Forum: *Review, symposia, program and/or viewpoint papers.*

Nursery Marketing Can Be Improved[1]

Wayne M. Gineo[2]
Department of Agricultural Economics and Rural Sociology
University of Connecticut
Storrs, CT 06268

Abstract

The socioeconomic factors influencing consumer demand for landscape plants and services and nursery sector growth were investigated. Data that shows a shifting age composition, gains in consumer income, higher education levels, and increases in construction starts provides a socioeconomic rationale for continued expansion of the nursery industry. Through surveys and a review of published information it was revealed that the industry needs additional information on production costs, pricing strategies, profit margins for individual plants, product distribution and market planning. Research aimed at incorporating these components into appropriate economic analyses and models designed to investigate production and marketing of landscape plants and related services would assist the industry in capitalizing on the anticipated growth in demand.

Index words: economics, marketing, demand

Introduction

Production and marketing of nursery crops and related goods and services have grown substantially making this sector an important part of the agricultural economy at both national and regional levels. In the Northeast U.S. the overall nursery-horticultural industry (which includes production, landscaping, turf, maintenance, design, and retail sales of nursery stock and related goods) has become a vital segment of the agricultural economy.

Industry expansion has led to several marketing changes and concerns which impact the national and regional green goods industries. Among the changes are the development of a rewholesale distribution network and increased sales by large retailers. The marketing concerns of many firms include product pricing and future demand patterns for specific nursery stock and related goods and services.

The purpose of this paper is twofold. First, the potential consumer demand for nursery stock, services and related goods is evaluated to determine whether there is a basis for continued growth. Second, the marketing changes and concerns of the industry are discussed to identify topics and indicate where applied research is needed to improve and understand marketing conditions.

While the primary focus is with the marketing of nursery plants and materials in the Northeast, it is appropriate to relate this region to the nation because interregional product movements integrate the industry. Further, the demand for nursery products and services is affected by factors which exhibit similar trends at the national and regional levels.

[1]Received for publication March 17, 1987; in revised form November 10, 1987; second revision March 30, 1988. Scientific Contribution 1197 of the Storrs Agricultural Experiment Station, Storrs, CT. The helpful comments of R.L. Leonard, S.K. Seaver and the Journal's reviewers are gratefully appreciated. This work was partially supported by a grant from the Horticultural Research Institute, Inc., 1250 I Street, N.W., Suite 500, Washington, D.C. 20005.

[2]Assistant Professor

Industry Growth and Consumer Demand

The wholesale or farm value of nursery crops produced in the United States was in excess of 1.1 billion dollars in 1982 (4). Table 1 provides the 1982 ranks, based on value of production, for the top three states in the country and the Northeast states. The Horticultural Research Institute has estimated that in 1985 wholesale production of nursery crops, at the national level, was valued at 1.8 billion dollars (8). National data for more recent years is not available, but trade organizations, individual firms, and industry publications have indicated that wholesale production and retail sales have increased dramatically. Further, preliminary information indicates that 1986 and 1987 may establish new product value records. Many individuals believe that this trend will continue.

Specific information on the outlook for the nursery industry in the Northeast region can be gained from studies in Maryland (13), Vermont (14), and Connecticut (10). In Maryland, one-half of the nursery firms surveyed plan to expand in the next 5 years, while one-third of these firms plan to improve their facilities. The Vermont study indicates substantial growth in income and numbers of persons employed between 1985 and 1987. Eighty percent of survey respondents in the Connecticut study indicated that they expected increased income over the next two years. Employment in the Connecticut industry is expected to increase by approximately 15%. The New Hampshire industry also shows signs of growth. According to S. Taylor, New Hampshire Commissioner of Agriculture, the New Hampshire industry (16) "is booming and is on a growth curve that will assure it's prominence for years to come".

National and northeast regional expectations suggest that the industry is optimistic regarding the future. The question immediately arises as to the existence of a socioeconomic nationale for optimism. Since the potential for the industry is directly linked to the final demand by consumers for goods and services, the factors influencing consumer demand must

Table 1. State Rank by Value of Nursery Stock Produced in 1982[z]

State	Rank	State Production ($M)	Percent of U.S. Total
California	(1)	318.5	27.6
Florida	(2)	108.0	9.4
Oregon	(3)	65.4	5.7
Pennsylvania	(7)	38.3	3.3
New Jersey	(10)	32.9	2.9
New York	(12)	28.9	2.5
Connecticut	(14)	25.6	2.2
Maryland	(19)	17.4	1.5
Massachusetts	(23)	12.3	1.1
Rhode Island	(31)	5.9	0.5
Delaware	(39)	2.6	0.2
Maine	(42)	1.7	0.15
West Virginia	(44)	1.3	0.11
New Hampshire	(45)	1.0	0.10

[z]Source: 1982 Census of Agriculture, Bureau of the Census, Washington, D.C., 20270. Vermont not ranked in top 45 states.

be examined. Recent studies (5, 7, 19) and empirical work identifying the determinants of consumer expenditures on nursery goods in New Jersey (17) and several other states (11) suggest that the factors affecting consumer purchases of landscape plants and related services include age, education, consumer income, housing and construction starts, and the attributes or services obtained from the product.

According to two studies on the characteristics of nursery product purchasers (7, 19), the market for nursery stock and services is centered in the middle-age group. Demographics indicate that the number of people in this age group is rapidly increasing. In fact, it is projected that between 1980–2000 the percentage of the population in the 35–44 age bracket will increase by more than 55% (15). By 1990, one-third of the nation's population will be middle-aged. As the percentage of people in this group increases, the demand for nursery products and related services is expected to increase.

Education levels for the baby boom generation, which is now becoming the middle age group, are high in comparison to other age groups. A relatively large portion of these individuals have obtained college educations. Moreover, the proportion of people, within the total population, having more years of education continues to increase (9). Additional years of education have been associated with higher purchase rates of nursery products and services (7, 19); thus, further expansion in sales and services may be anticipated. Income may be the causal factor, since increased income is associated with higher levels of education.

Households with income levels in excess of $30,000 have also been identified as having relatively high purchase rates of nursery products and services (7). Higher incomes are associated with increased purchases of nursery products and services because that portion of income considered discretionary and available for nonessential purchases is greater. Previous and expected gains in consumer income will put more households into the greater than $30,000 income bracket. These gains, plus the fact that the baby boom generation has relatively high levels of income and that this age group comprises a large portion of the population, suggest that product and service sales will be strengthened.

As housing and construction starts or single family home sales increase so do consumer purchases of nursery stock and services to landscape and maintain their new property (11, 18). Thus, the demand for landscape plants and related services increases. In 1986, housing starts in the nation are projected as being over 1.8 million units, a 4% increase over 1985 (6). The 1986 figure represents a 38% increase over the 1980 level. Single family home purchases and starts can be expected to stay high as the middle age group continues to enter the single family home market. Moreover, if interest rates remain at relatively low levels, another positive influence will be present. Increases in housing starts and home sales will influence consumer nursery product and service purchases beyond 1987.

The attributes that consumers prefer when purchasing nursery products include quality, low price, selection, color, instant landscape results, low maintenance landscapes, and container gardening (5, 7). The industry has acknowledged these preferences by developing high quality varieties, increasing the availability of plants, specializing in the production of specific size, colorful, unusual or larger sized plants, and increasing container production. By reacting to consumer preferences the industry has put itself in a position to strengthen sales of products and services.

In summary, it appears that the combination of increased housing starts, higher incomes, industry adjustments, increasing educational levels, and the changing age composition of the population, will all play a role in stimulating the demand for nursery products and related services. However, what is not known is the precise relationship between each of these factors and the amount of landscape plants and services purchased. Research evaluating and quantifying each of these demand components is crucial to industry planning and marketing. For example, if research indicated that a 5% increase (decrease) in housing starts resulted in a 2% increase (decrease) in sales the industry could form expectations, plan appropriately and react to increases or decreases in housing starts.

Industry Marketing

Many changes in nursery product marketing have evolved to bring the sector to its current position. The development of a refined wholesale distribution network has improved industry marketing. A major benefit of this activity is that a buyer can obtain various items from a single firm. For instance, landscapers and landscape maintenance firms, the fastest growing segment of the Connecticut industry, need a wide variety of materials on a regular basis. Trade with wholesale distribution centers eliminates the need for landscapers to maintain their own inventories or visit several firms when obtaining needed materials.

Several large nursery firms have developed other arrangements designed to serve the rapidly growing landscaping industry. Some wholesalers provide walk-in sales to landscape contractors while others have developed special departments to serve landscapers. The wholesale distribution centers and the services provided to landscapers have streamlined industry marketing and reduced costs for the landscaping firm.

The services provided to landscapers may be a factor, just as important to buyers as other product attributes, such as price, quality and size, are when making purchase decisions. If producers knew the relative importance of these attributes, then production techniques or marketing strategies could be modified to provide products which meet buyer preferences. Analytical procedures referred to as conjoint analysis (12) can be utilized to determine the relative im-

portance of attributes in purchase decisions. When properly applied, this information would increase producer sales and reduce the costs incurred by retailers when searching for the products they want to purchase.

Recent changes in market structure at the retail level may affect industry marketing in the future. An example is provided by leading retail firms such as the Sunbelt Nursery Group and General Host, both of whom are rapidly expanding the number of retail garden center stores operated. Currently, Sunbelt Nursery operates over 100 stores nationally, more than double the number which it operated in 1983. General Host operates regional stores under various names, including Frank's, Scott's, and Flowertime Nursery and Craft centers and has expanded into several regions of the country. Sales at other nursery and garden center chains and the leading retail firms (K-Mart, True Value, Safeway) also continue to grow. Furthermore, sales by food retailing firms have increased as they diversified their product line. The result will undoubtedly be increased marketing shares for the large nursery chain retailers.

Continued growth and increased market shares by the leading retailers could result in relatively lower sales by smaller local nursery and garden centers. To avoid sales shifts and maintain a position in the market, local nursery and garden centers should continue to provide and capitalize on the design services, advice and expertise currently provided to consumers. Research aimed at analyzing changes in industry market structure, their effect on different sized retail firms, and upon firm marketing strategies should prove valuable to the industry. Such an analysis would help the industry and its participants improve and understand marketing strategies, relative positions, and the future structure of the industry.

One of the important factors in pricing nursery products is the size and quality of the stock. Individual plants are graded by growers and priced accordingly. However, pricing by leader firms is another method of determining prices at the wholesale level. Within the Northeast industry, and particularly in Connecticut and Rhode Island (3), leading firms usually announce prices and smaller firms react by publishing price lists, either above, below, or the same as the leader. Such a pricing arrangement, referred to as "price leadership" may be indicative of the market position enjoyed by larger firms.

One problem with the "price leadership" arrangement is that most of the firms (price leaders and followers) are not aware of potential market demand, production costs, profit margins, or rates of return associated with each plant being priced. Although lack of such information may not cause a marketing problem, as long as prices are set to clear the market, it does cause a firm planning and profitability problem. With knowledge of costs, margins, and rates of return, a firm could improve profits by shifting production to the more profitable crops and producing that combination of nursery crops which yields the greatest expected profit. However, firms cannot determine a desirable crop mix without knowledge of demand, production costs, and profit margins of many plants. Research focusing on costs and cropping alternatives would enhance firm planning and profitability. For instance, a mathematical programming model could be designed to choose between alternative crops and determine the crop mix that would maximize profits for an individual firm.

At the request of large retail firms, the industry is incorporating Universal Product Coding/Ban Coding into the marketing system. This marketing technology will expedite retailing, inventory control, ordering, and overall marketing. The American Association of Nurserymen has formulated a standardized bar coding system for the industry (1, 2). Individual firms should incorporate this system into their production and shipping process. A standardized system is necessary to obtain the benefits offered by bar coding. Without the adoption of a uniform system the advantages of bar coding will not be captured and may even result in a less efficient marketing system. Initial use of bar coding has created problems and inconveniences for some firms, suggesting that adjustments may be necessary as the technology is adopted. For instance, grower application of coding to container nursery stock in one firm resulted in doubling the time required to prepare an order for shipment. Possible adjustments in bar coding implementation include designing tags for easier application, holding training sessions to inform growers about the system and the benefits they may obtain from bar code adoption, and efficient labeling of plants during the production cycle.

Continued success for the industry requires marketing research and production planning. Market research is needed, on a regional and national level, to assist the industry in defining consumer desires. The completion of market research will allow for production adjustments and market planning to aid in avoiding short or excessive supplies of certain species (a concern of industry participants).

An example of market planning and production adjustment would be the shifting of container production to meet anticipated market demands. Suppose a grower was dealing with a 3 year growth cycle to produce a marketable plant. At the time of propagation, plans are to sell the crop as #2 plants. Six to 9 months into production, growers typically shift the plants from smaller containers into #2 containers. If future market expectations for a #2 size are reduced and current demand is greater than expected, a grower can shift the plants into a #1 container. The result is a marketable plant at an earlier time. Alternatively, when the #2 plants are marketable it is possible to forego current sales and shift some of those plants into a #3 or #5 container, if market demands and expectations warrant this shift. This example illustrates the flexibility growers may incorporate into their operations, but also illustrates the importance of market knowledge and the need for a dynamic and integrated production and marketing plan for firm success.

Significance to the Nursery Industry

Based on several socioeconomic characteristics examined, it appears that the nursery and related industries will experience continued economic growth. Marketing adjustments to recent growth and consumer desires have contributed to past industry success. However, the industry needs additional information to capitalize on the anticipated growth in demand. Production and market research on the factors determining demand, the integration of production and marketing plans, market structure, and strategic marketing are necessary to assist industry participants in understanding future marketing conditions, planning activities and increasing profitability. By identifying these issues and potential research projects to investigate, this paper provides the means

to assist the industry in improving production and marketing practices.

Literature Cited

1. American Association of Nurserymen. 1986. Nursery crops coding system manual. Washington, DC.

2. American Association of Nurserymen. 1986. Nursery growers' guide to UPC bar code labeling. Washington, DC.

3. Bristol, P.W. 1973. An economic survey of the Rhode Island nursery industry. Univ. of Rhode Island Agric. Exp. Stat. Bull. 410.

4. Bureau of the Census. 1984. U.S. Department of Commerce. 1982 Census of Agriculture. p. 391. Washington, DC, V. 1, Part 51.

5. Dunn, C. 1985. Special report. Pacific Coast Nurseryman and Garden Supplier. (August) 48–51.

6. Economic Report of the President. Together with the Annual Report of the Council of Economic Advisors. p. 368. 1987, Washington, DC.

7. Horticultural Research Institute, Inc. 1987. Nursery consumer profile 2. Washington, DC.

8. Horticultural Research Institute, Inc. 1987. Scope V of the nursery industry. Washington, DC.

9. Gerald, D.E. 1985. Projections of education statistics to 1992–93. National center for education statistics. Washington, DC.

10. Gineo, W.M. 1988. Economics of the Connecticut nursery industry. Univ. of Connecticut, Dept. of Agric. Econ. and Rural Soc., Staff Paper 88-1.

11. Gineo, W.M. and S.W. Omamo. 1988. A preliminary analysis of household expenditures on nursery products. (Unpublished manuscript).

12. Green, P.E. and V. Srinivasan. Conjoint analysis in consumer research: issues and outlook. J. Consumer Research. 5:103–123.

13. Maryland Nurserymen's Association. 1984. Maryland ornamental horticulture industry. (Unpublished mimeo).

14. Perry, L.P., and S. Justis. 1985. The greenhouse and nursery industry in Vermont: A study of dramatic growth. Univ. of Vermont Agric. Exp. Sta. Res. Rept. 45.

15. Spencer, G. Bureau of the Census. 1984. U.S. Department of Commerce. Projections of the population of the states, by age, sex and race: 1983 to 2080. p. 7. Series P-25. No. 952. Washington, DC.

16. Taylor, S. 1986. No doubt about New Hampshire's hort boom. p. 17. New England Country Folks. Lee Publications, Inc. Palatine Bridge, NY.

17. Varner, M.C. and G.J. DiLalo. 1983. Household demand for landscaping trees and shrubs in New Jersey. New Jersey Agric. Exp. Sta. Bull. R-02450-1-83. New Brunswick, NJ.

18. Voight, A. 1978. A guide to nursery marketing research. Horticultural Research Institute, Inc. Washington, DC.

19. Weyerhauser Nursery Products Division. 1986. The value of landscaping. Tacoma, WA.