percent confident that the true proportion of the entire population of nursery growers that experienced price increases were within the range of the percentage indicated plus or minus the margin of error.

Table 10. Respondents that experienced higher prices for containers in year 2000 compared to 1999, surveyed ornamental plant nurseries in the southeast USA (Number and Percent of Respondents).

Response	Blow-Molded Containers		Injection-molded or vacuum-formed hard cans		Injection-molded or vacuum-formed greenhouse/flower pots	
Yes	236	79%	89	66%	54	49%
No	51	17%	33	24%	37	34%
Don't know, Refused	13	4%	13	9%	19	17%
Margin of Error (95% confidence)		3.5%		6.0%		10.7%

For blow-molded containers, 79 percent of respondents that purchased the *Nursery Supplies/Lerio* brand indicated that prices have increased, compared to 100 percent of respondents for *ITML*, and 74 percent for other brands (Table 11). For those respondents indicating the magnitude of increased prices for blow-molded containers, the average percentage increase was 16.6 percent for the *Nursery Supplies/Lerio* brand, 14.5 percent for ITML, and 15.6 percent for other unspecified

brands (Table 11). The distribution of respondents reporting price increases for each brand of blow molded container is given in Figure 8, for ranges of 1 to 10 percent, 11 to 20 percent, 21 to 30 percent, and 31 percent or more.

For injection-molded or vacuum-formed hard cans, 88 percent of respondents indicated that prices have increased for *Nursery Supplies/Lerio*, 100 percent for *ITML* and 68 percent for other brands (Table 11). For those respondents indicating the magnitude of price increases for hard cans, the average percentage increase was 13.7 percent for *Nursery Supplies/Lerio*, 14.7 percent for *ITML*, and 8.5 percent for other brands. The distribution of respondents reporting price increases for each brand of hard can container is given in Figure 9.

For injection-molded/vacuum-formed greenhouse or flower pots, 33 percent of respondents indicated that prices have increased for *Nursery Supplies/Lerio* brand, compared to 20 percent for *ITML* and 23 percent for other brands (Table 11). For those respondents indicating the magnitude of price increases, the average price increase was 13.3 percent for the *Nursery Supplies/Lerio* brand, 12.3 percent for *ITML*, and 18.2 percent for other brands. The distribution of respondents reporting price increases for each brand of greenhouse/flower pots is given in Figure 10.

Table 11. Brands of containers that have increased in price between 1999 and 2000, and magnitude of price increase, surveyed ornamental plant nurseries in the southeast USA

Type-Manufacturer/Brand	Number and Percent* of Respondents		Number Respondents Reporting Magnitude of Increase	Mean Price Increase (percent)	Standard Error of Price Increase (percent)
Blow-Molded Containers					
Nursery Supplies/Lerio	184	79%	132	16.6	1.1
ITML	23	100%	17	14.5	3.2
Other	42	74%	5	15.6	2.1
Hard Cans (injection-molded or vacuum formed)					
Nursery Supplies/Lerio	66	88%	49	13.7	1.0
ITML	7	100%	9	14.7	2.2
Other	21	68%	2	8.5	1.1
Greenhouse/Flower Pots (injection-molded or vacuum formed)					
Nursery Supplies/Lerio	22	33%	24	13.3	1.5
ITML	12	20%	11	12.3	1.1
Other	15	23%	16	18.2	4.0

*Percent of respondents represents share of respondents purchasing that type and brand of container in 2000 (see Table 8).

Figure 8

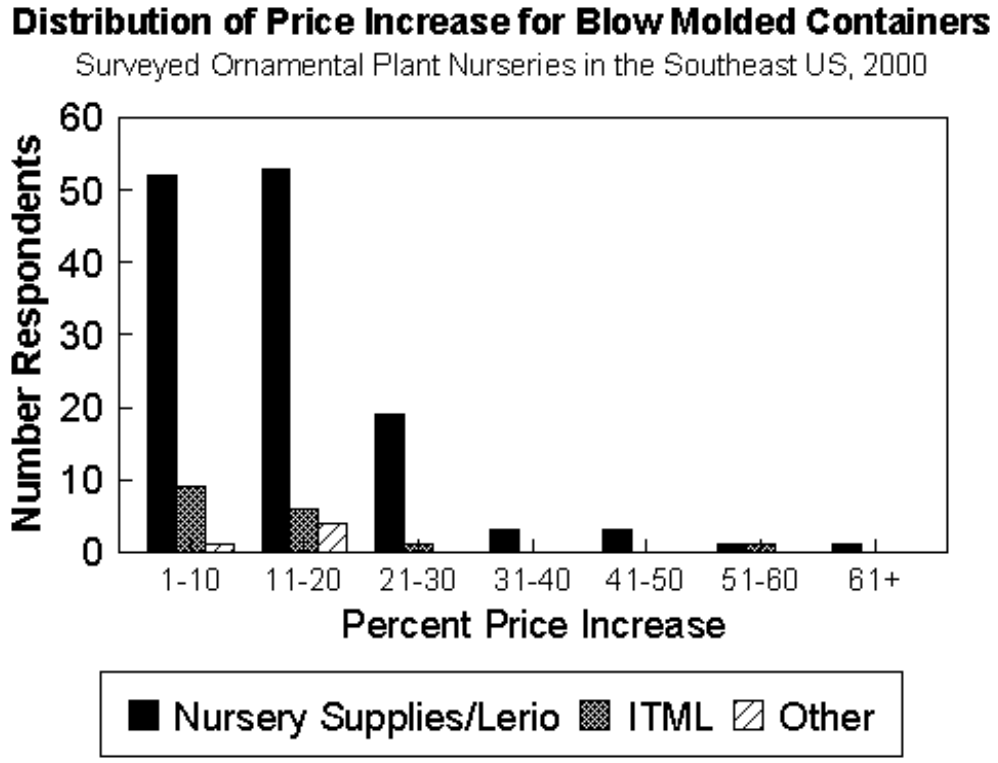


Figure 9

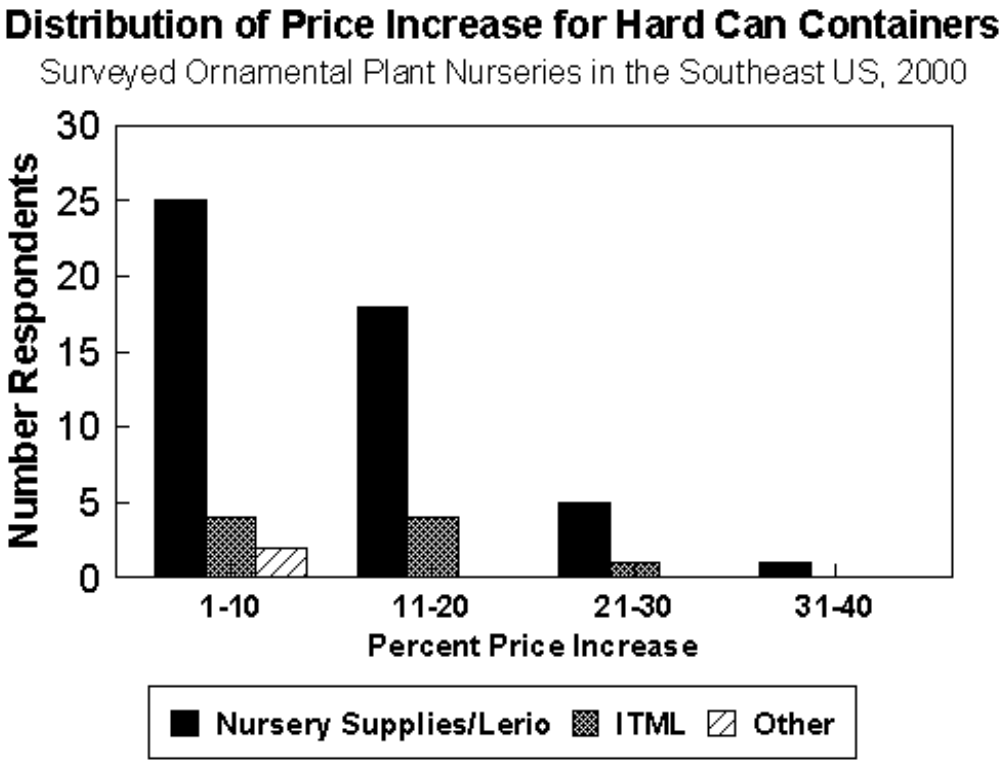
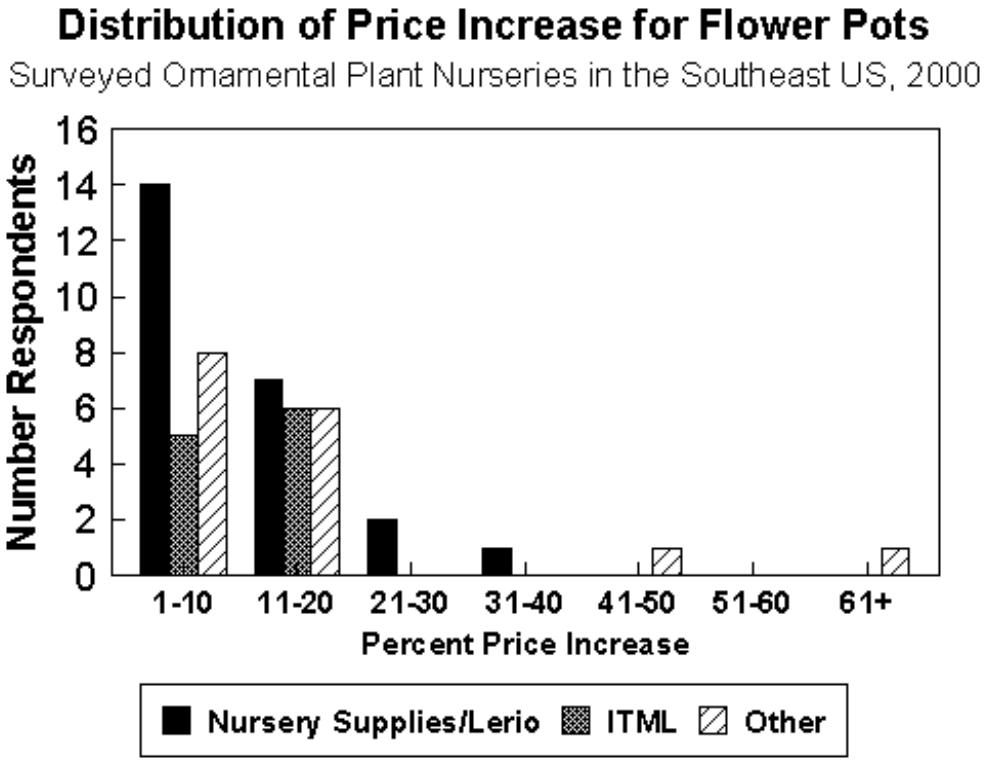


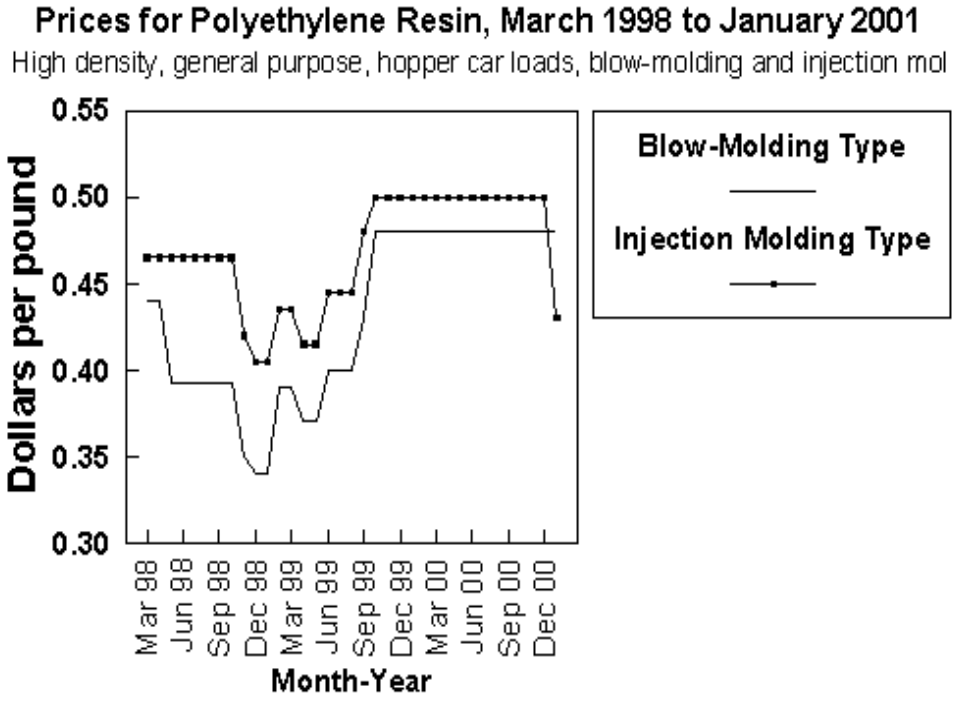
Figure 10


Distribution of Price Increase for Flower Pots
Surveyed Ornamental Plant Nurseries in the Southeast US, 2000
Number Respondents
16
14
12
10
8
6
4
2
0
1-10
11-20
21-30
31-40
41-50
51-60
61+
Percent Price Increase
Nursery Supplies/Lerio
ITML
Other

Raw Material Costs for Container Manufacturing

An important consideration in assessing the competitiveness of a market is the cost of production. In competitive markets, it is expected that changes in cost of production will be passed on to consumers as proportionate increases in the price of finished products. To examine the raw material cost for manufacturing horticultural containers, data were obtained on prices for high density polyethylene resins, including blow-molding and injection-molding types, from 1998 through 2000 (*Chemical Market Reporter*), and these data are plotted in Figure 11. Prices for these plastic resins decreased during the latter part of 1998, then increased during 1999, and stabilized during the year 2000. The price for blow-molding type resins increased from an average of $0.411 per pound in 1999 to $0.480 in 2000, representing a 16.8 percent increase, while the price for injection-molding resins increased from $0.452 to $0.500, a 10.7 percent increase. In comparison of material prices before and after the March 2000 merger of *Nursery Supplies* and *Lerio/IEM*, prices for blow-molding resins increased from $0.409 to $0.480 per pound (17.4%), and injection-molding resins increased from $0.457 to $0.494 per pound (8.1%). The magnitude of these raw material price increases are similar to the magnitude of price increases for nursery containers. It should be noted that these prices are for virgin or food grade plastic resins. Horticultural container manufacturers often use reprocessed plastics, which may be somewhat less expensive, however, the price trends for virgin plastics are probably representative of recycled plastics as well.

Figure 11



Source: Chemical Market Reporter (first week of each month)
Note: prices represent average of high and low values reported

Availability of Container Supplies

Another indicator of industry competitiveness is the availability of a product. Lack of availability of a product could potentially indicate that the market is less than perfectly competitive. Responses to the question "*Has your business experienced difficulty in obtaining the types and quantities of containers you require this year?"*, are summarized in Table 12. For blow-molded containers, 43 percent (+/- 4.7%) of survey respondents indicated "yes" that they have had difficulty in obtaining the containers needed. For injection-molded or vacuum-formed hard cans, a similar percentage (42% +/- 6.8%) said that they had difficulty in obtaining container supplies. For injection-molded or vacuum-formed greenhouse of flower pots, a substantially lower percentage (21% +/- 6.3%) of respondents had this difficulty.

Table 12. Respondents experiencing difficulty in obtaining the types and quantities of containers required, surveyed ornamental plant nurseries in the southeast USA
(Number and Percent of Respondents)

Response	Blow-Molded Containers		Injection-molded or Vacuum-formed hard cans		Injection-molded or Vacuum-formed greenhouse pots	
Yes	127	43%	58	42%	23	21%
No	166	56%	75	55%	77	71%
Don't know, Refused	5	2%	4	3%	9	8%
Margin of Error (95% confidence)		4.7%		6.8%		6.3%

Preferences for Use and Substitution of Different Types of Containers

A final indicator of competitiveness in the industry concerns the adoption of substitute products. It has been suggested that many growers are now using injection-molded or vacuum-molded "flower" or "greenhouse" pots for open field production, because of limited availability or because prices for blow-molded containers have risen too high. Although flower or greenhouse pots are not designed for extended use in outdoor growing situations, they apparently can be used for this application with some sacrifice in utility. To address this issue, survey respondents were asked two questions:

- *In open-field production, if a blow-molded container or an injection-molded or vacuum-molded hard can is available and adequate for a particular plant, do you ordinarily use that type of container?,* and
- *In open-field production, do you ordinarily use injection-molded or vacuum-molded "flower" or "greenhouse" pots?*

Responses to these two questions are summarized in Table 13. For the first question, 73 percent (+/-3.1%) of respondents answered in the affirmative. For the second question, 37 percent answered "yes" and 54 percent answered "no" (+/- 3.7%). In other words, nearly three-quarters of nursery growers would prefer to use blow-molded containers or injection-molded/vacuum-formed hard cans, however, about one third did use flower or greenhouse pots.

Table 13. Preferences for use of different container types for open field production, surveyed ornamental plant nurseries in the southeast USA

Response	Ordinarily use blow-molded containers or injection-molded/vacuum-formed hard cans for open field production		Ordinarily use injection-molded or vacuum-molded "flower" or "greenhouse" pots for open field production	
	Number Respondents	Percent of Respondents	Number Respondents	Percent of Respondents
Yes	313	73%	157	37%
No	85	20%	234	54%
Don't know, Refused	32	7%	39	9%
Margin of Error (95% confidence)		3.1%		3.7%

Conclusions

A representative survey of wholesale nursery growers in 9 states of the southeast US regarding their purchases of horticultural containers showed that the consolidated manufacturer *Nursery Supplies/Lerio* currently has a dominant market position, with 78 percent of growers purchasing some of their blow-molded containers, 56 percent purchasing their injection-molded/vacuum-formed hard cans, and 92 percent purchasing their injection-molded/vacuum-formed flower pots. Taking into account the size of firms and the percentage of their total purchases reported for each type and brand of container, the market share for *Nursery Supplies/Lerio* was estimated at 92 percent for blow-molded containers and 82 percent for hard cans. The market share of blow-molded and hard can containers for *Nursery Supplies/Lerio* in year 2000 was nearly equal to that for the previously separate manufacturers *Nursery Supplies* and *Lerio/IEM* in 1999. The market share for a third major manufacturer, *ITML*, and the other independent manufacturers, has remained about the same. These results suggest that the nursery grower customers have rather strong brand loyalties, and that the markets for *Nursery Supplies* and *Lerio* were largely independent and complementary. A majority of respondents indicated that prices paid for blow-molded and hard can containers increased by 10 to 20 percent between 1999 and 2000. However, this change in prices reflects a commensurate increase in raw material costs for plastic resins used in container manufacturing. About 43 percent of growers surveyed indicated that they had experienced difficulty in obtaining needed supplies of both blow-molded and hard can containers. About three-quarters of respondents indicated that they prefer to use blow-molded containers or injection molded hard cans for growing woody ornamentals, however, about a third of growers reported using greenhouse/flower pots for open field production of woody ornamentals. A somewhat higher number of growers reported purchasing of greenhouse/flower pots in 2000 than in 1999. Taken together, these results indicate that there certainly was potential for competition in the horticultural container market in this region to be adversely affected by the dominance of *Nursery Supplies/Lerio*. However, the fact that prices increases for containers were similar to increases in the cost of virgin plastic raw materials for container manufacturing suggest that normal market factors were in effect, and that consumers have not yet suffered unduly increased costs for nursery containers.

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Appendix--Interview Protocol for Telephone Survey of Wholesale Nurseries

Question HELLO
Hello, my name is _____. I'm calling from the University of Florida on behalf of the Institute of Food and Agricultural Sciences. We are conducting a survey about nursery irrigation and purchasing of horticultural containers.
INTERVIEWER: PRESS 1 TO CONTINUE WITH SURVEY
PRESS CTRL/END TO TERMINATE CALL

Hello, my name is _____. I'm calling from the University of Florida for a survey of nursery growers. We started an interview a few days ago about the nursery business. May we continue?
PRESS 1 TO CONTINUE WITH SURVEY

Question HOME
May I speak to the person most knowledgeable about the purchasing of supplies for the business, and about its irrigation practices?
1 You have the person on the line
2 Person passes the phone
3 No one is present who knows about the purchase issues

Question NOTHANK
As we are only interviewing the person most knowledgeable about irrigation practices and supply purchasing for the business, I do not have any other questions for you. We will call back at a later time. Thank you for talking to me.
INTERVIEWER -- PRESS CTRL/END AND SELECT CALLBACK

Question TAKETWO
Hello, my name is _____. I'm calling from the University of Florida. This is not a sales call in anyway. We are simply interested in your opinions. According to our selection procedures, I need to interview the most knowledgeable person in your nursery about irrigation practices and supply purchasing.
PRESS 1 TO CONTINUE WITH SURVEY

Question RNAM
Your phone number was randomly selected from a list of businesses similar to yours. Your answers will be completely confidential and you do not have to answer any questions you do not wish to answer. Responses will not be publicly identified with your name or the company's. IF NECESSARY - * it should take less than 10 minutes.
May I have your first name?

RECORD SEX OF RESPONDENT (NOT INFORMANT)
1 Male
2 Female

Question Q1
Did your company produce nursery plants for sale last year (1999)?
1 Yes
2 No
-8 Don't know
-9 Refused

Question Q2
Does your nursery have open field container production of woody ornamentals? INT:(BIRCH, BEECH, MAPLE, and DOGWOOD trees are examples of woody ornamentals)
1 Yes
2 No
-8 Don't know
-9 Refused

Question Q2a
How many acres of open field production area did you have last year?
(0-999)
-8 Don't know
-9 Refused

Question Q3
Approximately how many species of plants did you sell (or grow) last year?
(1-999)
-8 Don't know
-9 Refused

Question Q4a
Which of the following types of nursery plants do you grow, and what percentage of your total production does each represent.

Do you grow shrubs and small landscape materials?
1 Yes
2 No
-8 Don't Know
-9 Refused

Question Q4b
What percentage of your total production do shrubs and landscape materials represent?
(0-100)
-8 Don't Know
-9 Refused

Question Q4c
Do you grow trees and larger landscape materials?
1 Yes
2 No
-8 Don't Know
-9 Refused

Question Q4d
What percentage of your total production do trees and larger landscape materials represent?
(0-100)
-8 Don't Know
-9 Refused

Question Q4e
Do you grow tropical plants for interiorscapes?
1 Yes
2 No
-8 Don't Know
-9 Refused

Question Q4f
What percentage of your total production do tropical plants for interiorscapes represent?
(0-100)
-8 Don't Know
-9 Refused

Question Q19
Which of the following sizes of nursery containers do you purchase?
Less than 1 gallon
1 to 3 gallon
5 to 7 gallon
10 gallons or larger
Other size(s)
None
Don't know
Refused

Question Q19a
What percentage of your total purchase does a less than 1 gallon container amount to?
(0-100)
-8 Don't know
-9 Refused

Question Q19b
What percentage of your total purchase does a 1 to 3 gallon container amount to?
(0-100)
-8 Don't know
-9 Refused

Question Q19c
What percentage of your total purchase does a 5 to 7 gallon container amount to?
(0-100)
-8 Don't know
-9 Refused

Question Q19d
What percentage of your total purchase does a greater than 10 gallon container amount to?
(0-100)
-8 Don't know
-9 Refused

Question CHECK
Your percentages must total 100 and they do not. They equal .We need to go back and change some things.
INT: PRESS 2 TO GO BACK & CORRECT %s
IF RESPONSES INCLUDE -8, -9, ETC. JUST CONTINUE
PRESS 1 TO CONTINUE
PRESS 2 TO GO BACK & RE-ENTER %s

Question Q20
Which of the following types of nursery containers do you purchase?
Blow-molded field-growing containers
Injection-molded/vacuum formed "hard cans"
Injection-molded or vacuum-formed flower or "greenhouse pots"
Other
None
Don't know
Refused

Question Q21a
What percentage of your total purchases do blow-molded field-growing containers represent?
(0-100)
-8 Don't know
-9 Refused

Question Q21b
What percentage of your total purchases do Injection-molded or "vacuum-formed hard cans" represent?
(0-100)
-8 Don't know
-9 Refused

Question Q21c
What percentage of your total purchase do injection-molded or vacuum formed "flower" or "greenhouse pots" represent?
(0-100)
-8 Don't know
-9 Refused

Question Q21d
What percentage of your total purchase do other types of containers represent?
(0-100)
-8 Don't know
-9 Refused

Question Q21back
Your percentages must total 100 and they do not. They equal We need to go back and change some things.
INT: PRESS 2 TO GO BACK & CORRECT %s
IF RESPONSES INCLUDE -8, -9, ETC. JUST CONTINUE
PRESS 1 TO CONTINUE
PRESS 2 TO GO BACK & RE-ENTER %s

Question Q22
What brands of blow-molded field-growing containers do you purchase CURRENTLY?
Nursery Supplies/Lerio
ITML
Other
Don't Know
Refused

Question Q22A
What percentage of your total purchases does NURSERY SUPPLIES/LERIO brand of blow-molded field-growing containers represent? INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q22b
What percentage of your total purchases do ITML brand of blow-molded field growing containers represent?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q22c
What percentage of your total purchases do OTHER brands of blow-molded field-growing containers represent?
INT: INTERVIEWER IF YES THEN ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q22back
Your percentages must total 100 and they do not. They equal .We need to go back and change some things.
INT: PRESS 2 TO GO BACK & CORRECT %s
IF RESPONSES INCLUDE -8, -9, ETC. JUST CONTINUE
PRESS 1 TO CONTINUE
PRESS 2 TO GO BACK & RE-ENTER %s

Question Q23
What brands of blow-molded field-growing containers did you purchase LAST YEAR?
Nursery Supplies
Lerio/IEM
ITML
Other
Don't Know
Refused

Question Q23a
What percentage of your total purchases did NURSERY SUPPLIES brand of blow-molded field-growing containers represent last year? INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q23b
What percentage of your total purchases did Lerio/IEM brand of blow-molded field-growing containers represent last year? INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q23c
What percentage of your total purchases did ITML brand of blow-molded field-growing containers represent last year? INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q23d
What percentage of your total purchases did OTHER brands of blow molded containers represent last year? INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q23back
Your percentages must total 100 and they do not. They equal
We need to go back and change some things.
INT: PRESS 2 TO GO BACK & CORRECT %s
IF RESPONSES INCLUDE -8, -9, ETC. JUST CONTINUE
PRESS 1 TO CONTINUE
PRESS 2 TO GO BACK & RE-ENTER %s

Question Q25
Has your business experienced higher prices for blow-molded field-growing containers this year compared to last year?
1 Yes
2 No
-8 Don't Know
-9 Refused

Question Q25a
What brands have increased in price?
Nursery Supplies/Lerio
ITML
Other
Don't Know
Refused

Question Q25aa
How much has Nursery Supplies/Lerio brand increased?
1-1000%)
-8 Don't Know
-9 Refused

Question Q25ab
How much has ITML brand increased?
1-1000%)
-8 Don't Know
-9 Refused

Question Q25ac
How much have Other brands increased?
(1-1000%)
-8 Don't Know
-9 Refused

Question Q26
Has your business experienced difficulty in obtaining the types and quantities of blow-molded field-growing containers you require this year?
1 yes
2 no
-8 Don't Know
-9 Refused

Question Q26a
In what way has your business experienced difficulty? Please describe.
1 (Has Answer)
-8 Don't Know
-9 Refused

Question Q27
What brands of Injection-molded and vacuum-formed hard cans do you purchase CURRENTLY?
Nursery Supplies/Lerio
ITML
OTHER (PLEASE SPECIFY)
Don't know
not available

Question Q27A
What percentage of your total purchases do Nursery Supplies/Lerio brand of Injection-molded and vacuum-formed hard cans represent?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q27b
What percentage of your total purchases do ITML brand of Injection-molded and vacuum-formed hard cans represent?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q27c
What percentage of your total purchases do OTHER brands of Injection-molded or vacuum-formed hard cans represent?
INT: INTERVIEWER IF YES THEN ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q27back
Your percentages must total 100 and they do not. They equal
We need to go back and change some things.
INT: PRESS 2 TO GO BACK & CORRECT %s
IF RESPONSES INCLUDE -8, -9, ETC. JUST CONTINUE
PRESS 1 TO CONTINUE
PRESS 2 TO GO BACK & RE-ENTER %s

Question Q28
What brands of Injection-molded or vacuum-formed hard cans did you purchase LAST YEAR?
Nursery Supplies
Lerio/IEM
ITML
Other
Don't Know
Refused

Question Q28a
What percentage of your total purchases did NURSERY SUPPLIES brand of Injection-molded or vacuum-formed hard cans represent last year?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q28b
What percentage of your total purchases did Lerio/IEM brand of Injection-molded or vacuum-formed hard cans represent last year? INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q28c
What percentage of your total purchases did ITML brand of Injection-molded or vacuum-formed hard cans represent last year?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q28d
What percentage of your total purchases did OTHER brands of Injection-molded or vacuum-formed hard cans represent last year?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q28back
Your percentages must total 100 and they do not. They equal .We need to go back and change some things.
INT: PRESS 2 TO GO BACK & CORRECT %s
IF RESPONSES INCLUDE -8, -9, ETC. JUST CONTINUE
PRESS 1 TO CONTINUE

PRESS 2 TO GO BACK & RE-ENTER %s

Question Q29
Has your business experienced higher prices for Injection-molded or vacuum-formed hard cans this year compared to last year?
1 yes
2 no
-8 Don't Know
-9 Refused

Question Q29a
What brands have increased in price?
Nursery Supplies/Lerio
ITML
Other
Don't Know
Refused

Question Q29aa
By how much has Nursery Supplies/Lerio brand increased?
(1-1000%)
-8 Don't Know
-9 Refused

Question Q29ab
By how much has ITML brand increased?
(1-1000%)
-8 Don't Know
-9 Refused

Question Q29ac
How much have Other brands increased?
(1-1000%)
-8 Don't Know
-9 Refused

Question Q30
Has your business experienced difficulty in obtaining the types and quantities of Injection-molded or vacuum-formed hard cans you require this year?
1 yes
2 no
-8 Don't Know
-9 Refused

Question Q30a
In what way has your business experienced difficulty?
PLEASE DESCRIBE.
1 has answer
-8 Don't Know
-9 Refused

Question Q30b1
What brands of injection-molded or vacuum-formed flower or greenhouse pots do you *currently purchase*?
Nursery Supplies/Lerio
ITML
Other
Don't Know
Refused

Question Q30b2
What percentage of your total purchases did NURSERY SUPPLIES/LERIO brand of injection-molded or vacuum-formed flower or greenhouse pots containers represent last year?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q30b3
What percentage of your total purchases did ITML brands of injection-molded or vacuum-formed flower or greenhouse pots represent last year?

INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q30b4
What percentage of your total purchases did OTHER brands of injection-molded or vacuum-formed flower or greenhouse pots represent last year?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q30back
Your percentages must total 100 and they do not. They equal We need to go back and change some things.
INT: PRESS 2 TO GO BACK & CORRECT %s
IF RESPONSES INCLUDE -8, -9, ETC. JUST CONTINUE
PRESS 1 TO CONTINUE
PRESS 2 TO GO BACK & RE-ENTER %s

Question Q31
What brands of injection-molded or vacuum-formed flower or greenhouse pots did you purchase *last year*?
Nursery Supplies
Lerio/IEM
ITML
Other
None-- no injection/vacuum pots.
Don't Know
Refused

Question Q31a
What percentage of your total purchases did NURSERY SUPPLIES brand of injection-molded or vacuum-formed flower or greenhouse pots containers represent last year?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q31b
What percentage of your total purchases did Lerio/IEM brand of injection-molded or vacuum-formed flower or greenhouse pots represent last year?

INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q31c
What percentage of your total purchases did ITML brand of injection-molded or vacuum-formed flower or greenhouse pots represent last year?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q31d
What percentage of your total purchases did OTHER brands of injection-molded or vacuum-formed flower or greenhouse pots represent last year?
INT: ENTER THE PERCENTAGE.
(0-100%)
-8 Don't Know
-9 Refused

Question Q31back
Your percentages must total 100 and they do not. They equal
We need to go back and change some things.
INT: PRESS 2 TO GO BACK & CORRECT %s
IF RESPONSES INCLUDE -8, -9, ETC. JUST CONTINUE
PRESS 1 TO CONTINUE
PRESS 2 TO GO BACK & RE-ENTER %s

Question Q32
Has your business experienced higher prices for injection-molded or vacuum-formed flower or greenhouse pots containers this year compared to last year?
1 Yes
2 No
3 No-doesn't buy injection/vacuum pots
-8 Don't Know
-9 Refused

Question Q32a
What brands have increased in price?
Nursery Supplies/Lerio
ITML
Other
Don't Know
Refused

Question Q32aa
By how much has Nursery Supplies/Lerio brand increased?
(1-1000%)
-8 Don't Know
-9 Refused

Question Q32ab
By how much has ITML brand increased?
(1-1000%)
-8 Don't Know
-9 Refused

Question Q32ac
How much have Other brands increased?
(1-1000%)
-8 Don't Know
-9 Refused

Question Q33
Has your business experienced difficulty in obtaining the types and quantities of injection-molded or vacuum-formed flower or greenhouse pots you require this year?
1 yes
2 no
3 No-doesn't buy injection/vacuum pots
-8 Don't Know
-9 Refused

Question Q33a
In what way has your business experienced difficulty? Please describe.
1 (Has Answer)
-8 Don't Know
-9 Refused

Question Q40
In OPEN-FIELD production, if a blow-molded container, an injection- molded or vacuum-molded hard can is available and adequate for a particular plant, do you ordinarily use that type of container?
1 yes
2 no
-8 Don't Know
-9 Refused

Question Q43a
Why?
1 has answer
-8 don't know
-9 not available

Question Q43b
Why not?
1 has answer
-8 don't know
-9 not available

Question Q44
In OPEN-FIELD PRODUCTION, do you ordinarily use injection-molded or vacuum-molded "flower" or "greenhouse" pots? (INT: DO THEY USE EITHER TYPE OF POT? IF SO, ANS. IS YES.)
1 yes
2 no
-8 Don't Know
-9 Refused

Question Q44a
Why?
1 has answer
-8 don't know
-9 not available

Question Q44b
Why not?
1 has answer
-8 don't know
-9 not available

Question Q45
Please indicate which of the following categories describes

the annual sales of your company last year?
(CHOOSE ONE)
less than $250,000
$250,000 - $499,000
$500,000 - $999,000
$1 million - $2.4 million
$2.5 million - $5 million
greater than $5 million
Don't know / Refused to answer
Not available

Question THANKS
We can only ask questions of companies who produced nursery plants for sale last year (1999) and nurseries who have open field container production of woody ornamentals. Thank you very much for your patience and cooperation. PRESS G TO CONTINUE DO NOT HIT CTRL/ENTER OR QUIT!!!!!

Question THANKYOU
This concludes the interview. Thank you very much for your patience and cooperation. PRESS G TO CONTINUE
DO NOT HIT CTRL/ENTER OR QUIT!!!!! IF YOU DO THIS WILL NOT BE COUNTED AS A COMPLETE!!!!!