

SECTION 11 MARKETING

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Marketing Characteristics of Florida Turfgrass-Sod

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Florida

Nature of Work: Sod production in Florida has grown tremendously in the past 35 years. Classified as part of the "Nursery and Greenhouse" industry by U.S. Dept. of Agriculture (Johnson, 1990), turfgrass-sod production now represents a major agricultural activity. Sales have grown from 6,700 acres in 1960 to 14,300 in 1974 to over 35,000 acres in 1987 at a total value of nearly \$ 115 million (Haydu and Cisar, 1992). For the 30-year period, this growth represented an 18 percent average annual increase. As of 1990, Florida accounted for nearly 20 percent of the total value of turfgrass sales in the United States. California was rated second at 15 percent (Johnson, 1990).

In 1990 a survey was undertaken to examine changes in the industry over the previous three years, with special attention directed at the marketing and distribution of sod within Florida. The study restricted the target population to "full-time" sod producers. Full-time producers were differentiated from other landowners who only periodically harvest a portion of their pasture for bahiagrass. To identify the population, a list of prospective growers was compiled from two different sources. First, a grower membership list (Turfgrass Producer's Association of Florida (TPAF)) identified 43 firms. In turn, these were contacted and asked to identify producers they knew of but who were not members of the TPAF organization. Through their cooperation, a list of 93 potential producers were identified. Ultimately, this list was reduced to a sample of 68 because: a) some sod producers were no longer in business; b) they were the wrong type of business (i.e., "plug" producer, landscaper, broker, supplier), or; c) they were a branch of another firm and were excluded to avoid double counting. Three separate mailings were made in which 51 usable questionnaires were returned for a response rate of 75 percent. The data were entered on a Lotus 123 spreadsheet and analyzed according to size of operation, with farms segmented into the small (0-499 acres), medium (500-999), large (1,000-1,999), and very large (> 2,000) categories.

Results and Discussion: Florida sales of turfgrass-sod comprised 32,400 acres in 1990 (Table 1). Although this represents roughly a 9 percent decline since 1987, the value of sod remains considerably large. Using the average price received by growers in 1990 (\$0.0725/ft²) and multiplying this by total sales (1,411 million square feet), a wholesale value of \$102.3 million is obtained. This makes turfgrass-sod one of the ten most economically important crops in Florida. In terms of grass-type, St. Augustinegrass accounted for nearly 80 percent of this total value with bahiagrass following a distant second (15 percent). In the same vein, although few in number, the five largest producers accounted for 60 percent of 1990 sales (Table 1).

Most of these growers were located in the southern portion of the state in the Everglades Agricultural Area (EAA). Unlike the mineral-based soils of west and northern Florida, soils in the EAA are muck (histosols) and are highly amenable to low-cost production technologies.

During the past twenty years the supply of sod has been "pulled" by a strong demand from Florida's robust economy. In addition to a viable agricultural and industrial base, Florida's tourism industry has contributed substantially to the state's economy. In the past few years, however, the economic climate has taken a downturn, just as it has in many other parts of the country. Housing starts, a major indicator of economic activity and an important factor in the demand for sod, grew sluggishly during this period. In spite of production scaled back nearly 10 percent during the 1987-90 period, producers still overwhelmingly (90%) claimed that sod production was still too high. There were no producers in the study who cited that too little sod was being grown, although 10 percent were "uncertain." Interestingly, in spite of this perceived oversupply situation 35 percent claimed there were sod shortages. Spring was identified as the time of year when shortages were most acute (44 percent affirmed). The two grasses most likely to be in short supply were St. Augustinegrass and bahiagrass, the most commonly grown Florida grasses. When examined by size of operation, relatively few of the small (9%) and medium-sized (10%) growers cited shortages of St. Augustinegrass, but 40 percent of the growers in the large category did. This latter group generally sells to landscape contractors and developers, in contrast to the former who concentrate more on retail outlets and occasionally sell directly to homeowners. Finally, in terms of the market distribution area, 48 percent of respondents sold their sod in markets less than 50 miles from production site, 42 percent shipped sod between 50-100 miles, and only ten percent shipped to markets in excess of 100 miles. Given the limiting characteristics of sod shipping, such as weight, bulk, and perishability, it is clear that transporting cut sod great distances is simply not economically feasible. Shipping costs will tend to offset the low-cost production capabilities of the larger growers due to their size and scale advantages. Smaller producers located closer to markets can, in these instances, compete effectively with their large counterparts.

Significance to the Industry: With sales exceeding \$100 million in 1990, sod production represents a major agricultural activity in Florida. Eighty percent of sod sales were comprised of St. Augustinegrass and most of this was grown by the five largest producers. Although it is clear that the largest growers realize the lowest-cost due to their size and scale advantages, smaller growers have also found their market niche. Because of three limiting characteristics of sod— weight, bulk, and perishability— shipping this product long distances is expensive and must be done quickly. Also, most of these large growers are located in the southern portion of the state which is quite far from many of the northern markets. Consequently, smaller

growers situated closer to these outlets are able to compete effectively with their larger counterparts. This finding underscores the fact that, at least in the sod industry, size is not the defining factor of efficiency and that both producer groups play an important role in servicing the market for cut sod.

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Table 1. Number acres of sod harvested in Florida, by grass type and farm size for 1990.

FARM SIZE CATEGORY & "N" †	SPECIES					Row Percent
	St. Augustine	Bahia	Bermuda	Centipede	Total	
	----- Acres -----					
Small (28)	1,276	380	467	352	2,475	(8)
Medium (11)	3,097	1,636	10	130	4,873	(15)
Large (7)	4,100	1,030	330	0	5,460	(17)
Very Large (5)	17,562	1,710	320	0	19,592	(60)
Total (51)	26,035	4,756	1,127	482	32,400	
Column Percent	(80)	(15)	(4)	(1)		(100)

† Farm size is defined as: small (0-499 ac); medium (500-999 ac); large (1000-1,999 ac); very large (> 2000 ac). "N" is the number of observations per category.

Table 2. Quality of turfgrass-sod in Florida, as rated by 51 producers in 1990.

FARM SIZE CATEGORY & "N" †	Grass Quality			
	Excellent	Good	Fair	Poor
	----- Percent -----			
Small (28)	27	45	20	9
Medium (11)	29	38	12	13
Large (7)	25	29	21	10
Very Large (5)	25	44	22	9
Average	26	40	19	10

† Farm size is defined as: small (0-499 ac); medium (500-999 ac); large (1000-1,999 ac); very large (> 2000 ac). "N" is the number of observations per category.

1992 Annual Bedding Plant Sales Summary For the Southeast Region

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Alabama

Nature of Work: The objective of this study was to describe the 1992 spring annual bedding plant sales in the Southeast and determine what those businesses plan to produce in 1993. The Professional Plant Growers' Association and Greenhouse Manager Magazine authorized Auburn University researchers to conduct a study of their producer/grower classified members.

A 4-page questionnaire was mailed to 1400 PPGA grower members in the U.S. and Canada on July 24 and August 7, 1992. Two survey forms and business reply envelopes were used to encourage a higher response rate. Of the 1400 members who received survey forms, 293 or 21% returned completed forms. Of those, 62 respondents were in the Southeast region. They comprised 21% of the responses.

Responses were received from states in the Southeast region, including Alabama (1), Arkansas (1), Florida (9), Georgia (5), Kentucky (5), Louisiana (1), Maryland (6), Mississippi (2), Missouri (10), North Carolina (5), Oklahoma (1), South Carolina (3), Tennessee (0), Texas (8), Virginia (5), and West Virginia (0). The most responses were received from Missouri and none were received from Tennessee and West Virginia. USDA Crop Reporting Service showed that states in the Southeast region accounted for 32% of production (\$353 million of \$1.1 billion) wholesale value of annual bedding and garden plants produced nationwide in 1992 (Figure 1).

We divided respondents into categories based on the type of business each was operating. A small percentage performed only one business function: grower (25%), wholesaler (8%), or retailer (5%). A greater percentage performed more than one business function: grower & wholesaler (34%), wholesaler & retailer (15%), or all three business functions combined (13%). A total of 72% of those responding from the Southeast region performed some type of growing function.

We requested businesses to indicate their gross sales for 1992 in order to determine better how larger the businesses were. There was a very wide range of responses which ranged from \$1900 to \$15 million. Mean sales were \$1.5 million. This indicated that the average respondent from the Southeast region was quite large in terms of gross sales.

We asked businesses whether they had increased gross sales over the previous year (1991). A majority (80%) had experienced an increase in sales while only 20% reported a decrease in sales over 1991. Thirty-two percent of the respondents increased sales by 1% to 5%, eighteen percent increased sales 6% to 10%, and 30% increased sales more than 10%.

Businesses were asked to indicate how their bedding plant prices had changed from 1991 to 1992. Nearly half (49%) increased prices, 8% reported price decreases, and 43% reported price changes of less than 1%.

Respondents were asked to report how they changed the number of units they produced from 1991 to 1992 and how they plan to change the number of units they produce from 1992 to 1993. Seventy-six percent reported increases in units produced from 1991 to 1992 and 68% plan increases in the number of units they grow for 1993.

Managers were asked to rate individual annual plants from a list on the survey. They were asked to rate the plants on a scale from 1 to 5 (1=excellent, 2=good, 3=fair, 4=poor, 5=didn't sell. Ratings were made for the plant's sales appeal or speed in selling. The top ten best selling annual plants were impatiens (1.2), vinca (1.5), pansy (1.6), salvia (1.7), dianthus (1.8), portulaca (1.8), verbena (1.9), ageratum (2.2), coleus (2.5), and dahlia (2.8). Impatiens have been the top selling bedding plant nationwide for over 10 years. They remain the most popular bedding plant with the highest rated sales appeal.

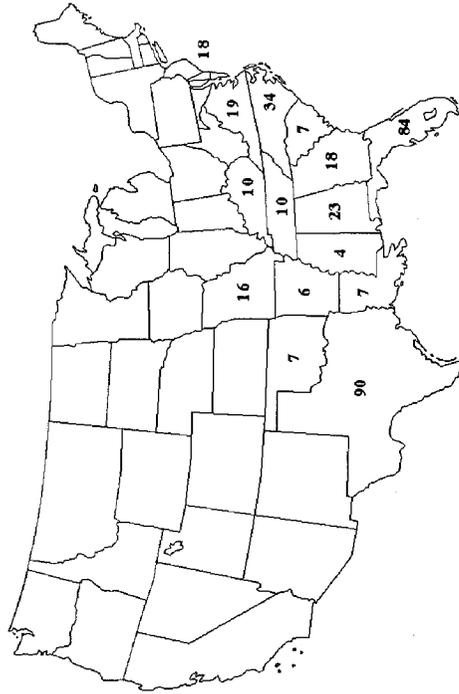
Significance to the Industry: From the information gained in this study, we concluded that the market for annual bedding plants in the Southeast continues to expand sales (moderate increases), prices (small increases), and number of units produced (substantial increases). Similar trends were seen nationwide. USDA statistics show that the Southeast region accounts for one-third of total bedding plant production. Future plans of producers in this region show that the number of units will produced will continue to increase, indicating that the market should continue to expand.

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USDA Bedding Plant Production

1992 Wholesale Value



In Million Dollars

Horticulture Industry Development 1970 to 1993

Bridget Behe and Lisa Beckett
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Nature of Work: The production of woody and herbaceous plants has increased dramatically over the past 23 years. Expansion has been evident both in terms of total sales and in the number of units produced. The USDA collects statistics annually on the production of woody and herbaceous plant production at the wholesale level. Several other sources have collected statistics that reflect the tremendous growth of this industry. The objective of this report is to summarize several published statistics of the ornamental plant industry.

Results and Discussion: Production at wholesale value of greenhouse and nursery crops was slightly below \$1 billion in 1970. Production rose to \$1.7 billion in 1975, \$3.4 billion in 1980, \$5.4 billion in 1985, and \$6.9 billion in 1988 (Figure 1), (Johnson and Napper, 1989). This represents an annual increase of 622% in 18 years, or 34.5% annual growth for the entire industry.

Greenhouse and nursery crop production can be divided into several specific categories of plant production including foliage plants, florist crops, fresh cut flowers and greens, bedding plants (annuals and perennials), and woody ornamentals. Production of foliage plants has leveled considerably from the rapid growth seen in the 1970's, indicating that the market has matured. Production of fresh cut greens has been monitored since 1984 when wholesale value was \$67 million. It grew 8% annually to \$90 million in 1988.

One category that has shown expansion is florist crops. Production of florist crops increased from \$144 million in 1976 to \$494 million in 1988, or 20% per year (Johnson and Napper, 1989). Poinsettia had the highest wholesale value compared to other florist crops produced in the U.S. in 1988 (\$146 million). Other top crops in terms of production at wholesale value were the florist chrysanthemum (\$99 million), florist azalea (\$30 million, Easter lily (\$31 million), and African Violet (\$26 million), (USDC, 1988).

Greatest increases in production have come in the annual bedding and woody ornamental plant categories. Woody plant production was \$958 million in 1970, \$1.7 billion in 1975, \$3.4 billion in 1980, and \$6.8 billion in 1988 (Johnson and Napper, 1989). Woody plant production grew in wholesale value 47% annually. Even if adjusted for inflation, these rates of increases in production at wholesale value represent tremendous growth in the industry. Broad-leafed evergreens accounted for 28% of wholesale

value of woody ornamental plants grown in 1988 (\$256 million), followed by narrow-leaved evergreens at 23% (\$206 million), deciduous trees captured 25% of production (\$210 million), and fruit and nut trees accounted for 8% of production (\$71 million), (USDC, 1988).

Annual bedding plant production was \$94 million in 1976 when it was first tracked separately from other floral crop categories. Wholesale production grew to \$724 million in 1988 (56% annual increase) and exceeded \$1 billion in 1992 (USDA, 1993). The Professional Plant Growers Association/Greenhouse Manager Magazine conduct an yearly study of the annual and perennial plant market, providing additional statistics on the growth of this market segment (Behe and Beckett, 1992). Over 1400 grower-classified members of PPGA were requested to respond, of which 293 (21%) complied. Results of this study showed that the production of annual plants was expanding in terms of sales, but the greatest growth came from increases in numbers of plants produced. There were very minor increases in prices reported. Respondents indicated that they plant to, once again, increase the number of plants they plan to produce next year.

This study (Behe and Beckett, 1992) also described the best selling annual plants: impatiens, petunia, geranium (cutting), marigold, begonia, vinca, geranium (seed), New Guinea impatiens, pansy, and tomato. Impatiens has been the best selling annual plant species for ten years.

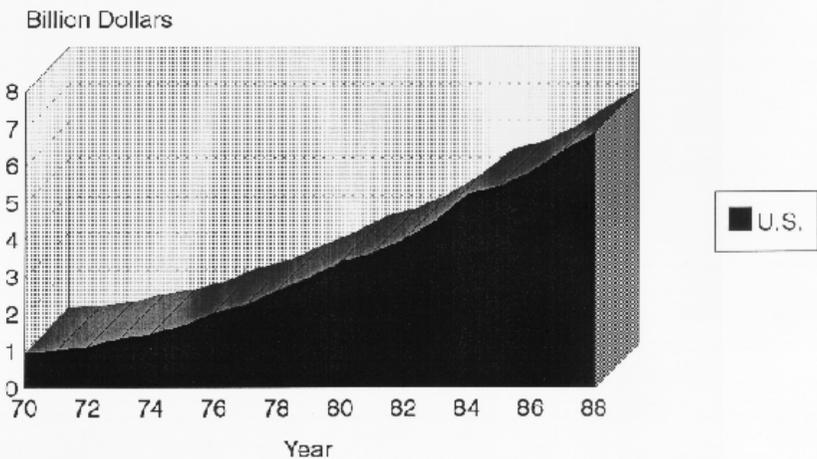
Perennial plants are a segment of the market for which few statistics are published. PPGA/GM survey (Behe and Beckett, 1992) respondents indicated that perennials accounted for an average 17% of their spring crop, which could approach \$187 million of the \$1.1 billion (USDA, 1992) annual plants reportedly produced in 1992. Hardy chrysanthemum production accounted for the largest percentage of perennial plant production (17% of sales), followed by hosta (7.9%), hemerocallis (7%), primula (7%), phlox (6%), and dianthus (5%). Other species accounted for less than 5% of sales. Some respondents indicated they planned to produce more hosta (20% of respondents), hemerocallis (18%), phlox (18%), salvia (13%), chrysanthemum (10%), and dianthus (10%). This substantial portion of the market of herbaceous ornamental plants continues to grow with insufficient documentation.

Significance to the Industry: Ornamental plant production, both herbaceous and woody, has expanded at phenomenal rate of 34.5% annually from 1970 to 1988. Expansion was greatest in woody ornamental and annual plant production, moderate for florist crops, and limited for foliage and fresh cut flowers and greens. Perennial plant production appears to have increased at a substantial rate, but documentation of this is insufficient.

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Greenhouse and Nursery Production 1970 to 1988



USDA Statistical Review

Plant Material Requirements of Landscape Architects

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Georgia

Nature of Work: Landscape architects influence demand for a significant amount of nursery crops and influence which nursery supplies plants (1,2). The availability of plant material has been a point of contention between growers and landscape architects. Landscape architects spend too much time substituting plants and still may not produce the desired landscape. Growers need to project plant material requirements about five years into the future to make product line decisions today.

A study was initiated to better understand future plant material needs in the context of landscape trends. From these landscape trends, growers can identify categories of plants, and specific varieties, to meet the landscape requirements. The identified plants can then be marketed in the context of landscape trends and needs.

Results and Discussion: The mean value of plants specified by each Georgia landscape architect was \$91,000 for large deciduous trees (19% of all plants specified), \$85,500 for small deciduous trees (18% of all plants), \$84,200 for evergreen shrubs (17% of all plants), \$68,000 for sod (14% of all plants), \$59,700 for evergreen trees (12% of all plants), \$43,700 for perennials/groundcovers (9% of all plants), \$20,300 for coniferous shrubs (4% of all plants), \$18,600 for bedding plants (4% of all plants), and \$12,100 for native herbaceous (3% of all plants). The value of plant material specified, within each plant-type, varied significantly with the size of the landscape architectural firm.

The largest category of plants specified by landscape architects, in terms of dollar value, was the ornamental trees, which accounted for approximately 50% of the value of all plants specified. The value of deciduous trees was approximately 75% of all trees and, equally divided between small and large trees. The remaining 25% was evergreen trees. The large firms accounted for approximately 80% of the value of all trees specified.

The five plant-types normally associated with container ornamental nurseries in Georgia, (Nursery Stock) constituted about 37% of the value of all plants specified. Within the Nursery Stock category, broadleaf shrubs were about 47% of the value of plant material, followed by perennials/ground

covers (24%), coniferous shrubs (11%), bedding plants (11%), and native herbaceous (7%). The large firms accounted for 72% of the value of nursery stock specified. Turf (sod) accounted for 14% of the value of all plant material specified. Large firms specified 78% of the value of sod.

To assist plant producers with production planning, landscape architects were asked to project their needs for each of the nine plant-types, over the next five years. For two types of plants, coniferous shrubs and turf, the predicted need varied significantly with the size of the firm. For coniferous shrubs and turf, the large firms projected a lower level of need, compared to small and medium firms. The frequency of respondents indicating a need for "more" plants was highest for the plant-types, native herbaceous, perennials/ground covers, large deciduous trees, small deciduous trees, and evergreen trees. With the exception of turf, a majority of the firms indicated that they would use the "same" or "more" plants over the next five years. Sod producers may need to better understand the reasons for projected lower use of turf by the large and medium firms since, the medium and large firms account for 97% of the turf specified.

Landscape architects were asked to identify up to three trends that could change the type of plants specified over the next 5 years and, to rank them by order of importance. The responses did not vary by size of firm indicating general agreement accross categories of landscape architects regarding landscape trends. The seven trends identified were; less available water for landscaping, low- maintenance landscapes, more color, less pesticide use, smaller areas to landscape, impact of the environmental movement, and use of more/larger trees.

Over 50% of the respondents listed water availability as the most important issue that could affect the type of plants specified. In fact, 91% of the firms listed water availability as first or second in importance. Comments by respondents indicated a strong concern over total water availability and, the likelihood of water interruptions. The comments suggest that future landscapes should require less water and be able to survive periods of no water. The trend toward lower maintenance landscapes was identified by 75% of the respondents, with 18.7% listing as the most important trend. Specific comments were related to lower costs for replacement of plant material, such as fewer change-outs of annual beds. Also mentioned was landscapes that require less maintenance, such as pruning, spraying, and mowing. The customers of landscape architects expect to spend less for maintenance of future landscapes. The use of more color was listed most often as a third priority. Many of the respondents listing this trend indicated that color, in terms of flowers, would increasingly be obtained through the use of perennials. Also more color would come from selection of plants for their foliage color during the growing season as well as during the fall season.

Landscape architects identified the use of pesticides as a trend that could affect the type of plants required in future landscapes. They were concerned that there would be fewer pesticides to apply and, that their clients would prefer landscapes that do not require use of pesticide applications. They expressed interest in disease and insect resistant plants.

Smaller areas to landscape was listed as a trend by relatively few firms but was listed as most important by all firms listing this trend. In response to smaller areas they expect taller buildings which creates a need for more columnar plants.

The "environmental movement" trend was identified by approximately 56% of the respondents with most of the respondents rating it as a third choice in importance. The most frequently listed comment for this trend was increased use of native plants. Other comments included wildlife habitat landscaping and more wetland plants.

Several landscape architects identified a trend toward the use of more trees in the landscape and in city planning, citing city ordinances requiring replanting of trees or use of more trees in parking lots. They also predicted use of larger caliper trees.

All firms that listed this trend identified it as most important. The landscaping trends provide insight for marketing communications directed to landscape architects. Plant catalogs and plant availability listings could be organized by these trends. The grouping of plants by use, such as low water-requiring, butterfly plants, etc. would be more useful to landscape architects than an alphabetical listing. This format would simplify plant selection by landscape architects.

Significance to the Industry: Landscape architects need assistance in site selection and understanding the benefits of plants. Growers are generally the most knowledgeable about plant performance and, have a responsibility, as the supplier, to educate the customer on proper use of the product. This is an area where producers and university personnel could work together to develop value-added information. As an industry we need to place more of our marketing emphasis on the uses and benefits of our product, in addition to aesthetics. Marketing communications for new or existing cultivars might highlight how these plants accommodate one or more of the landscape trends identified in this study.

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Training Alabama Garden Center Employees

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Alabama

Nature of Work: Since the 1970's and 80's, the retailing of lawn and garden products and services has expanded beyond the garden center to include the competition of large mass merchandisers and other retail businesses. If garden centers are to survive profitably, they must educate consumers on the products and services they have to offer. The employee is the critical link that communicates how the garden center is different from other retail outlets.

In a recent study, Barton et al. (1992) revealed that labor expenses account for about 60% of the garden center's total operating expenses. Labor costs can be partly reduced by training and developing the skills of employees. Lack of training or poor training can result in unsuccessful employees failing to reach their potential, high employee turnover, and decreases in productivity and profits. Garden center employees need a working knowledge of the plants and products they work with and sell, as well as knowledge of customer relations and selling skills.

Results and Discussion: In a preliminary study, a sample of 100 randomly selected Alabama Master Gardeners were asked to participate in a consumer telephone survey in October and November 1992 that evaluated customer's selection of store in which they purchased plants and their perceptions of store employees' work performance. The responses of Master Gardeners may be representative of consumers who are more knowledgeable and involved hours per week. Managers worked an average of 3 years longer for their current employer indicating greater job stability.

Fifty-three percent of the respondents were male. Fifty-one percent of the managers were female and 55% of subordinate employees were male.

Eighty-six percent of respondents had completed 12 years or more of formal education. The diversity of employee backgrounds was shown with only 10% of all respondents holding a college degree in horticulture or a related field.

Forty-four percent of all respondents had received some formal training when hired by their current employer (Table 1). Training continued among 68% of respondents. Lack of employer/employee communication was evidenced by only 39% of respondents reporting that their employer had discussed a written description of their job responsibilities with them.

Responses to no training received increased as time on the job passed, while responses to receiving a lot of training decreased over time. Responses to receiving some training increased as time passed.

More respondents received one-on-one training (60%) and smallgroup instruction with 5 or fewer employees (65%) than by other methods surveyed indicating a need for more cost efficient methods of training. More managers made up the respondents who received training by video taped instruction (5%) and educational seminars (26%)(Table 1).

The results of this study reveal much about the inefficiency and lack of training practices of many Alabama garden center hours per week. Managers worked an average of 3 years longer for their current employer indicating greater job stability.

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The results of this study reveal much about the inefficiency and lack of

training practices of many Alabama garden center businesses. The low percentage of employees who received training and who had their job responsibilities explained to them indicates many garden center owners and management seem to lack an understanding of the need for and the commitment to employee training. Anecdotal reports from some garden center owners revealed their practice of providing training only on an "as-needed" basis and that they believed they could not afford to invest more time and money to train employees because a competitor might lure them away with a pay increase or the employee might leave to start their own garden center business (Musgrove, 1993 personal communication).

Significance to Industry: Garden centers must adapt the way they do business to successfully meet the challenge of competing with diverse retailers and increase their profits and sales in the retail "green" industry. Training employees is one way to increase employee productivity and work performance. If knowledge and skill levels of employees are raised and employee turnover is decreased, consumer confidence levels are likely to be higher and garden centers can more adequately meet the customer's needs.

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Table 1. Comparison of manager and subordinate employee positions on 16 job training variables.

Variable	Total (%)	<u>Employee Position</u>		
		Manager (%)	Subordinate (%)	P Level
Job description and duties discussed with me when hired.	39.1 (n=161)	39.1 (n=46)	39.8 (n=113)	0.935
I received some formal training when hired.	44.1 (n=161)	40.4 (n=47)	46.4 (n=112)	0.487
I continued to receive training on this job.	68.1 (n=163)	65.2 (n=46)	68.7 (n=115)	0.670

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More training would increase my own confidence in my work performance.	81.9 (n=138)	88.1 (n=42)	80.0 (n=95)	0.250
My employer makes informative trade journals and publications available to employees.	69.2 (n=159)	82.2 (n=45)	63.4 (n=112)	0.021*
All my training has been done on an individual basis.	60.5 (n=162)	52.4 (n=42)	63.6 (n=118)	0.203
I have had some training in small groups (5 or fewer people).	64.7 (n=167)	67.4 (n=43)	63.9 (n=122)	0.679
I have received some training by video tapes.	4.6 (n=174)	10.4 (n=48)	2.4 (n=124)	0.025*
I have attended educational seminars while working for my current employer (since Jan. 1990).	26.0 (n=173)	39.6 (n=48)	20.3 (n=123)	0.010*
My employer paid the fees for me to attend seminar(s).	50.7 (n=75)	74.1 (n=27)	36.2 (n=47)	0.002*

*Significant at $P \leq 0.10$

Rating a Nursery's Marketing Using Basic Attractiveness and Competitiveness Strength Factors

Forrest E. Stegelin
Kentucky

Nature of Work: The development of marketing strategies must be appropriate to the economic and market conditions in which a nursery business finds itself within the industry. If the marketing plan and market analyses are to be useful concepts, some way must be found to evaluate systematically both the nursery industry attractiveness and the firm's competitive strengths in order to assess potential strategies. Once a basic strategy can be appropriately identified, suitable tactics for achieving that strategy can be developed.

There is a lengthy checklist of factors that can be evaluated to determine the attractiveness of the business and the competitive strengths that can be employed to maintain a profitable position. In order to compare businesses, a semi-quantitative system can be used, consisting of two composite numbers, each of which is a measure of the two broad concepts, attractiveness and strength. First, it is necessary to decide what key criteria are to be included, and these will vary with the business being analyzed. The object of the evaluation is to place a business in the proper position so that some inferences can be drawn as to what strategies should be used.

Results and Discussion: The list of factors to be considered contains a maximum of about ten factors for each of the two basic concepts [attractiveness factors, Table 1, and competitive-strength factors, Table 2] for evaluating a landscape plants nursery. By applying the ten-point-maximum rating scales, as shown in Tables 1 and 2, the nursery industry scores a 6.25 for attractiveness and the depicted nursery scores an 8.25 for competitiveness (Table 3) [these ratings are taken from nursery industry and business evaluations conducted in Kentucky by the author]. This results in the strategy position shown in Figure 1, which means the example nursery business would be located in the "Selective—Invest for Growth" matrix area of Figure 2, for which the following strategic objectives are recommended: (a) invest for growth; (b) invest heavily in selected market segments; (c) seek attractive new segments to apply strengths; and (d) protect against crucial vulnerabilities. The rating scales and options matrix are adapted from Strategic Marketing Planning, edited by Bernard A. Rausch for the American Management Association.

The nursery business competitiveness rating factors listed were picked because they were judged to be crucial to the success of a nursery business. By examining the reasons that some of those factors scored lowest in the competitive portion of the matrix, attention can be devoted to

improving the firm's position. The key strategic objectives cited above might be achieved by examining each factor in the competitiveness ratings separately, as shown in Table 4. While most of the competitiveness factors are marketing-specific, some of the strategies suggest the participation of other functional areas. For example, quality enhancement requires the cooperative efforts of purchasing and production. A similar evaluation of the economic and marketing attractiveness of the industry offers insight into the strengths and weaknesses of the nursery industry and provides directives for the industry's continued growth.

Significance to Industry: Techniques are available for selecting marketing strategies that will maximize a nursery's value and achieve the goals established in the business and marketing plans. A semi-quantitative procedure using rating scales applied to industry attractiveness and business firm competitiveness factors is used to identify and improve the key factors influencing the strategic position of the nursery business. Applying the strategic options matrix offers guidance for improving both marketing profits and financial profitability of the individual business within the context of the industry performance.

Literature Cited:

1. Rausch, Bernard A. 1982. Strategic Marketing Planning. American Management Association, Inc.

Table 1. Basic Attractiveness Factors for Rating a Retail/Service Business

	<u>Score 10</u>	<u>Score 5</u>	<u>Score 1</u>	<u>Weight</u>
Industry or market growth rate (%/yr)	over 12	5 to 12	under 5	20%
Type of distribution network needed	selective	ordinary	wide	5%
Price stability	good	fair	poor	5%
Customer concentration ^a	over 20/80	10 to 20/80	under 10/80	10%
Competitive entry probability	low	moderate	high	10%
Competitive vertical integration	low	moderate	high	10%
Financial condition of key competitors	poor	fair	good	10%
Functional substitute ^b	unlikely	possible	available or very likely	10%
Percentage of industry capacity in use	over 90	75 to 90	under 75	10%
Ratio of sales to assets employed	over 2.0	1.5 to 2.0	under 1.5	10%

100%

^a Score 10 H more than 20 percent of the customers purchase 80 percent of the sales.

^b Functional substitute factor indicates the likelihood that another product of a different type will replace your product. For example, development of a chemical to retard lawn growth greatly would cut into sales of powered lawn mowers.

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Table 2. Basic Competitive-Strength Factors for Rating a Retail/Service Business

	<u>Score 10</u>	<u>Score 5</u>	<u>Score 1</u>	<u>Weight</u>
Your firm's growth rate (%/yr)	over 12	5 to 12	under 5	10%
Number of different key markets served	over 4	2 to 4	only 1	10%
Relative share of key market(s) ^a	over 2	1 to 2	less than 1	15%
Quality levels compared to competition	higher	about same	lower	10%
Reputation compared to competition	higher	about same	lower	10%
Loyalty of key customers	strong	fair	poor	10%
Your financial strength against competition	stronger	same	weaker	10%
Your capacity utilization (%)	over 90	75 to 90	under 75	5%
Your costs compared to competition	lower	about same	higher	10%
Degree of differentiation	greater	about same	smaller	10%
				100%

^a If there is more than one key market, relative share could be scored based on a weighted composite share of key markets. For example, if the total demand for your products in market S is \$5 million, your sales are \$1 million, and your largest competitor's share is \$0.5 million, and if the demand in market T is \$1 million, your sales are \$0.3 million, and your largest competitor's share is \$0.3 million, then the weighted composite relative share is [\$ millions]: $\$5/\$6 (\$1/\$0.5) + \$1/\$6 (\$0.3/\$0.3) = 1.84$.

Table 3. Rating a Nursery Business

<u>Business Attractiveness</u>					<u>Competitive Strengths</u>				
<u>Factor</u>	<u>Value</u>	<u>Score</u>	<u>Weight</u>	<u>Weighted Rating</u>	<u>Factor</u>	<u>Value</u>	<u>Score</u>	<u>Weight</u>	<u>Weighted Rating</u>
Growth rate	8.9	5	.20	1.00	Growth rate	12.5	10	.10	1.00
Distribution	ord.	5	.05	0.25	Markets served	4	5	.10	0.50
Price stability	good	10	.05	0.50	Relative share	2.1	10	.15	1.50
Cust. concentr.	25	10	.10	1.00	Quality level	higher	10	.10	1.00
Entry probability	mod.	5	.10	0.50	Reputation	higher	10	.10	1.00
Vert. integr.	mod.	5	.10	0.50	Loyalty	strong	10	.10	1.00
Fin. condition	fair	5	.10	0.50	Fin. strength	same	5	.10	0.50
Funct. subst.	no	10	.10	1.00	Capac. util.	80	5	.05	0.25
Capac. util.	85	5	.10	0.50	Costs compar.	same	5	.10	0.50
S/A ratio	1.9	5	.10	<u>0.50</u>	Differentiation	more	10	.10	<u>1.00</u>
				6.25					8.25

Table 4. Strategies for the Nursery Business

<u>Factor</u>	<u>Present Condition</u>	<u>Strategy</u>
Our growth rate	12.5%	Invest to keep market supplied
Number of market segments served	4	Focus on keeping these while looking at other potential markets
Relative market share	2.1	Strive for higher share
Quality	Higher	Continue at level; improve if possible
Reputation	Higher	Enhance as share leader and experienced supplier
Customer's loyalty	Strong	Capitalize on quality, reputation, experience to gain larger customer base
Financial strength	= to competition	Improve asset management and margin performance
Capacity utilization	80%	Increase by expanding product mix
Costs of doing business	= to competition	Build in production improvements and cost reductions when expanding
Degree of differentiation	> than competition	Accentuate the distinguishing features

Competitiveness

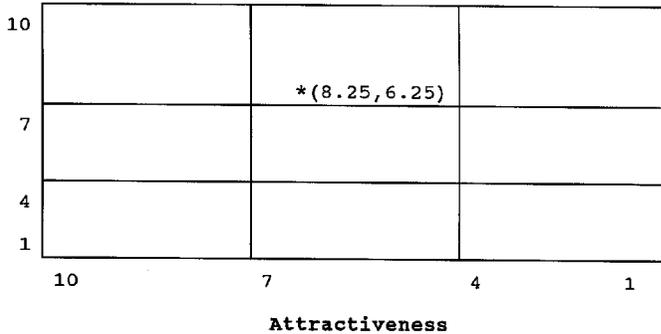


Figure 1. Strategy Position for Nursery Business

Business Strengths	High	↑ Premium--Invest for Growth	Selective--Invest for Growth	Protect/Refocus --Selectively Invest for Earnings
	Medium	↑ Challenge--Invest for Growth	Prime--Selectively Invest for Earnings	Restructure--Harvest or Divest
	Low	↑ Opportunistic--Selectively Invest for Earnings	Opportunistic--Preserve for Harvest	Harvest or Divest
		← High	← Medium	← Low
		Industry Attractiveness		

Figure 2. Strategic Options Based on Strategy Position

Patterns of Consumption of Landscape Plants by Georgia Households

Steven C. Turner
Georgia

Nature of Work: Georgia households have been surveyed since 1987 to determine their annual consumption(purchases) of landscape plants. This annual study of households has been used to develop profiles of a typical landscape plant purchaser(Turner, 1988). Use of household specific data to explore expenditures on nursery products is in contrast to other studies that have used aggregate national data(Gineo and Omamo). One valuable contribution from the Georgia studies is their continuous time characteristic that enables an examination of a consistent sample of landscape plant purchasers over time. The objectives were to: (1)determine overall purchase patterns from 1987 through 1992 and (2)determine purchase patterns at different types of retail outlets from 1988 through 1992.

A telephone survey was conducted in the fall of the years 1987-1992 by the Survey Research Center of the University of Georgia. This random survey of Georgia households yielded an average of 553 useable interviews over the last six years. The minimum number of respondents has been 521(1989) while the maximum has been 590(1992). Included in the questionnaire were questions about the level of landscape plant purchases, home ownership, and various other economic and demographic characteristics.

Since 1988, questions were asked about the type of retail outlet where the plants were purchased. Purchase and place of purchase are the focus of this report.

The percentage of households who purchased different (in dollars) amounts of landscape plants varied over the six year period(1987-92). The percentage of households purchasing no landscape plant appeared to be centered around 40%(table 1). There is some evidence that this no purchases percentage has a low-high characteristic. That is, if the percentage was low one year then the next year it will be high(with respect to 40%). The positive purchase categories are fairly consistent in the percentages over time. The \$1-50 category has an average percentage of 16.6, with no discernable pattern except a high-low characteristic opposite the no purchase low-high characteristic. The \$51-100 category exhibits an average percentage of 11.2, with little deviation. The \$101-500 category consistently has the largest percentage with an average of 21.1. Note that in 1991 and 1992 the \$101-500 percentage increased to 26.2 and 23.4, respectively. The other three categories have relatively low percentages but have experienced increases in 1991 and 1992.

Information on place of purchase was also determined(Table 2). Only households that purchased plants are included in the calculation of the percentages. The clear trend is the increasing percentages of people making a purchase from a mass merchandiser. Note the increasing percentage of 1-100% of purchases from 28.8 in 1988 to 42.8 in 1992. Also note the decreasing percentage of 0% of purchases at mass merchandisers(from 21.1% in 1988 to 14.7% in 1992). The primary explanations for these increases are low price and continued aggressive expansion by mass merchandiser into new locales. Also, more consumers are exposed to nursery plants here. The percentages of the large and local garden centers appear to be stable and in some years they appear to be gaining sales consistent with the industry's increased sales. This is consistent with findings of the National Gardening Association.

The results of this study provide some evidence on the increased household expenditures on landscape plants. There is also evidence that mass merchandisers are reaping larger percentages of these increased sales. This study examined only six years of data therefore the results presented should be augmented by future, additional years of data.

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Table 1. Consumption(Purchase) Patterns of Georgia Households for Landscape Plants (1987-1992).

Level	Year						Average
	1987	1988	1989	1990	1991	1992	
\$	-----Number of Households-----						
	(%)						
00	222 (42.0)	246 (45.6)	204 (39.2)	276 (47.5)	192 (34.2)	225 (38.1)	227.5 (41.1)
1-50	101 (19.2)	79 (14.6)	95 (18.2)	89 (15.3)	107 (19.1)	80 (13.6)	91.8 (16.6)
51-100	61 (11.6)	53 (9.8)	67 (12.9)	61 (10.5)	59 (10.5)	71 (12.0)	62.0 (11.2)
101-500	101 (19.2)	104 (19.3)	102 (19.6)	107 (18.4)	147 (26.2)	138 (23.4)	116.5 (21.1)
501-1000	21 (4.0)	25 (4.6)	18 (3.5)	12 (2.1)	20 (3.6)	22 (3.7)	19.6 (3.5)
1001-5000	10 (1.9)	13 (2.4)	14 (2.7)	13 (2.2)	19 (3.4)	27 (4.6)	16.0 (2.8)
> 5000	3 (0.6)	2 (0.4)	2 (0.4)	2 (0.3)	4 (0.7)	6 (1.0)	3.1 (0.5)
Other*	8 (1.6)	16 (2.9)	19 (3.7)	21 (3.6)	12 (2.4)	21 (3.5)	16.1 (2.9)
Total	527	540	521	581	561	590	553

*Includes did not know, no answer, and refused.

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Table 2. Place of Purchase of Landscape Plants for Georgia Households(1988-1992).

Year	% of Purchases	Type of Retail Outlet		
		Mass Merchandise	Large Garden Center	Local Garden
		----- % of Households -----		
1988	0	21.1	27.6	28.0
	1-100 (100)	28.8 (7.8)	21.8 (5.6)	21.4 (7.0)
1989	0	23.8	32.6	31.9
	1-100 (100)	32.4 (9.0)	23.4 (5.8)	24.3 (9.6)
1990	0	20.5	33.4	30.6
	1-100 (100)	30.4 (8.6)	18.4 (5.9)	21.2 (5.5)
1991	0	24.6	35.1	34.0
	1-100 (100)	37.8 (10.3)	28.0 (7.0)	28.9 (8.6)
1992	0	14.7	30.7	36.3
	1-100 (100)	42.8 (13.1)	27.1 (5.6)	21.3 (3.9)

Marketing Channels Used by Wholesale Ornamental Nurseries

Roger A. Hinson and Steven C. Turner
Louisiana and Georgia

Nature of Work: The marketing channel is the path taken by a product as it moves from producer to consumer. Alternative channels available to producers of ornamental plants include direct sales to consumers and various wholesale market channels. In this study, the focus was on marketing channels used by wholesale nurseries with the objective of developing a "typical nurseryman" profile to explain market channel choice.

Results and Discussion: To identify and describe marketing practices of wholesale nurseries, a survey instrument developed by researchers in 23 states was used to collect marketing practice information. Conducted by mail in early 1989, a total of 1302 useable responses were received. Further detail about procedures, assumptions and respondent description is provided in Brooker and Turner(l).

Market channel choice could be expected to be influenced by factors such as firm age and size, propensity to negotiate, diversification strategies, organizational structure, competitive pressures, and location of the nursery.

Information about market channel use was itemized by the respondent through allocation of total sales as a proportion among retail type sales (to the final consumer) and sales through alternative wholesale channels(to retailers, re-wholesalers, and landscapers). Given the nature of these measurements(values between 0 and 100), a tobit estimation procedure was chosen from the family of limited dependent variable models(2). The tobit model estimates coefficients for the explanatory variables, and standard t-tests are used to evaluate significance. Using the estimated coefficients, a profile of the nurseryman whose percentage of sales through a particular marketing channel was a higher or lower was developed.

The tobit model used was of the general form

$$\text{MKTCHAN} = f(\text{AGE}, \text{GSALES}, \text{NEG}, \text{NUMTM}, \text{CORP}, \text{COMPET}, \text{NORTHE}, \text{SOUTHE}, \text{WEST}),$$

where MKTCHAN represented the percentage of gross sales through a particular marketing channel. Three wholesale channels were considered; to retail, to rewholesalers, and to landscapers. The retail channel(direct

from producer to consumer) was the fourth channel analyzed. Descriptions means standard deviations and measurements of the explanatory variables are presented in Table I.

Regional differences were included as dummy variables - estimated coefficients indicated differences from the base (a group of states in the midwest and middle south, defined in Table I).

Descriptive statistics from the survey are provided (Table I). The average age nursery was 21 years old with sales of \$876,000. Respondents indicated that an average of almost 43% of sales were negotiated and discounted from list price. Within the shares of wholesale sales going to alternative wholesale channels, a higher percentage went through landscapers than through retailers or rewholesalers. About 42% of firms were incorporated. About 36% of respondents indicated that degree of competition was one of the most important constraints on firm expansion. The number of respondents from each region was fairly even across the north, middle and south, but was lower in the west.

Alternative models (different dependent variables) provide evidence about firm characteristics that are significantly related to market channel use. In the following discussion, a typical respondent profile is developed based on each model's significant explanatory variables.

(1) **WHOLESALE SALES TO RETAILERS:** In this model, NUMTM, NORTH-EAST, SOUTHEAST, AND WEST were significant and directly related to changes in the proportion of wholesale sales to retailers, while NEG was significant and inversely related. The other variables did not statistically influence changes in the dependent variable. The results indicate that a firm with a higher proportion of sales to retailers used a higher number of transaction methods, and was located in the northeast, southeast, and west as opposed to the group of midwestern and upper south states used as the base. The higher percentages of wholesale sales to retailers also was associated with a lower level of price negotiation (higher proportion of sales not discounted from list price).

(2) **WHOLESALE SALES TO LANDSCAPERS:** In this profile, a firm with a higher proportion of wholesale sales to landscapers was associated with incorporated firms with a lower level of price negotiation. Firms located in the southeast and in the west were more likely to have lower percentages of sales to landscapers than those in the base states.

(3) **WHOLESALE SALES TO REWHOLESALEERS:** A firm with a higher proportion of wholesale sales to rewholesalers occurred in association with a higher level of price negotiation, and with firms who identified competition as a limiting factor to firm growth. Compared to the base states, southeast-

ern and western firms had higher proportion of sales to rewholesalers , while northeastern firms had lower proportion of sales to rewholesalers.

(4) RETAIL SALES: A firm with a higher proportion of retail sales was more likely to identify competition as a limiting factor to growth, have lower gross sales, a lower proportion of negotiated sales, and fewer transactions methods. A firm located in the southeast or west had significantly lower proportion of retail sales than the base states.

Firm characteristics consistently important in explaining changes in proportion of sales across market channels included percentages of sales negotiated, and the number of trade methods used. Regional differences from the base group of states was also important, particularly for the southeast and west, while the northeast was different only for the wholesale sales to retailers and wholesale sales to rewholesalers models. The factor indicating whether the firm thought competition was the most important factor limiting expansion was significant in the wholesale sales to rewholesalers and the retail sales models.

Significance to the Nursery Industry: This study investigated the different marketing channels utilized by ornamental plant producers. The results of this study indicate that the choice of which marketing channel(s) to utilize are primarily influenced by willingness to negotiate, number of transaction methods used, competitive pressures, and the region of the country where the nursery is located. Other secondary influences include size as measured by gross sales, and organizational structure as measured by incorporation. The profiles developed from this study could be used by current producers to evaluate their present market channel situation.

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2. Madalla, G.S. 1983. Limited-Dependent and Qualitative Variables in Econometrics. Cambridge University Press: Cambridge.

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Table 1. Landscape Plant Producers and Factors Hypothesized to Influence Market Channel Use, 1988.

Variable	Description	Measurement	Mean	Standard Deviation
NEG	% of Sales Negotiated	% (0-100)	42.58	41.46
AGE	Age of Firm	Years	21.52	33.30
GSALES	Gross Sales of Firm	\$	876,080	2,507,800
RETAIL	% of Wholesale Sales to Retail	% (0-100)	23.91	35.41
WRET	% of Wholesale Sales to Retail	% (0-100)	28.33	30.23
WREW	% of Wholesale Sales to Re-Wholesalers	% (0-100)	24.23	30.44
WLANDS	% of Wholesale Sales to Landscapers	% (0-100)	37.83	34.90
COR	Firm is Incorporated	0 - No 1 - Yes	.42	0.49
COMPET	Competition cited as Limiting Expansion Potential	0 - No 1 - Yes	.36	0.48
NORTHE	Firm is Located in CN, DE, NY, NJ, ME, or PA	0 - No 1 - Yes	.25	0.43
SOUTHE	Firm is Located in AL, GA, MS, SC, LA, or FL	0 - No 1 - Yes	.32	0.46
MIDDLE	Firm is Located in KY, MI, OH, OK, IL, TN, or AR	0 - No 1 - Yes	.27	0.44
WEST	Firm is located in AZ, CA, or OR	0 - No 1 - Yes	.16	0.36

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Table 2. Tobit Parameter Estimates For Market Channels Models.

Factor	Wholesale Sales to			Retail Sales
	Retailers	Landscapers	Re-wholesalers	
	-----Parameter Estimates-----			
	(Student t-values)			
INTERCEPT	.0432490 (.010)	44.6236* (9.514)	-17.5556* (-3.650)	61.7047* (9.152)
AGE	.0000200195 (.001)	-.0249248 (-.644)	.0278015 (.738)	.0807416 (1.372)
GSALES	.000000693012 (1.474)	-.000000452440 (-.860)	-.000000162760 (-.321)	-.00000652041* (-3.881)
NEG	-.0620800* (-2.175)	-.0925039* (-2.941)	.125558* (3.993)	-.105837* (-2.307)
NUMTM	8.09605* (5.647)	-2.29416 (-1.452)	11.7659* (7.456)	-21.0156* (-8.792)
CORP	-3.89311 (1.557)	14.5887* (5.283)	-1.65262 (-.602)	-.758498 (-1.183)
COMPET	2.29409 (.949)	-1.78413 (-.667)	4.73943* (-1.779)	7.41434* (1.893)
NORTHE	7.79685* (2.400)	-5.01033 (-1.403)	-7.58158* (-2.093)	5.86430 (1.159)
SOUTHE	6.63296* (2.187)	-6.77162* (-2.033)	5.86616* (1.773)	-21.1471* (-4.291)
WEST	12.7513* (3.468)	-18.8089* (-4.596)	13.3720* (3.340)	-23.4106* (-3.803)

* Significant at the .10 level