SECTION 11
MARKETING

Dr. M.P. "Mel" Garber
Section Chairman and Moderator

Industry Trade Shows as Marketing Tools

John J. Haydu and Alan W. Meerow
Florida

Nature of Work: For several decades now trade shows have been used by nurserymen as a major vehicle for promoting ornamental plant products. But as the number of local, regional, and national shows continues to escalate, and as costs of setting up these shows increase annually, trade committees and exhibitors are beginning to question both their efficacy and purpose. Interestingly, despite the heavy reliance on trade shows to expand markets, to date no effort has been made to evaluate them from a buyers' perspective. The few surveys that have been conducted focused entirely on exhibitors themselves rather than customers (Haydu et al. 1991). The purpose of this study was to focus on buyers as the target population and determine such basic information as: (1) the business profile of attendees, (2) how frequently buyers attend trade exhibits, (3) how much customers typically spend, (4) why buyers attend trade shows and, (5) what steps or actions can be taken to improve the shows.

Just over nine-hundred people registered as buyers for the Tropical Plant Industry Exhibition (TPIE) in January 1991. The survey was designed to minimize statistical aberrations in the study population (Dillman, 1989). In order to reduce the possibility of sampling error, a computerized random numbers generator was used to select 500 people as the sample of buyers surveyed. Additionally, over half (55 percent) of the total population was sampled to avoid "noncoverage error." Finally, by ensuring that a high percentage of the sample population returned the questionnaires, the chance of error from respondents being different from nonrespondents (response rate error) was minimized. Consequently, three separate mailings were sent to the targeted buyers. From the 500 questionnaires sent, 17 were disqualified from the list because of inaccurate mailing addresses. Of the remaining 483 buyers, 330 were returned after the third mailing for a total response rate of 64 percent.

The questionnaire was designed in "closed-end" form to facilitate data compilation and analysis. The primary classification variable was size of business, differentiated by annual gross sales with size distributed among small (< $100 thousand), medium ($100-$500 thousand), moderately large ($500 thousand-$1 million), and large > $1 million) firms. Frequency distributions and cross-tabulations were conducted as well as tests of significance using PC-SAS (Sas Institute, Cary, NC).

Results and Discussion: Respondents grouped themselves into 7 business categories with wholesalers and interiorscapers comprising nearly three-quarters of all attendees. Specifically, the buyer profile was distributed in the following manner: wholesaler (37%), interiorscape (33%), retail

(13%), broker (8%), florist (4%), input supplier (3%), and mass merchandiser (2%).

Most respondents attended fewer than two shows annually whether in (79%) or outside Florida (72%). Nearly 20 percent attended between three and four shows regardless of whether it was in or outside the state . Less than nine percent attended more than five shows annually. Although exhibit attendance was not affected by size of operation for shows held in Florida, a correlation was found for shows held outside the state ($P > 0.5$). This is probably due to the additional costs associated with long distance travel and that larger businesses may have more funds available for travel.

Eighty-two percent of respondents claimed they had made some level of purchase, although nearly three-quarters (74%) of attendees purchased less than $5,000 worth of material. This result is interesting given that only 7 percent of buyers claimed “making purchases” as a reason for attending the show. Ten percent of attendees bought between $5-$10 thousand and nearly 16% spent over $10,000. Although reasons for attending the show were not related to size of operation (Table 1) the value of purchases were correlated strongly with firm size ($P>0.01$).

Buyers did not consider making purchases at the show the primary reason for attending. Rather the two greatest incentives for attending were finding out what new plant material was available (59%) and making business contacts (25%). To the extent consumers associate “new” with “better,” this result may not be surprising. From a buyers’ point of view, an effective marketing tool is to promote ones business by carrying the most recent products. In the same vein, identifying the firms who carry these products (making business contacts) is the second part of this market strategy. Finally, ranking far down in importance were making purchases (7%), attending social events (6%) and seminars (3%).

When respondents were asked whether or not there were too many trade shows, nearly three-quarters replied there were not. However, when analyzed by firm size, smaller businesses generally agreed that there were not too many shows (90%), whereas larger producers disagreed. In fact, 40 percent of the firms in the largest size category felt that too many shows were being held each year. This correlation between firm size and the number of shows attended was highly significant ($P > 0.01$).

Related to this question, information was sought on how trade shows could be improved. The suggestion cited most by buyers was that more educational programs were needed (38%). he second most cited category was that no improvement was necessary (34%). The remaining choices were not considered important by the majority of respondents— 10 percent felt the location could be improved, 8 percent indicated that better displays were needed, 6 percent wanted the trade exhibit open to the public, and only 4 percent felt that the time of year should be changed.

Significance to Industr y: To be effective, horticulture industry trade shows must effectively target the market segments for their products and attract them in sufficient numbers to warrant the expense of staging a trade exposition. The retail and mass merchandising segments of the industry do not seem to be attending TPIE in high enough numbers. Advertising and promotion may need to be directed more effectively at prospective buyers in these market categories. While 38% of the sample indicated that the show could best be improved with more educational programs, only 3% of those surveyed listed those same programs as the main reason for attending TPIE. This curious inconsistency suggests that the educational programs may not be designed to appeal to the widest spectrum of buyers, and greater attention in the future towards determining precisely what types of educational presentations are desired may be warranted. Given the great interest in new products expressed by the survey respondents, higher visibility should be afforded new plant introductions at future expositions.

Table 1. Relationship between size of operation and dollar amount purchased at the Tropical Plant Industry Exhibition.

SIZE OF BUSINESS	THOUSANDS OF DOLLARS PURCHASED > $1	$1 - $5	$5 - $10	< $10	Total
	Number Buyers per Category				
Small	41	8	0	0	49
Medium	38	37	9	4	88
Moderately Large	16	13	8	6	43
Large	7	24	9	30	70
Column Total	102	82	26	40	250

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Floriculture Corps as a Source of Diversification and Enhancement of Incomes on Small Farms

Surendra Singh, Sam Osawaru, and Fisseha Tegegne
Tennessee

Nature of Work: The most critical problem confronting low-income farmers today is the need to maintain an adequate level of net income. A farm generating less than $20,000 worth of gross sales would be expected to have a net income of less than $7,500. This is below the poverty level income for a family of four and less than 50 percent of the median family income in the U.S. To combat this problem, diversification with high value specialty crops and animal enterprises are often suggested. The majority (84 percent) of the farms in Tennessee for example are considered small, and consequently need help in improving income levels.

Diversification into alternative enterprises appears to be gaining popularity. Diversification in this context may be defined as the production of a non-traditional enterprise in an area or on a farm. The non-traditional activities could be new crops which have not been grown traditionally in the area before (1). The production of floriculture crops (mums, Poinsettias, Carnations, and etc.) in commercial quantities may be considered as an alternative marketing opportunity, for raising incomes on small farms. Tennessee's commercial floriculture industry reported a total sale of 20.8 million in 1991, a 2% increase from 1990's value of 20.4 million (2). Consumer's demand is allowing domestic producers, importers, wholesalers, and retailers to expand and diversify into markets for potted flowering plants, cut flowers, and other greenhouse products.

Results and Discussions: Garden Chrysanthemum (mum) is presented here as an alternative crop for small farmers who live near a large city. General information regarding pre-planting through harvesting is not provided. Prospective growers may consult local agricultural extension agents or area horticultural specialists to provide them with valuable growing methods and marketing ideas. An assessment of the market area will help growers to determine the demand for mums and the best method for marketing the crop. Garden mums may be marketed as a wholesale crop, sold to retailers or commercial landscapers. Retailers or commercial landscapers may use the mums for fall or summer color plantings or as a dig-your-own operation in which customers come directly to the location, select, and dig their own plants.

Estimated costs and returns for growing a one acre crop of garden chrysanthemums are given in Table 1. The accounting approach of budgeting is applied. The Summer of 1992 prices of inputs in Middle Tennessee were used to estimate costs and returns. These estimates should be used as a guide only. 'Furthermore, the assumptions are made

that the grower owns the land near a city, that, there are existing irrigation facilities and that transportation is available. Also, it is assumed that custom services for soil preparation are available and that manpower is available and at reasonable rates.

Table 1. Estimated Costs and Returns from Field Grown Garden Chrysanthumums, Per Acre, Near Nashville, Tennessee, 1992

Expenses	Unit Price	($)	Quantity	Amount($)
Soil Preparation (Custom)	Per		Acre	200.00
Fertilizer and Lime				250.00
Soil Test				5.00
Rooted Mum Cuttings	Each	0.25	12,000	3,000.00
Labels (Color & Variety I.D.)		0.30	100	30.00
Laborl - Planting	Hr.	5.00	60	300.00
Hoeing[2] (2 times)	Hr.	5.00	60	300.00
Digging Plants[3]	Hr.	5.00	60	600.00
Irrigation[4]				
Fiber Pots (8" X 8")	Each	0.45	11,000[5]	4,950.00
Transportation				125.00
Cultivate or rototill (twice)	Hr.	5.00	60	300.00
TOTAL EXPENSES				$10,060.00
RETURNS				
Gross Returns When:[6]				
Sold @$2.00 per plant			11,000	22,000.00
Sold @ $3.00 per plant			11,000	33,000.00
Net Returns When:[6]				
Sold @ $2.00 per plant			11,000	11,940.00
Sold @ $3.00 per plant			11,000	22,940.00

[1]200 Cuttings/Hr.
[2]30 Hrs. Each Time.
[3]100 Plants/Hr.
[4]As Needed (Could Increase Production Cost)
[5]About 8% Loss Estimated (About 92% Harvested)
[6]Most Common Prices in 1992 (Prices May Vary Due To Various Reasons).

Significance To The Industry: With increasing population, higher disposable incomes and changing lifestyles, the demand for nursery products seem to be increasing. Floriculture crops have a good potential for becoming an alternative enterprise for supplementing income on small

scale farm/nursery crop operation. Some of these crops provide quick turnover and ready cash. Growers can plant and sell these crops while waiting for their "traditional plants" to grow to a marketable size, and then use the money earned to make necessary improvements in the business.

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An All Year Sales Strategy to Promote "Fall is for Planting"

E. Neal Weatherly, Jr. and James T. Midcap
Georgia

Nature of Work: Marketing has become a dominant theme in the nursery industry. Because of current economic stress in the industry and because of the ever broadening selection of plant materials available to the gardening public, greater emphasis on marketing and marketing strategies must be a part of all successful nursery-related enterprises.

One such industry marketing effort has been the Fall is for Planting campaign. Announced in 1982[1] this program which has met with encouraging results, to date has not yet realized its full potential[2]. This campaign is now under the aegis of the Garden Council which is reorganizing and refocusing this sales endeavor so that its full potential can be realized.

As is well understood, the intention of Fall is for Planting was and still is to inform the gardening public of the benefits of fall planting, hopefully shifting more of the buying public's planting emphasis to the fall, thus reducing some of the intensity of the spring season. Our hypothesis as to why spring remains the traditional planting season, in the general public's mind has to do with the psychological messages Mother Nature gives us about spring - the miracle of flowers bursting into bright and long anticipated color, the emanating of the cool, crisp colors of new foliage and the warming weather that encourages even couch potatoes to spend time outdoors.

Spring is in many ways considered a beginning - a time to start. On the other hand, fall, which follows on the heels of Dog Days of Summer, is often a hot, dry, dusty time of the year which tends to discourage outdoor activity. Psychologically, most of us have come to consider the fall season as a time for winding down. It is harvest time, a season of spectator and sedentary sports for most adults, and fashion wise the clothes are heavier, bulkier, and more often than not of muted tones - all implying cold weather and a time to be inside. Even the landscape is dominated by this same message. The eye catching landscape colors are the leaves of the deciduous trees: yellows, oranges, reds and purple. Even at their peak these trees garbed in glowing colors are but a spectacular prelude to their assuming a very definite bare state of dormancy. In the lower south this message is heightened as the leaves turn brown and the warm season grasses follow suit.

The tasks of fall-raking leaves, storing the lawn equipment, etc. sends the psyche further messages that this is not a time to get into gardening. The local retailers and landscapers in step with the efforts of the Garden Council are definitely up against an environment where the potential customer is surrounded by numerous psychological messages that tell him or her "Don't Plant!"

While it would be a gross over statement to simply say that people are going to choose spring as a time for planting over the fall because spring is the planting season, there must be a degree of validity in our basic assumption.

Results and Discussion: If a national campaign such as.Fall is for Planting is only partially successful what can the local retailer or landscape contractor hope to accomplish on their own? Fall tree sales have worked for a number of firms especially when a large selection is available and prices are attractive. But this features a narrow line of product - high ticket but narrow. A few firms have promoted fall sales around blooming materials eventually enjoying positive results but their featured blooming material was of a narrow range usually one plant like crape myrtle[3].

Experience tells us that people usually respond to certain circumstances in predictable patterns. Almost every nurseryman has an experience with a block of plants blooming exceptionally late or exceptionally well in the late summer or early fall. Predictably this created an unusually strong demand for a season.

Is there a message for us now? Don't buy anything until it is in bloom? No, the underlying message is more optimistic, we believe. Even in the fall of the year, even with all of the subtle negative messages of Mother Nature, people can be stirred to buy and plant.

Messages and information about planting in the fall enabling plants to become well established and thus growing through the summer with less trauma from the dry weather appeals to the logic of the customer but does not stir his or her emotions. Plants in bloom in July, August and September can and will stir their emotions[3].

Our feeling is that selling the idea of traditional applications of fall color, mainly the turning of the leaves, is not going to stir up sales during the fall season. Having things in locations of high visibility would stir up sales.

Significance to Industry: To have plants in bloom in the community is going to require some effort and planning on the part of the landscape contractor and local retail nurseryman. First, the plant selection will have to be broader than the traditional fall plant palette of camellia, sasanqua, garden mums and the aforementioned crape myrtle. Second, plantings need to be established in strategic locations to maximize their exposure to the buying public. Thirdly, these entrepreneurs will have to subtly promote fall blooming material at all seasons by attempting to include new fall flowering plants in all situations that have high visibility.

If the retailer and landscaper agree with this premise then their stocking patterns must be expanded to include a broader range of fall blooming plants from bulbs to flowering trees. We have developed a representative plant list for consideration. Plant groups listed include bulbs, perennials, deciduous shrubs and flowering trees, as well as fall blooming broadleaf evergreen shrubs.

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PLANT MATERIAL FOR LATE SEASON INTEREST[4'5]

Plants	Hardiness Zone	Exposure	Flower Color	Bloom Time
TREES:				
Arbutus unedo	7 to 9	Sun to Shade	White to Lt. Pink	Oct-Nov
Evodia daniellii	4 to 8	Full Sun	Showy White	June-Aug
Franklinia alatamaha	5 to 8	Sun to P-shade	White	July-Aug
Koelreuteria bipinnata	8 to 9	Full Sun	Yellow Panicles	Aug-Sept
Oxydendrum arboreum	5 to 9	Sun to P-shade	White Racemes	June-July
Prunus subhirtella autumnalis	4 to 8	Sun to P-shade	Pink	Fall
Sophora japonica	4 to 8	Full Sun	Creamy White	July-Aug
SHRUBS:				
Abelia grandiflora	6 to 9	Sun to P-shade	Pinkish White	June to Frost
Aralia spinosa	4to 9	Sun to P-shade	White	July-Sept
Baccharis halimifolia	5 to 9	Sun to L.Shade	*White	Sum to E. Fall
Buddleia davidii	5 to 9	Full Sun	Purple to White	June to Frost
Camellia oleifera	7 to 9	Sun to P-shade	White	Oct-Jan
Cephalanthus occidentalis	5 to 10	Sun	Creamy White	August
Clerodendron trichotomum	6 to 9	Full Sun	White	June to Fall
Clethra alnifolia	3 to 9	Sun to Shade	White, Fragrant	July-Aug
Clethra acuminata	5 to 8	Sun to P-shade	White, Fragrant	July
Elliottia racemosa	5 to 8	Sun	White	June-July
Fatsia japonica	8 to 10	Shade	White	Oct-Nov
Hamamelis virginiana	3 to 8	Sun to Shade	Yellow, Fragrant	Oct-Dec
Hibiscus syriacus	5 to 8	Sun to P-shade	Purple,Red,White	July-Sept
Hydrangea macrophylla	6 to 9	Sun to P-shade	Pink or Blue	June-Aug
Hydrangea paniculata 'Grandiflora'	3 to 8	Sun to P-shade	Whi Fades to Pk.	July-Aug
Lantana camara	8 to 10	Sun	Or, Yel, Pur	June-Frost
Miscanthus sinensis 'Gracillimus'	4 to 9	Sun	Pinkish	July-Nov
Rhododendron arborescens		4 to 7	P-shade	White to Lt Pink
May-June-				July

*Actually silky hairs of pistallate flowers (like dandelion).

Plants	Hardiness Zone	Exposure	Flower Color	Bloom Time
Rhododendron prunifloium	5 to 9	P-shade	Or Red to Red	July-Aug
Rhododendron serrulatum	7 to 8	P-shade	White to Lt Pink	June-July
Rhus copallina	4 to 9	Sun to P-shade	Greenish Yellow	July-Aug
Viburnum macrocephalum	6 to 9	Sun to P-shade	White	Oct-Nov-May-June
Vitex agnus-castus	7 to 8	Sun	Blue,Pink,White	June-Sept
VINES:				
Clematis maximowicziana	5 to 8	Sun to Shade	White	Aug-Oct
Clematis virginiana	4 to 8	Sun to P-shade	White	July-$ept
Gelsemium rankinii	7 to 9	Sun to P-shade	Yellow	Oct-Nov
PERENNIALS:				
Anemone vitifolia	5 to 8	Sun to P-shade	White, Pink	Aug-Oct
Aster x frikartii	5 to 8	Sun	Lavender	June-July
Astertataricus	4 to 8	Sun	Blue	Sept-Nov
Boltonia asteroides ‘*Snowbank’*	4 to 9	Sun	White	Aug-Sept
Colchicum autumnale	4 to 7	Sun	Purple, White	Fall
Crocus speciosus	5 to 9	Sun	Blue	Fall
Cyclamen hederifolium	5 to 9	P-shade	Pink, White	Fall
Heliantus angustifolia	*6 to 9*	*Sun*	*Yellow*	*Fall*
Iris Bearded hybrids cultivars that rebloom in Fall ‘Desiderata’, ‘Goldburst’,’Victoria Falls’, “Peach Reprise’, ‘White Reprise’	5 to 9	Sun	Blue, Yellow, Peach, Pink	October November and May
Lycoris radiata	8 to 10	Sun	Red	Sept-Oct
Sedum ‘Autumn Joy’	3 to 10	Sun	Pink	July-Aug
Solidago spp.	4 to 9	Sun	Yellow	Aug-Oct
Sternbergia lutea	6 to 7	Sun	Yellow	Sept

Factors Limiting the Expansion of Environmental Plant Nurseries: A Comparison Across 23 States

John R. Brooker (TN), Steve Turner (GA), and Roger Hinson (LA)

Cash receipts for environmental plants in the United States increased 35% from $3.9 billion in 1984 to $5.3 billion in 1988 (Johnson). This type of growth in cash receipts has permitted the environmental plant industry in some states to expand at a spectacular rate. For instance, sales in OK increased 446% between 1984 and 1988. Among the 23 states covered in this paper, four states besides OK had percentage increases exceeding 100 - DL, KY, MA, and SC. Three states, AZ, OH, and TN, had negative percentages of -4, -16, and-20, respectively.

Assuming the 1984 to 1988 adjustment has not been reversed, growers in the negative- and slower-growth states may be experiencing certain unique problems. If those problems can be identified, then researchers, extension workers, and other public or private decision-makers will be in a better position to offer solutions. Also, additional insight regarding the basic conditions underlying the structure of the environmental plant industry aids in efforts to prioritize future research.

Source of Data and Procedure: Survey data were obtained from nurserymen in 23 states (Brooker and Turner), accounted for 78% of total U.S. value of industry cash receipts in 1988. The two survey questions examined in this paper are: (1) What do you see as the greatest limitation in terms of expanding the geographic scope of your trading area?, and (2) Identify the five factors that most limit the expansion potential of your firm. The first question was open-ended and generated a wide assortment of responses, which were grouped into five major areas - capital, marketing, personnel, production, and transportation. For the second question, ten possible choices were presented to the respondent.

For comparison of responses, firms were sorted by state, by size, and by geographic region. The five size categories range from firms with less than $100,000 to firms with $5,000,000 or more in annual sales. The four geographic groupings were: (1) south - AL, AK, FL, GA, KY, LA, MS, NC, OK, SC, and TN, (2) west - AZ, CA, and OR, (3) north - CN, DE, MA, NJ, NY, and PA, and (4) midwest - IL, MI, and OH.

Results and Discussion: The most frequently identified factor limiting geographic expansion of the trading area was personnel, which was foremost in nine states and exceeded 50% in AR and DE.[1] Personnel included responses regarding ability/competence of the management, labor supply, labor quality, time, owner's age and/or interest in expansion. Personnel was an important factor in both expansion and contraction states. It was the lead problem area identified by 38% of respondents in OK,

the highest percentage growth-rate state between 1984 and 1988, and in two of the negative-growth states, AZ (26%) and TN (29%).

Transportation was identified as the number one problem area by nurserymen in 7 states. In OH, one of the negative-growth states, 39% of the nurserymen reported this factor as the most limiting. Production related issues closely followed transportation as nurserymen in 6 states indicated this was the most limiting factor. Capital was the most limiting factor in 3 states, KY, LA, and MA. The only factor not noted as being the most important constraint in any state was marketing.

Grouping the nurseries by size revealed that while personnel was the most frequently identified limiting factor when examined state by state, it was a small-sized nursery issue (Table 1). Transportation was foremost for the other four size groups. Moving from smallest to largest, transportation and production became more important, while personnel and capital became less important. Marketing response showed little trend.

Comparison of response by region revealed a fairly consistent distribution (Table 2). Transportation was slightly more important to nurserymen in the midwest. Personnel was first in the south and north and production first in the west. Notably, capital and marketing were perceived as the foremost problem by less than a fifth of the nurserymen in each region.

Ten possible responses that limit “overall expansion potential” were identified, and nurserymen were asked to rank the top five.[2] Labor was ranked first, or tied for first, in 16 states. Capital was ranked first in five states, second in eight, and third in nine. In other words, only one state did not rank capital among the top three factors limiting expansion, TN. Market demand was ranked first in four states, second in three, and third in four. Environmental regulations and own-management were the only factors not ranked in the top three by any state. TN was the only state to rank water in the top three. Two states, AL and TN, ranked weather uncertainty among the top three.

With respect to firm size, capital was ranked first most frequently for all sizes, though its importance declined slightly as firm size increased (Table 3). The ability to hire and/or develop competent management increased in importance as firm size increased, from 4% to 15%. Notably, the nurserymen’s own management was identified as the number one limiting factor about 10% of the time for all nursery sizes.

Grouping by region revealed that capital was reported as the number one factor limiting overall expansion potential in all regions ~Table 4). Land was second in the west, north, and midwest. Market demand was second in the south and third in the west. Labor was third in the south and north, while own-management was third in the midwest.

Closing Comments: Responses identifying and comparing problems and limiting factors by state, region, and size, were consistent, though some differences were observed with respect to size and region. Perhaps the biggest surprise was the infrequency with which competition, weather, and environmental regulations were identified as a problem. Market demand was ranked as the number one problem in four states, but these states ranged in growth percentages between 1984 and 1988 from -4.4% in AZ to + 446% in OK. Marketing as a limitation to geographic expansion of trading area was not ranked first by any state, but was ranked second in six states. Interesting that this group of six states included two of the top growth states, DE and OK, and none of the negative growth states. These results seem to suggest that the perspective of the nurserymen regarding what encompasses a marketing limitaion and/or market demand problem may vary among states. This issue should be addressed in more detail in the next survey.

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Table 1. Limitations to expansion of geographic scope of trading area, by firm size

Limitation	Firm Size				
	Less than $100,000 (n = 524)	$100 000-$499,999 (n = 440)	$500,000-$999,999 (n = 176)	$1,000,000-$4,999,999 (n = 235)	$5,000,000 or more (n = 44)
	percent				
Capital	22.3	11.1	9.4	14.2	3.0
Marketing	20.2	14.3	12.6	10.9	15.2
Personnel	30.8	23.5	22.0	14.7	9.1
Production	14.2	23.2	21.3	29.0	33.3
Transportation	12.5	27.9	34.7	31.2	39.4
Total	100.0	100.0	100.0	100.0	100.0

Table 2. Limitations to expansion of geographic scope of trading area, by regions

Limitation	Region			
	South	West	North	Midwest
	percent			
Capital	14.3	19.7	15.8	11.3
Marketing	19.6	11.4	15.8	10.1
Personnel	26.0	19.2	26.5	20.1
Production	17.8	25.4	19.7	27.0
Transportation	22.3	24.3	22.6	31.5
Total	100.0	100.0	100.0	100.0

Table 3. Factors limiting overall expansion potential, by firm size

Factor	Firm Size				
	Less than $100,000	$100,000 - $499,999	$500,000 - $999,999	$1,000,000 - $4,999,999	$5,000,000 or more
	percent				
Capital	28.4	25.6	22.4	21.9	20.5
Land	16.8	14.7	17.8	18.2	15.4
Market demand	15.2	11.4	14.5	16.7	17.9
Labor	10.2	15.2	15.8	13.0	15.4
Own management	10.6	9.4	10.5	10.2	10.2
Ability to hire/develop competent management	4.4	8.3	9.8	10.2	15.4
Water supply	6.5	7.6	5.3	2.3	2.6
Competition	2.8	4.8	3.3	4.2	2.6
Weather uncertainty	4.4	1.5	0.6	2.3	0.0
Environmental regulations	0.7	1.5	0.0	0.9	0.0
Total	100. 0	100.0	100.0	100.0	100.0

Table 4. Factors limiting overall expansion potential, by region

Factor	Region			
	South	West	North	Midwest
			percent	
Capital	24.7	30.7	22.7	25.1
Land	11.9	22.8	19.7	18.0
Market demand	17.1	17.2	8.6	10.7
Labor	14.2	4.2	18.6	12.3
Own management	9.2	9.3	10.0	13.8
Ability to hire/develop competent management	6.7	4.2	8.9	12.8
Water supply	7.0	5.6	6.3	2.1
Competition	5.1	4.2	2.2	1.5
Weather uncertainty	3.4	0.9	1.1	1.0
Environmental regulations	0.7	0.9	1.1	1.0
Total	100.0	100.0	100.0	100.0

[1]individual state percentages omitted because of space.

[2]A simple weighted average was calculated to generate an index value to permit comparisons among states.

Enhanced Marketing Techniques for Nurserymen

M. P. Garber
Georgia

Nature of work: Most nursery products are marketed through either the retail channel or the landscape channel. Nurserymen that market to the landscape trade will generally deal with the landscape contractor, or rewholesalers who in turn sell to landscape contractors. The marketing efforts are usually focused on these immediate customers. The purchasing decision of the customer (landscape contractor or rewholesaler) can be influenced by other groups. A market research program initiated at the University of Georgia focuses on one such group in the landscape industry, landscape architects (Garber, 1991). Landscape architects are in a position to influence which plant varieties are requested because their customers usually delegate the decision on which plants to install. After the project is designed and plants specified, it is usually turned over to a landscape contractor who has responsibility for the purchase and installation of plant material. Landscape architects are also one of the first to know about future demands since they can specify projects several months in advance of plant purchase.

A survey of Georgia landscape architects determined the value of plants specified by landscape architects at $85M (Garber and Bondari, 1992[a]). This compares to the $200M estimate for the value of nursery stock produced in-state (Brooker and Turner, 1990). Of particular interest to nurserymen is the finding that 60% of the landscape architectural firms determine or recommend the production nursery where the landscape contractor obtains plants (Garber and Bondari, 1992[b]). The results suggest that nurserymen could benefit directly by marketing to landscape architects. To assist growers in their marketing efforts directed to landscape architects, Georgia landscape architects were asked to "identify up to three ways that the plant producer could help you supply better products and services".

Results and Discussions: The six categories of assistance identified by landscape architects (Table 1) were related primarily to plant availability information, correct use of plant material, and meeting plant specifications. The specific opportunities for growers and the percentage of landscape architectural firms listing each, are (1) provide regular, frequent plant availability (32%), (2) develop new varieties for specific landscape need (21.3%), (3) supply plants that meet specified sizes (20.0%), (4) recommend plants for special conditions(12.0), (5) provide pictures/drawings of plants (9.3%), and (6) presentations to landscape architects (5.3%). If nurserymen address these needs, they should enhance the likelihood of their plant varieties being specified by landscape architects and sourced from their nursery. Based on the data in Table 1 and the numerous written suggestions in the survey, nurserymen should consider several actions;

including, (1) start sending your nursery catalogs and a regular update of plant availability to landscape architectural firms in the cities where you market plants. The availability should include plant size (not just container size) and price. (2) identify landscape conditions where your plants perform best e.g. wet sites, dry sites, sun, shade, etc. You might consider grouping plants according to landscape use when you organize the plant availability. Although landscape architects might determine which plants are utilized, they are not usually trained in plant materials. The response for categories 2, 4, and 6 suggests that landscape architects value grower assistance in the selection of plant material. and, (3) work with landscape architects to define reasonable plant specifications for different size containers or, the relationship between root-ball size and caliper of trees.

Significance to Industry: The market research suggests that landscape architects rely on growers for information on availability of plant material and proper use in the landscape. This is an opportunity for nurserymen to influence which plants are used in the landscape through communication with landscape architects. Since landscape architects influence or determine the nursery where plants are sourced, the recommendations in this study could lead to increased sales for nurserymen.

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Table 1. Response of landscape architects to the request, "please list up to three ways that the plant producer could help you supply better goods and services."

Opportunities for Producers	Percent Response
Recommend plants for special conditions	12.0
Provide pictures/drawings of plants	9.3
Provide regular, frequent plant availability	32.0
Develop new items for specific needs	21.3
Supply plants that meet specified sizes	20.0
Presentations to landscape architects	5.3

Positioning Strategy for a Growing Medium Amended with Composted Broiler Litter

Bridget Behe, Lisa Beckett, Lilie Purvis, James Donald, and Charles Gilliam
Alabama

Nature of work: In 1990, the poultry industry in Alabama produced 3.6 billion pounds of broiler litter (Ala. Agri. Stat., 1990). Composted broiler litter (CBL) has some nutritive value and can be used as an agronomic fertilizer (Mitchell et al., 1990), as an alternative crude protein source for beef cattle (Donald, 1989), and in production of horticultural products: as a substitute for peat moss in a growing medium (Bugbee and Frink, 1989); as a soil amendment in field production of ornamentals and landscape bed preparation (Gilliam et al, 1989); and as a fertilizer.

Purvis et al. (1992) showed that a growing medium amended with CBL performed well in a study conducted in 120 consumer homes. While participants did rate the unpleasant odor of the amended medium 2% higher than two commercial media, the difference was not large enough to prohibit acceptability. The objective of this study was to determine a positioning strategy for a CBL amended growing medium amended in the consumer market.

Montgomery, Alabama, was selected as a consumer testing site due to its proximity and the availability of cooperating firms. On two Saturdays, Feb. 23 and Mar. 2, 1991, a survey was conducted in two malls and three garden centers. Consumers were asked to complete a questionnaire pertaining to their past media purchases, and their perceptions and attitudes about growing media. Four of the five locations had populations with similar distributions in age, per capita income, and education and those participants totaled 198.

Results and Discussion: Respondents had purchased growing media for use both in the garden and home (46%), for use with houseplants (34%), and as an amendment to garden soil (7%). Twenty-five percent of the respondents had not purchased potting media in the past year.

The most frequent use of growing media by respondents was for growing new houseplants (67%). Other uses were re-potting houseplants (49%), preparing beds for shrubs (25%), and sowing seeds (24%).

Respondents who had purchased a growing medium in the previous year (158 of 198) were asked to indicate where they most frequently purchased growing media in the past year. Discount stores (46%) were the location

of most purchases followed by garden centers (29%), nurseries (16%), and other stores (9%).

Consumers agreed that composted manure was a valuable addition to the home garden and that they would purchase plants growing in a medium amended with composted manure (Table 1). More respondents agreed that cow manure was desirable in a growing medium than agreed that poultry or horse manures were desirable amendments. Respondents agreed that cow, horse, and poultry manures have unpleasant odors.

Significance to the Industry: Consumers purchased growing media primarily at discount stores for the purpose of repotting interior plants. Since discount stores was the primary location where growing media were purchased, the marketing strategy and packaging need to be self-explanatory since there would be few personnel to assist the consumer in learning about the new product or to assist in product differentiation and selection. Package wording would be critical to successful positioning in the market. “Composted organic manure” may be more acceptable terminology than composted broiler, poultry, or chicken manure. States vary with regard to their definition of “organic,” thus an enterprise seeking to market this type of product would need to comply with different laws from state to state.

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Table 1. Mean ratings for attitudinal questions relating to the consumers agreement or disagreement on a scale from 1 (strongly disagree) to 5 (strongly agree).

	Mean Rating	% Aqree	Disaqree
Composted manure is a valuable addition to the home garden (n=204).	4.0	74%	5%
Composted poultry manure is desirable in a potting mix (n=179).	3.2[zy]	40%	26%
Composted horse manure is desirable in a potting mix (n=175).	3.2[z]	39%	21%
Composted cow manure is desirable in a potting mix (n=183).	3.7[y]	65%	13%
Composted poultry manure has an unpleasant odor (n=168).	3.3[x,w]	44%	21%
Composted horse manure has an unpleasant odor (n=163).	3.2[x]	39%	21%
Composted cow manure has an unpleasant odor (n=172).	3.2[w]	42%	29%

Statistical comparisons using paired t-tests:

[z]No significant difference (p=0.5465, t=-0.60) between means.
[Y] Significant difference (p=0.0001, t=-5.85) between means.
[x] No significant difference (p=0.7083, t=0.37) between means.
[w] No significant difference (p=0.2504, t=1.15) between means.

Product Mix Differences of Perennial Plant Producers

Bridget Behe and Lisa Beckett
Alabama

Nature of Work: Herbaceous perennials comprise what is believed to be a significant part of the ornamental plant industry, yet statistics to document production numbers and annual growth of this segment are sparse. The Census of Horticulture Specialties (1987) reported the wholesale value of ornamental plants produced in the U.S. was slightly more than $4 billion while Alvi Voigt (1990, 1991) estimated that the value of the herbaceous perennial plant industry was between $78 to $150 million.

Owners and managers have been directing perennial plant businesses through at least a decade of growth with little information about the size and scope of the industry. The purpose of this study was to establish a base of information about perennial plant producers. The Auburn University Horticulture Department, Alabama Agricultural Experiment Station, and Perennial Plant Association collaborated to develop a survey of herbaceous perennial plant producers. We mailed questionnaires to 439 members of the Perennial Plant Association classified as "producer/grower" on July 1 and again on July 23 if no response was received; 150 firms returned forms for a 34% response rate.

Results and Discussion: We wanted to see if there were any differences based on how important perennial plants were to the company's sales revenues. We classified each firm by the percentage of the firm's total sales that was accounted for by perennial plants as either (1) totally perennials (100%), (2) primarily perennials (50% to 99%), or (3) secondarily perennials (49% or less).

There was a significant difference in the number of years in operation and the percentage of sales that perennial plants generated (Table 1). Firms that were totally perennials were in operation an average of 12 years, while primarily perennial firms were in operation an average of 15 years. Firms classified as secondarily perennials were in operation an average of 22 years. Businesses that relied totally on perennial plants were relative-ly young compared with more established firms that apparently added the perennial plant line to broaden already existing product lines.

There was no significant difference in the number of perennial species grown by firms classified as totally, primarily, or secondarily perennials. Each group produced, on the average, 30 perennial genera. We examined the difference in sales at the wholesale level for these three types of firms.

While there appeared to be a difference in the dollar amount and number of units sold at wholesale among the three types of firms, it was not statistically significant. The variation in sales within each type of perennial business classification was too large to see any differences. There was a distinct difference in the product mix sold by the three types of firms. Businesses that sold perennials only had no sales of annual plants, woody ornamentals, hardgoods, or chemicals. Businesses that sold perennials primarily or secondarily did sell significantly higher percentages of these product lines (Table 1).

Significance to the Industry: Perennial plant businesses appear to be relatively small, sophisticated firms managed by highly educated and experienced professionals. The businesses produced an average of 30 perennial plant genera, requiring managers to have broad plant production and propagation knowledge and skills. When examining the businesses by the product mix they sell, there are some differences meaning that both newer and more established firms have incorporated perennial plants into their product mix. Newer firms have entered the market with perennials as their primary product line while established firms have added perennial plants to existing product lines.

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Table 1. Comparisons of perennial plant firms by their product mix sold on eight variables.

Variable	Perennial Product Mix		
	Secondarily (1% to 49%)	Primarily (50% to99%)	Totally (100%)
Years in operation*	2 2	15	12
Number of species grown[NS]	27	33	37
Wholesale sales 1989[NS]	$332M	$173M	$199M
Wholesale units sold[NS]	148M	212M	149M
Percent annuals sold*	19	8	0
Percent woody plants sold*	32	6	0
Percent hardgoods sold*	3	> 1	O
Percent chemicals sold*	2	> 1	O

*Significant difference at alpha < 0. 05, [NS] not significantly different at alpha < 0. 05 .

Comparison of Perennial Plant Businesses By Age

Lisa M. Beckett and Bridget K. Behe
Alabama

Nature of work: A rapidly expanding segment of the ornamental plant industry is the herbaceous perennial plant market. Voigt (1990) estimated the value of perennials between $66 to $150 million. The Census of Agriculture Horticultural Specialties reported the value of herbaceous perennials sold in 1987 to be $32 million (U.S.D.C., 1988). There are indications that this market has increased in the last decade and should continue to increase (Market Watch, 1986, 1990). Increased demand is partly due to a desire for colorful plants and the perceived low maintenance required by perennials (Behe and Raudsep, 1984). Despite recent growth, perennial plant businesses may be too small to have the financial resources to collect the needed information. This study was initiated to establish a base of information on the characteristics of the perennial plant industry in the United States. The Auburn University Horticulture Department, Alabama Agricultural Experiment Station, and the Perennial Plant Association (PPA), collaborated in a study of perennial plant producers in the U.S. A preliminary questionnaire was reviewed by board members of the PPA and revised. The final questionnaire was sent to 439 PPA members with a grower or producer classification. Two surveys were sent to each member on July 1 and 23, 1990, in order to increase the return rate.

Results and Discussion: Correlations were made to show how some characteristics change as perennial plant businesses aged. Results showed that as the business aged, total sales and the number of individuals employed in the business also increased (Table 1). There was a negative correlation between business age and the business's primary income being generated by perennials, as the age of the business increased the percentage of business sales generated by perennials decreased. Younger businesses that received their primary income from perennials were less likely to offer other product lines. These correlations suggested that the older firms were larger and sold a broader mix or were vertically integrated meaning that they sold and produced their products. The older businesses were managed by individuals with a greater number of years of work experience. The owner/active managers of the older firms were more likely to employ family members in the business and were more likely to depend primarily on this business income in their household. Business characteristics such as market area, propagation, and sales methods were reported in percentages. For example, respondents were asked to indicate what percentage of their total sales were made in their location state, out of their location state, and out of the country. There were no other significant correlations between business age and market area, propagation, and sales methods. .

Significance to Industry: Older firms were more likely businesses selling perennial secondarily to other product lines and were likely larger than younger firms. The fact that older businesses did not sell perennials primarily may have less to do with the economic feasibility of this choice than the history of their businesses. The younger firms are being established in a time of increased perennial popularity and they can take advantage of the market demand as their product mix reflects. The older businesses appeared to incorporate perennials into their already existing product lines to satisfy this "new" demand of their current clientele. Both newly established and long-existing producers have been able to capitalize on the increasing demand of perennials.

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Table 1. Correlations of business age with perennial plant business characteristics.

Variables	Business Age
Number of employees	0.37 (0. 0001) *
% of business sales generated by perennials	-0.25 (0.0032)*
Total sales	0.57 (0.000l) *
Years of work experience	0.32 (0.0001) *
Family members employed in business	0.37 (0.0001)*
Likelihood business income primary to household	0.20 (0.0131)*
of sales in state where business is located	-0.14 (0.1087)
% of sales out-of-state where business is located	0.11 (0.1895)
% of sales out-of-country where business is located	0.13 (0.1295)
% plants propagated from seed	0.04 (0.6411)
% plants propagated from cutting	-0.01 (0.9569)
% plants propagated from division	-0.10 (0.2204)
% sales by mail	O.01 (0.9776)
% sales by walk-in	0.05 (0.5526)
% sales by telephone	-0.05 (0.5573)

* Significant at $P \leq 0.05$.

Plant Profiles Promote Plants To The Public

Kim E. Tripp and J.C. Raulston
North Carolina

Nature of Work: Excellent new and unusual plants are often difficult to market because demand has not yet met production due to public unfamiliarity with unusual plant characteristics and potential uses. New plants with excellent horticultural character are desirable for nursery production, both to create new business niches and expand the landscape palette of plant materials. Unfortunately, the most spectacular new plants are often the most difficult to market just because they are new and untried by their ultimate buyers: retail customers and landscape architects. Growers see these plants in their peak season, fall in love, and produce them, only to have those blocks oflen go unbought. This process can only be altered by starting at its finish. That is, with the people at the final stop for these plants. Landscape architects and gardeners need to want and buy new plants to enable growers to produce them profitably.

Results and Discussion: The NCSU Arboretum works toward introduction of new, well-adapted plants into southern nurseries and landscapes. To facilitate the process of increasing demand for new and exciting plants, The NCSU Arboretum now publishes weekly plant profiles through the press release program of the Agricultural Communications Department at North Carolina State University. Short, easily readable articles describing interesting plants and their important attributes are released to newspapers and affiliated publications statewide and regionally. These articles have elicited increased interest in many heretofore underappreciated but superb plants.

Each plant profile is a brief, 1 to 3 page, colorful description of one of the plants grown at the Arboretum which has proven to be a good choice for southeastern landscapes. The profile provides general plant size, habit, landscape characters (flowers, fruit, foliar form and colors), hardiness, cultural requirements and propagation notes. Suggestions of appropriate landscape use are combined with vivid descriptions of the plant's chief interest.

Most profiles actually cover a group of plants, for example, one recent profile reviewed *Magnolia grandiflora* cultivars. Hundreds of plants have been dealt with in this way. Each profile works to cover excellent plants that are underutilized plants, (for example, *Ziziphus jujube,* the Chinese Date), new plants just coming into the trade (for example, the hardy Camellia species and hybrids), plants with a special character that need extra marketing (for example, the winter flowering Japanese Apricot, *Prunus mume* - rarely seen in its full glory by retail customers), or are unique species or cultivars of an otherwise average plant (for example, *Campsis grandiflora,* the Chinese Trumpetcreeper, with huge blooms and less invasive growth).

The plants are chosen weekly for their seasonal interest around the time of writing and for potential availability to readers. An effort is made to avoid plants so new or rare as to be unavailable for the forseeable future, thereby avoiding possible frustration for the more avid plant fans among the readers. Rare and unusual forms of plants covered in the profiles are often included in the articles to help increase awareness of the breadth of plant material that could be of interest to readers with greater searching.

The profiles are succinct and summarized “capsules of critical information” on their subject. They are written in an informal and accessible style, minimizing and explaining any technical terminology used, to appeal to any reader with an interest in plants. At this point, 92 profiles have been distributed through the press release program.

The profiles have proven useful in many ways. First, there has been significantly increased public interest in these plants, as evidenced by inquiries directed to the Arboretum staff regarding plants covered in the profiles. In addition, North Carolina nursery professionals have requested reprints of the articles for references on material they are contemplating production of, or for material new to their lines. Other regional home and garden periodicals, (for example, the *Carolina Gardener)* have published the press releases as part of their efforts to increase public awareness of new and interesting plants. At the Arboretum itself, the plant profiles have become part of a weekly Visitor’s Center display to draw the public’s attention to these plants in the Piedmont setting of the Arboretum. Color Polariod photographs of the plants are keyed to a map showing their location in the Arboretum.

Significance to the Industry: The weekly plant profiles are an effective way of drawing the public eye to special plants not normally covered by gardening columnists or those not yet in the mainstream gardener’s horticultural vocabulary. By informing the gardening public of the attractions of these unfamiliar plants, and giving them the basics of how to use them in their own landscapes, the plant profiles help to create demand for some of the huge range of excellent plants available. Increased demand can then begin to translate into production profitability for those plants exciting to growers as well as gardeners. For further information or reprints, contact:

Kim Trip
The NCSU Arboretum
Department of Horticultural Science
Box 7609 NCSU
Raleigh, NC 27695-7609

Marketing New Plants Through Industry Propagation Workshops at The NCSU Arboretum

Catherine J. Knes-Maxwell, J.C. Raulston, T.E. Bilderback and Richard Bir
North Carolina

Nature of Work: A series of NCSU Arboretum professional workshops have provided opportunities for education and direct distribution of recommended plants into the hands of growers. These workshops have played a vital role in the Arboretum's plant introduction program. Development of these programs has fostered creative partnerships among the Arboretum, the university and green industry associations resulting in increased income, a stronger constituency and advancement of the mission of the Arboretum. These workshops have focused on propagation, production and design with new and better adapted plants of promise from evaluation trials at The NCSU Arboretum. The workshops have successfully introduced these plants to hundreds of green industry professionals in the southeastern U.S.

Results and Discussion: The primary goal of research at The NCSU Arboretum is to collect and evaluate plants from around the globe for selection of well-adapted plants of promise for introduction to the nursery and landscape professionals of North Carolina and the southeastern U.S. During the past 15 years, over 9000 accessions have come from 45 countries and across the U.S. for trial. Today, the Arboretum has 5,000 taxa of plants growing on 8 acres of N.C. State University's Research Unit IV Farm in Raleigh, N.C.. Many of these plants have proven to be not only well-adapted to the unique demands of the hot, wet climate of the southeast, but also beautiful and well suited to nursery production. Moving promising but unknown plants into the nursery trade has been a challenging and exciting process. A recent series of Propagation Workshops at the Arboretum has made a significant contribution toward that process by placing both the plants, and information on their propagation, directly into the hands of nursery professionals.

This workshop series was developed in response to repeated requests for information on plant availability and propagation particulars. A workshop series designed to provide this information to a group of nursery professionals provided an efficient forum to give information and disseminate the plants directly to growers in the form of quality propagation material.

The workshop series was designed in cooperation with the North Carolina Cooperative Extension Service at North Carolina State University and with the North Carolina Association of Nurserymen to facilitate planning and publicity of the series and pinpoint the exact plant material to be covered. Day long workshops were scheduled for spring, summer, fall or winter to

coincide with the appropriate time for propagation of the focus plants for the workshop. Attendees received packets of information on general propagation techniques, plant sources and other relevant materials.

The workshop day was structured as a morning session on general propagation techniques,with slides and lecture by Dr. Ted Bilderback and Mr. Richard Bir from NCSU's Department of Horticultural Science, followed by an afternoon session with 'hands-on' demonstration and practice of specific propagation techniques. During the afternoon session, one of several different propagation professionals, experienced with the focus plant, showed the details of vegetative propagation for the plant and assisted attendees with practice sessions. The afternoon session was repeatedly hailed as invaluable to propagators because it gave them a chance to work with the plant material and ask unanticipated questions of the instructor while actually getting their hands, and knives, on the plant. In rotations with the direct propagation technique part of the program, participants were toured through the Arboretum collections and shown examples of potentially valuable new plants to add to production lines. At the end of the workshop, propagation material was distributed to the attendees and workshop evaluations were collected. Participants were encouraged to collect cuttings from Arboretum plants under staff supervision to take home for immediate use.

A broad range of plant materials was covered by the workshop series. Specialty conifers, fruitless sweetgum, herbaceous perennials, and redbuds have all been subjects of individual Propagation Workshops. The series of Propagation Workshops for nursery professionals has been well attended and workshop evaluations have proven to be very useful in responding to specific needs of the industry.

Significance to the Industry: The Propagation Workshops have provided a unique forum for distribution of plants of promise from The NCSU Arboretum. They have successfully contributed to the overall plant introduction program by directly moving new plant material and the tools to use it simultaneously into the hands of green industry professionals.

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Factors That Influence Transaction Methods of Landscape Plant Producers

Roger Hinson, Steven C. Turner, and John Brooker
Louisiana, Georgia, and Tennessee

Nature of Work: In competitive economic environments the changing ownership of goods is a critical event. For landscape plant producers, various methods are used to transact sales. Common transaction methods include trade show, telephone, in person, and mail order sales. Identification of significant influential factors could assist in developing producer profiles with respect to transaction methods, and help individual producers identify alternative transaction methods.

The general model used to develop these profiles was

$$NEG = f(AGE, GSALES, RETAIL, WRET, WLANDS, CORP, COMPET, NORTH, SOUTHE, WEST)$$

(variables definitions in Table 1). This model format was also applied to TS, TELE, INPER, and MO. Since these variables are measured as percent, a limited dependent variable estimation technique (tobit) was used for parameter estimation. A survey of landscape plant producers (see Brooker and Turner) was conducted in 23 states, generating 1500 responses, of which 1302 were used in this analysis.

Results and Discussion: For each model, a general producer profile is provided. For the NEG decision, the significant (all negative) factors were WRET, CORP, and WEST (Table 2). Thus, western (relative to middle American producers), incorporated producers with higher percentages of wholesale sales to re-wholesalers had lower percentages of negotiated sales.

Significant factors for the TS model were GSALES, RETAIL, WREW, CORP, and WEST. Incorporated firms with higher gross sales and higher percentages of their wholesale sales to re-wholesalers had higher percent-

ages of trade show sales. Western producers with higher percentages of sales at the retail level had lower percentages of trade show sales.

Telephone sales were influenced by AGE, GSALES, RETAIL, WLANDS, CORP, NORTHE, and SOUTHE. The profile of a firm with heavy telephone sales is an older, incorporated producer located in the southeast U.S. with higher percentages of wholesale sales to landscapers. The profile of a firm with less telephone sales is a smaller firm located in the northeast U.S. with higher percentages of sales at the retail level.

Personal (INPER) sales were significantly influenced by AGE, GSALES, RETAIL, WREW, CORP, and SOUTHE. Larger producers with higher percentages of retail sales had higher percentages of in person sales. Younger unincorporated producers in the southeast with higher percentages of wholesale sales to re-wholesalers had lower percentages of in person sales.

Mail order sales were significantly influenced by AGE, all three of the wholesale percentages (WRET, WREW, and WLANDS), CORP, and SOUTHE. Younger, incorporated producers with high percentages of wholesale sales to retail and rewholesalers utilize mail order sales more heavily.

Southeast producers with high percentages of wholesale sales to landscapers were less inclined to use mail order sales.

Significance to Industry: Results from this study indicate that older firms utilize telephone and mail order sales while younger firms use more personal sales. Larger firms tend to have more trade show and personal sales while smaller firms have more telephone sales. Retail sales usually occur in person and not over the telephone. Transaction methods for wholesale sales differ by market channel. Wholesale sales to retailers are less likely to be negotiated, but they are more likely to be mail orders. Wholesale sales to rewholesalers are more likely to be made through trade shows and mail, and less likely to be performed personally. Wholesale sales to landscapers are more likely to be made over the telephone, and less likely to be through the mail. Incorporated producers appear to utilize trade show, telephone, and mail order transaction method. Unincorporated firm tend to negotiate in person.

Some regional differences were detected with respect to transaction methods used. Northeast producers appear to use telephone transactions less while southeastern producers do just the opposite. Southeastern producers tend to use in person and mail order methods less. Western producers appear to negotiate less and make less transactions at trade shows.

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1. Brooker, John R. and Steven C. Turner. Trade Flows and Marketing Practices Within the United States Nursery Industry, So. Coop. Bull. 358, University of Tennessee Agricultural Experiment Station: Knoxville, Tennessee, October 1990.

Table I. Landscape Plant Producers and Factors Hypothesized to Influence Transaction Methods, 1988.

Variable	Description	Measurement	Mean	Standard Deviation
NEG	% of Sale Negotiated	% (0-100)	42.58	41.46
TS	%of Trade Show Sales	% (0-100)	5.61	12.74
TELE	% of Telephone Sales	% (0-100)	37.27	31.86
INPER	% of In Person Sales	% (0-100)	51.89	35.47
MO	% of Mail Order Sales	% (0-100)	5.21	15.61
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

(**Table 1**-continued)

Variable	Description	Measurement	Mean	Standard Deviation
CORP	Firm is Incorporated	0 - No l - Yes	.42	.49
COMPET	Competition cited as Limiting Expansion Potential	0 - No l - Yes	.36	.48
NORTHE	Firm is Located in CN, DE, NY, NJ, ME, or PA	O - No l - Yes	.25	.43
SOUTHE	Firm is Located in AL, GA, MS, SC, LA, or FL or Florida	O - No l - Yes	.32	.46
MIDDLE	Firm is Located in KY, MI, OH, OK, IL, TN, or AR	O - No l - Yes	.27	.44
WEST	Firm is located in AZ, CA, or OR	O - No l - Yes	.16	.36

Table 2. Tobit Parameter Estimates (t-Values) of Transaction Method Models for Landscape Plant Producers, 1988

Factor (Independent Variables)	Parameter Estimates (t-Values) Transaction Method (Dependent Variable)				
	Negotiated	Trade Shows	Telephone	In Person	Mail Order
Intercept	54.1452 (5.097)*	-11.8263	30.743	57.926	-51.4027
AGE	-.1080 (-1.563)	-.00064 (-.026)	.08422 (2.638)*	-.1032 (-2.825)*	.1364 (2.809)*
GSALES	.00000019 (.196)	.00000053 (1.613)*	-.00000082 (-1.903)*	.00000082 (1.680)*	.00000061 (.938)
RETAIL	-.0581 (-.737)	-.2812 (-7.417)	-.3836 (-10.692)*	.4378 (10.757)*	-.01396 (-.207)
WRET	-.1797 (-1.653)*	.00149 (.032)	-.06085 (-1.219)	-.0889 (-1.573)	.1542 (1.718)*
WREW	.1724 (1.518)	.0815 (1.715)*	.003495 (.067)	-.1397 (-2.373)*	.3405 (3.731)*
WLANDS	-.1178 (-1.229)	-.06734 (-1.532)	.1381 (3.099)*	-.06274 (-1.246)	-.2560 (-3.003)*
CORP	-13.3764 (-2.633)*	13.0863 (6.430)*	6.1675 (2.734)*	-11.2951 (-4.371)*	9.5095 (2.294)*
COMPET	7.0343 (1.428)	-1.3501 (.681)	.6257 (.283)	.1021 (.040)	-1.3804 (-.337)
NORTHE	-4.5626 (-.691)	-4.2126 (-1.529)	-6.6610 (-2.245)*	4.9173 (1.454)	1.8053 (.342)
SOUTHE	-4.7100 (-.758)	2.4484 (1.014)	5.9805 (2.154)*	-5.9321 (-1.867)*	-12.6136 (-2.425)*
WEST	-21.5915 (-2.815)*	-10.1403 (-3.289)*	2.047 (.604)	4.7895 (1.234)	-7.0268 (-1.161)

Advertising Media Selection By Landscape Plant Producers

Steven C. Turner and Charles R. Hall
Georgia and Texas

Nature of Work: The promotion function (advertising in particular) by landscape plant producers is the focus of this research. Kelly and Turner have investigated the importance of several advertising media as perceived by retail outlet managers (owners) and consumers, respectively. Little research has explored the advertising strategies of landscape plant producers.

Allocations for advertising and specific advertising media are influenced by various factors internal and external to the firm. Knowledge of the significant influential factors on advertising expenditures could be helpful to producers, advertising vendors, and the different advertising media. With this in mind, models are developed to explain: (1) total advertising expenditures, and (2) advertising expenditures devoted to various media.

Table 1 presents the variables to be explained (all variables starting with ADV) and the factors hypothesized to explain them. For example, the functional form for explaining advertising expenditures (ADVEXP) was;

ADVEXP = f (AGE, GSALES, RETAIL, WRET, WREW, LANDS, CORP, COMPETE, NORTHE, SOUTHE, WEST, PDMD, EXPMD)

where all variables are described in Table 1. Since advertising expenditures are bounded at the lower end by zero, a limited dependent variable estimation technique (tobit) was utilized to estimate parameters associated with the explanatory variables as described in Table 1.

Results and Discussion: A mail survey was conducted in 23 states in February 1989 to examine trade flows and selected marketing practices in the U.S. nursery industry. Information was also requested on advertising expenditures and media utilized. Responses from 1092 producers are used in this study. The criteria for selecting the sample and descriptive characteristics of the sample are presented in Brooker and Turner.

Table 2 presents the results of estimating a model for each advertising expenditure. A 0.10 level was used to identify significant influential factors in the advertising decision. For the total advertising expenditure decision it appears that gross sales, the percentage of sales devoted to retail, and the percentage of wholesale sales devoted to retail are the primary factors influencing advertising expenditures. All influences are positive. That is, as gross sales increase so does advertising expenditure.

For specific advertising media expenditures, results differ. For yellow page advertising, significant factors included RETAIL, WLANDS, CORP, SOUTHE, WEST, and EXPMD. All had a positive influence on ADVYP except EXPMD which had a negative influence. It appears that if a firm's expansion plans are limited by market demand they are likely to spend less on yellow page advertising.

Radio advertising was influenced by GSALES, RETAIL, WRET, WLANDS, and SOUTHE. Only SOUTHE had a negative influence. This indicated that SOUTHE producers had significantly lower radio expenditures than did MIDDLE producers. Trade show advertising expenditures were significantly influenced in a positive way by GSALES, CORP, COMPETE, and SOUTHE. More retail sales (RETAIL) or a northeast (NORTHE) location had a negative impact on ADVTS. Newspaper advertising was significantly influenced by GSALES, RETAIL, and WLANDS in a positive way.

On the other hand, trade journal advertising is higher for older (AGE), larger (GSALES), wholesalers to the retail and rewholesaler levels. Producers located in the northeast (NORTHE) with higher percentages of retail sales (RETAIL) had lower trade journal advertising expenditures. Catalogue advertising expenditures are higher for older (AGE), larger (GSALES), wholesalers (WRET, WREW, WLANDS) who were incorporated (CORP). It appears that producers with higher percentages of retail sales (RETAIL) spend less on catalogue, as do producers in the southeast (SOUTHE).

Newsletter advertising expenditures appear to be positively influenced by GSALES, CORP, COMPET, and PDMD. These producers appear to be fairly sophisticated marketers who are responsive to competitive pressures.

Significance to Industry: Several producer profiles with respect to advertising expenditures emerge as a result of this research. Overall, producers with higher gross sales to retail and wholesale sales to retail have higher advertising expenditure. No significant difference was identified with respect to regions of the United States. Producers with higher percentages of retail sales advertise more heavily in the yellow pages, on the radio, and in newspapers. Producers with greater percentages of wholesale sales allocate their advertising expenditures to selected media based on what level they wholesale to. If wholesale sales are higher to the retail level, then radio, trade journals, and catalogues dominate. If wholesale sales are higher to rewholesalers then trade journals and catalogues are the preferred media, while higher wholesale sales to landscapers indicate higher expenditures to yellow pages, radio, newspapers, and catalogues.

With respect to regional differences in use of advertising media, the northeast producers spend less on trade shows and trade journals than middle American producers. Southeastern producers appear to spend less on radio and more on trade shows and catalogues than middle American producers. Western producers appear to spend more on yellow pages and

less on radio than middle American producers. Producers who perceive themselves to be in very competitive environments have higher expenditures devoted to trade shows and newsletters. These results can benefit individual landscape plant producers who must make advertising media mix decisions.

Literature Cited

1. Brooker, John R. and Steve C. Turner. Trade Flows and Marketing Practices Within the United States Nursery Industry, So. Coop. Bull. 358 University of Tennessee Agricultural Experiment Station: KnoxvilleTennessee, October, 1990.

2. Kelly, Horace O., Jr. "Effectiveness of Alternative Advertising and Promotional Media Vehicles in Garden Center Advertising." Journal of Environmental Horticulture, 8 (June 1990):99-101.

3. Turner, Steven C. 1991. "The Importance of Advertising Media and Store Characteristics in Landscape Plant Purchases and Retail Outlet Selection Decisions. " Proc. SNA Res. Conf. 36:336-338.

Table 1. Landscape Plant Producers and Factors Hypothesized to Influence Advertising Expenditures, 1988.

Variable	Description	Measurement	Mean	Standard Deviation
ADVEXP	Advertising Expenditures by Firm	$	27,327	141,205
ADVYP	Yellow Pages Expenditures by Firm	$	2,299	19,790
ADVRAD	Radio Expenditures by Firm	$	333	2,791
ADVTS	Trade Show Expenditures by Firm	$	5,875	27,826
ADVNEW	Newspaper Expenditures by Firm	$	1,976	11,851
ADVTJ	Trade Journal Expenditures by Firm	$	3,901	36,355
ADVCAT	Catalogue Expenditures by Firm	$	6,315	51,608
ADVNL	Newsletter Expenditures by Firm	$	2,043	9,991

(**Table 1** continued)

Variable	Description	Measurement	Mean	Standard Deviation
AGE	Age of Firm	Years	22.02	35.51
GSALES	Gross Sales of Firm	$	942,630	2,678,000
RETAIL	% of Sales to Retail	% (0-100)	25.05	35.79
WRET	% of Wholesale Sales to Retail	% (0-100)	28.865	29.90
WREW	% of Wholesale Sales to Re-Wholesalers	% (0-100)	23.47	29.64
WLANDS	% of Wholesale Sales to Landscapers	% (0-100)	38.97	34.84
CORP	Firm is Incorporated	0 - No 1 - Yes	.44	.49
COMPET	Competition cited as limiting expansion potential	0 - No 1 - Yes	.37	.48
NORTHE	Firm is Located in CN, DE, NY, MA, NJ, or PA	0 - No 1 - Yes	.26	.43
MIDDLE	Firm is Located in KY, MI, OH, OK, IL, TN, or AR	0 - No 1 - Yes	.27	.44
WEST	Firm is Located in AZ, CA, or OR	0 - No 1 - Yes	.16	.37
SOUTHE	Firm is Located in AL, GA, MS, SC, LA, or FL	0 - No 1 - Yes	.30	.45
PDMD	Market Demand Cited as Important to Pricing Decisions	0- No 1 - Yes	.78	.41
EXPMD	Market Demand Cited as Limiting Expansion Potential	0 - No 1 - Yes	.50	.50

Table 2. Tobit Parameter Estimates (t-Values) of Advertising Expenditure and Media Selection Models for Landscape Plant Producers

Factor Independent Variables	Parameter Estimates (t-Values Expenditures (DePendent Variable) Total Advertising	Yellow Pages	Radio	Trade Shows	Newspaper	Trade Journal	Catalogue	Newsletter
Intercept	-38063.2	-38531.0	-27512.3	-23226.4	-33748	-80060	-70759.0	-17431.5
	(1.840)*	(-6.128) ~	6.896)*	(2.632)*	(-7.246)*	(-5.532)*	(-4.676)	(-5.244)*
AGE	33 . 6122	7 . 7792	12 . 578	-5, 9359	8 . 4651	108 . 521	117 . 868	-11. 4252
	(.284)	(.204)	(.762)	(-.151)	(.299)	(1.841)*	(1.755)*	(-.529)
GSALES	. 02143	. 000385	. 0005216	. 006098	. 007226	. 005486	. 007611	. 001776
	(13.341)*	(.733)	(2.756)*	(11.837)*	(2.070)*	(7.016)*	(8.508)*	(8.365)*
RETAIL	393 . 391	311. 789	165 . 285	-523 . 462	324 . 737	-359 . 058	-360 . 512	21. 5030
	(2.874)*	(7.759)*	(6.923)*	(-7.618)*	(10.609)*	(-3,739)*	(-3.738)*	(1.028)
WRET	349 . 731	-17 . 845	55 . 4975	-33 . 8636	8 . 2478	281. 816	480 . 872	5 . 6337
	(1.781)*	(-.310)	(1.843)*	(-.397)	(.202)	(2.016)*	(3.251)*	(.186)
WREW	143.462	-26.290	51.1051	4.3624	2.1079	394.199	442.649	-8.1186
	(.693)	(-.419)	(1.476)	(.051)	(.046)	(2.788)*	(2.933)*	(-.250)

WLANDS	88.8652	174.863	62.1146	-116.009	76.9737	141.066	254.472	26.2341
	(.514)	(3.601)*	(2.539)*	(-1.449)	(2.247)*	(1.069)	(1.842)*	(.976)
CORP	11285.8	8144.93	1441.86	13265.2	2589.78	14883.9	10730.5	3473.34
	(1.273)	(3.061)*	(1.020	(3.869)*	(1.294)	(2.829)	(1.920)*	(2.558)*
COMPET	10623.5	3366.34	413.309	6135.96	-2960.95	2465.98	6654.74	3045.40
	(1.124)	(1.177)	(.272)	(1.655)*	(-1.405)	(.433)	(1.094)	(2.122)*
NORTHE	-13963 . 7	-3611.18	-1093 . 30	-10743 . 5	1442 . 59	-13547 . 3	-15584 . 8	-2352 .16
	(-1.221)	(-1.037)	(-.681	(-2.219)*	(.601)	(-1.880)*	(-2.107)	(-1.341)
SOUTHE	3904 . 44	8600 . 35	-3150 . 68	8169 . 08	-1791. 90	2098 . 55	-12202 . 4	-2201. 00
	(.349)	(2.531)*	(-1.70)*	(1.913)*	(-.705)	(-.320)	(-1.728)*	(-1.272)
WEST	-2557 . 55	10795 . 40	-4856 . 37	-4547 . 72	-5129 . 34	1687 . 67	-9295 . 41	-173 . 806
	(-.191)	(2.686)*	(-1.922)*	(-.909)	(-1.569)	(.224)	(-1.130)	(-.087)
PDMD	4632 . 48	-4082 . 41	1199 . 67	440 . 680	3452 . 46	6690 . 57	4039 . 42	3113 . 80
	(.447)	(-1.335)	(.737)	(.105)	(1.501)	(1.046)	(.603)	(1.885)*
EXPMD	-2486 . 49	-6243 . 02	-1488 . 81	655 . 024	384 . 350	671. 670	-6592 . 62	1423 . 94
	(-.273)	(-2.248)*	((-1.003)	(.183)	(.190)	(.123)	(-1.138)	(1.015)

Management Practices of Garden Center Operators

Charles Hall and John Fielek
Texas A&M University

Nature of Work: Management can be defined as planning, guiding, directing and controlling the activities of people and resources to achieve desired business goals. Many garden center managers do not have a clear picture of how they spend their time. Regardless, it is almost impossible for a manager to focus their efforts entirely on management functions. The purpose of this research was to determine the managerial practices of retail garden center operators .

The research methodology of this study involved a mail survey of a representative sample of garden center managers in Texas. A 25-item survey was developed, pretested, analyzed for design problems, and modified appropriately. After pretesting, 201 surveys were mailed to Texas Association of Nurserymen members who indicated they were retail garden center operators. After a follow-up letter was sent out, 127 responses were received. Coding and analysis were conducted using SPSS-X Release 3.

Results and Discussion: The responding firms were classified by age, number of outlets, square feet of sales area, and level of sales. Major characteristics of these firms included:

- The mean age of responding fims was 21 years, ranging from 1 to 135 years in business.

- The average square footage of sales area was 76,700 square feet.

- The average number of outlets was 1.2 outlets, ranging from 1 to 6 outlets.

- 13% of the firms had less than $100,000 in sales, 45% has sales between
  $100,000 and $500,000, while 42% has sales in excess of $500,000.

As far as characteristics of the respondents, 35% classified themselves as managers, while 65% were actually the owners of the garden center business. The average respondent was 45 years old, ranging from 23 to 71 years old. 58% of the respondents had earned a bachelor's degree, while 14% had obtained graduate degrees. 83% have attended educational workshops, seminars, and professional conferences since obtaining their degrees.

For purposes of this study, the various functions performed by owners/ managers were classified into two categories: (1) *operations* (working in the nursery, selling, etc.), and (2) *managing* (paperwork, planning, etc.).

According to this classification, respondents indicated they spend 59% of their time in operations and 41% of their time managing. Table 1 outlines the activities that are conducted while *managing* the garden center.

Table 1. Activities conducted while managing the garden center.

Activity	Percent
Solving immediate problems	30.3 %
Paperwork	23.0 %
Operational planning	21.7 %
Financial planning	12.7 %
Planning for next 1-2 years	8.3 %
Planning for next 3-5 years	4.9 %

Interesting to note, of the 41% of the owner/manager time spent managing, approximately one half of that time is spent solving immediate problems and filling out routine office paperwork. This leaves precious little time for planning activities.

The time spent in operations and management was analyzed by variables such as age of manager, management experience, education level, age of firm, number of outlets, level of sales, and size of facilities. All of these variables were found to be not significant, except for the managers age and level of sales. Figures 1 and 2 depict the effect of these variables on manager's time.

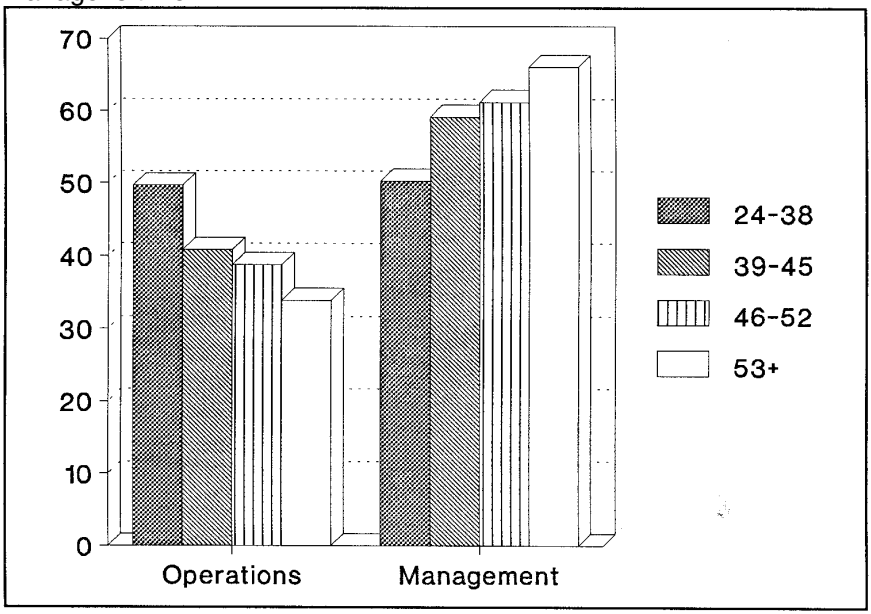

Figure 1. Effect of age on a garden center manager's time.

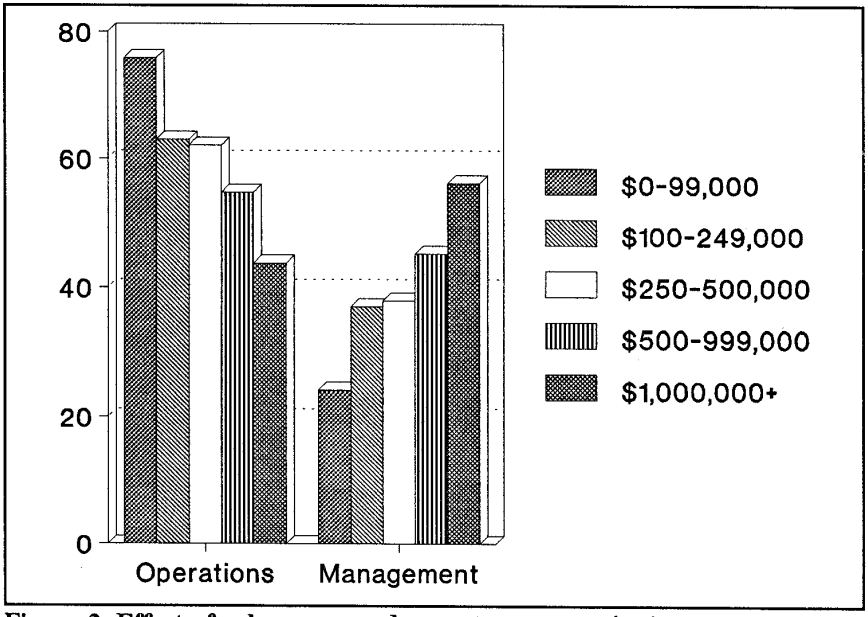

Figure 2. Effect of sales on a garden center manager's time.

The activities that are conducted while managing (see Table 1) were also analyzed by age of manager, management experience, education level, age of firm, number of outlets, level of sales, and size of facilities. All of these variable were found to not significant, except for managerial experience, and this variable was only significant on the *financial planning* and *planning on 1-2 year horizon* activities. Table 2 illustrates the effect of management experience on these two activities. In general, managers with few years of experience spend more time planning on a 1-2 year horizon and do more financial planning than any other group, except for those managers with 15 + years of experience.

Table 2. Effect of management experience on selected managerial activities.

Management activity	<4 yrs	5-9 yrs	10-14 yrs	>15 yrs
Financial planning	14.4 %	11.4 %	9.7.9 %	15.27 %
Planning on 1-2 year horizon	11.3 %	8.7 %	5.79 %	7.85 %

Significance to the Industry: Based on the survey results, several relevant conclusions may be drawn including:

- Garden center managers focus primarily on a 1 year horizon.

- Managers with less than 5 years of experience spend more time on short term planning than do experienced managers.

- Overall, managers spend more time in operations, than in management.

- Managers of larger firms spend more time managing.

- Younger managers spend less time in operations.

Although the response rate for the study was outstanding (63%), the analysis does have some limitations. First, the results may not be able to be generalized to depict all of the Texas and U.S. garden center industry since only members from the Texas Association of Nurserymen were surveyed. Second, although not likely, non-respondents may have different characteristics than that of the sample. Lastly, there may be significant interaction between dependent variables that were not tested for.

Forecasting Grower Cash Receipts

Forrest E. Stegelin
Kentucky

Nature of Work: Integral to any firm's marketing plan or feasibility study is an analysis of the industry, especially to observe if the commodity/service is a growth area. Yet in the field of business economics, probably no area is more challenging than sales or grower receipts forecasting.

Three basic factors enter into a sales forecast: trends and outlook for the general economy; the state of business conditions in the industry; and respective market shares of industry competitors. The extent to which these three factors are considered depends on many variables, including the purpose of the forecast, the availability of data, and importance of demand. Several forecasting techniques are available to nursery managers, and a few will be applied to the landscape industry to forecast grower cash receipts. The sources of the historical data are from USDA/ERS (Johnson).

Results and Discussion: The most naive method is to assume the future will be identical to the past, in which case a simple arithmetic average might suffice. A moving average uses a fixed number of past periods data in a forecast. A 3-year moving average forecast for 1992 would be to add grower cash receipts for 1989, 1990 and 1991, and divide by 3. The calculations indicate a 1992 forecast of $8.209 billion, while the 1991 value was about $8.7 billion. This moving average, although better than merely calculating a simple average, still treats each period's value equally.

Weighted moving averages put more emphasis on the time periods that have greatly affected sales, whereby the relative weights may be assigned subjectively. For example, considering an 85-10-5 weighted split for the three most recent years (1991-1989) suggests a forecast of $8.596 billion.

Exponential smoothing incorporates past data and a percentage of error (actual values minus forecast values) for the most recent period's forecast. The value of the percentage error in this technique is determined at the discretion of the forecaster. Using a high value (above 0.95) would result in a forecast equal to the receipts in the previous period; if a low value (0.5) were used, the resulting forecast would generally be the same period after period, virtually ignoring forecasting errors. In most applications, values between 0.2 and 0.8 are used. Using an error adjustment of 0.8 places the forecast for 1992 at $8.9 billion.

Trend projection involves identifying a trend for a given period, and extending that trend into the future. Straight line projections use arbitrary criteria for making projections. If a trend is gradual and without large period-to-period deviations from the normal, linear trend forecasting can be useful and results can be reliable. The long run linear trend projection for the grower cash receipts data of 1960-1991 leads to a pessimistic prediction of $7.5 billion, whereas the short run linear trend projection based on the 1981-1991 data hints of an optimistic prediction of $9.7 billion (Figure 1). For this particular set of data (1960-1991) a best-fit curve can be applied as well, with the outcome being a 1992 grower cash receipts forecast of $9.9 billion.

The two nonexclusive types of causal methods in econometric modelling are explanatory and predictive. Explanatory equations attempt to shed light on what independent variables affect the dependent variable. Explanatory equations are not used for forecasting but explaining why instead of what will happen. Predictive equations use leading indicators to make estimates of the dependent variable. These leading indicators are selected on the basis of their past relationship with the dependent variable and that they lead in an economic or logical sense.

There are many considerations when using regression and econometric forecasting techniques. Among the advantages in using such models is the high level of accuracy for long and short term estimates, including the prediction of turning points. An example of econometric modelling is from Gineo and Omamo (1990) for forecasting nursery product expenditures in which the authors used ordinary least squares and seemingly unrelated regression methods with several functional forms to evaluate such independent variables as nominal income per household, age distribution, single family home construction starts, and education level of residents. Such methods require massive amounts of data, but are relatively accurate; in this instance, the forecast grower cash receipts for 1992 approximate $9.2 billion.

When in doubt, ask; but ask the experts so that their opinions can be condensed into a consensus prediction. The results of the Delphi Method can be used by the final decision makers as an indication of expert opinion and also as to what factors they consider relevant to the situation. These factors can be expanded and used as leading indicators, explanatory variables, etc., in the other forecasting techniques described earlier. Such a consensus forecast pegs the total US grower cash receipts for the greenhouse and nursery crops at $9.5 billion for 1992.

Significance to the Industry: If a business is contemplating entering into or expanding within a sector of an industry, understanding methods to analyze the past and predict the near-term future are critical to success.

Literature Cited

1. Gineo, Wayne M. and S. Were Omamo. 1990. "An Analysis of Household Expenditures on Nursery Products in the United States. "Southern Journal of Agricultural Economics 22(2):208.

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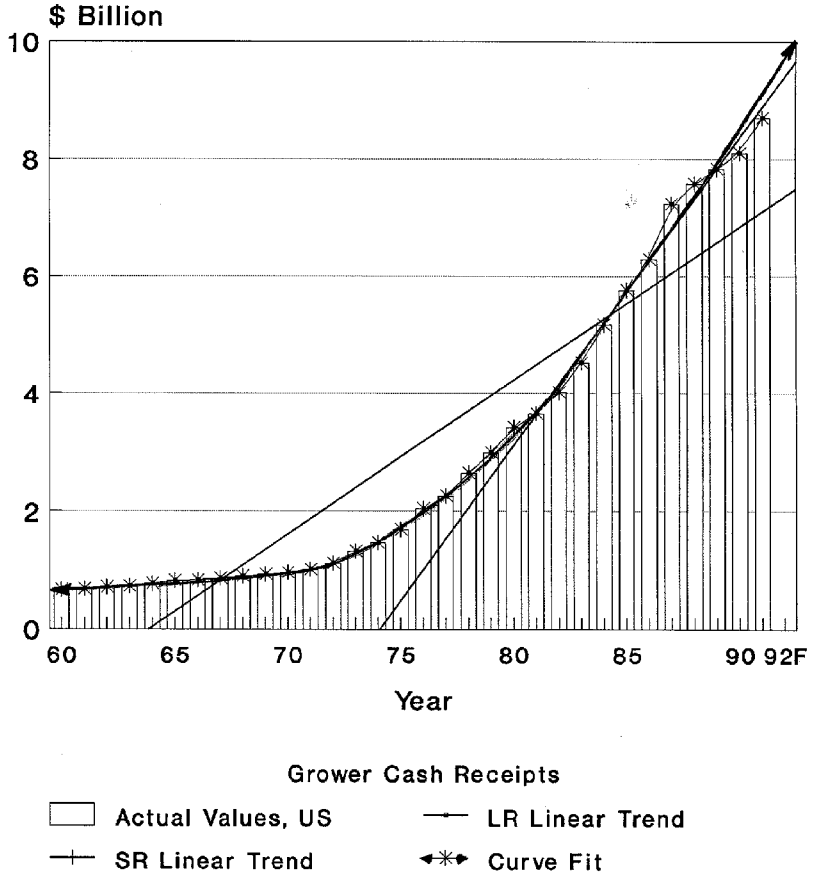
Figure 1. Grower Cash Receipts Via Various Forecasting Methods, 1992



Source: Historical Data from USDA/ERS