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Economic Characteristics of the Nursery-Greenhouse Sector in Connecticut


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Executive Summary

The nursery-greenhouse industry in Connecticut is of substantial size and has grown rapidly in recent years. However, few data are available that provide a complete picture of the economic characteristics of this industry. The objectives of this study are two-fold: 1) to determine the income, employment, wage and land use characteristics of the wholesale growers of perennials and woody ornamentals in Connecticut; 2) to determine the anticipated income and the expected number of people that will be employed by the production oriented firms in 1990.

To obtain the data required to complete these objectives a survey was mailed to 501 Connecticut firms. Overall, response to the survey resulted in 46 percent of the mailed questionnaires being returned. Of the responses, 36 firms actively involved in growing woody ornamentals or perennials at the wholesale level were selected to represent the industry. The data reported by these businesses provide the basis for estimating the economic characteristics of the Connecticut industry.

The following eight points highlight the findings of the study.

- Growers who responded to the survey utilize 4,674 Connecticut acres for production purposes; employ 675 full-time, 441 part-time and 204 seasonal workers. These 36 growers earned \$48.8 million in 1988.
- Employment needs for the industry, over the 1988-1990 period, are expected to increase by 22, 20 and 32 percent in the full-time, part-time and seasonal categories, respectively.
- Gross income at the wholesale level is expected to increase by 13 percent over the 1988-1990 period.
- The data provided by the respondent firms were used to estimate that the Connecticut industry a) utilizes approximately 10,225 acres in production; b) employs over 1,400 full-time, 900 part-time, 400 seasonal and 2,250 full-time equivalent workers; and c) earns approximately \$106.8 million in 1988.
- The ten firms in Sales Class IV (income over \$1 million) appear to be the most significant group of firms. These firms control 98 percent of the acreage used in production; employ 86 percent of the full-time, 80 percent of the part-time and 59 percent of the seasonal employees working in the industry and earn 93 percent of the income obtained by the 36 firms.
- Managers in the nursery-greenhouse sector earn, on average, between \$22,164 and \$41,283 per year, depending upon skill

level. Non-supervisory clerical workers earn a mean wage of \$18,058 annually, while supervisory clerical workers are paid an average of \$31,521 per year. Wages in the industry have increased between 6.7 and 9 percent annually in recent years.

- The five most significant factors limiting industry growth, in order of importance, are labor availability, land availability, the ability to hire and develop management, labor quality, and environmental regulations.
- Factors important in establishing prices for plant material are ranked as follows: plant quality, inflation, market demand, comparison to other growers, and plant size.

Economic Characteristics

Connecticut's general economy is strong with low unemployment, per capita income that ranks state residents in the top five nationally, and high levels of construction starts prior to 1987. Economic factors, such as consumer income and construction starts, have been positively correlated with consumer expenditures on nursery products (Gineo and Omamo). Increases in consumer expenditures also lead to increases in the wholesale trade of nursery products. Thus, the recent growth and new entry into wholesale production can be linked to favorable economic conditions in the state. Growth at the wholesale level can be illustrated with recent USDA data showing that grower cash receipts in Connecticut rose from \$44.4 million in 1980 to 98.1 million in 1987. The importance of the nursery-greenhouse sector is noted by the fact that in 1987 grower receipts from this sector surpassed those in all other agricultural based activities in the state (USDA).

The rapidly growing nursery-greenhouse sector is a diverse one that is comprised of production and service activities related to cut flowers, sod, woody ornamentals, annuals, perennials, herbs, and bedding plants. In order to assist and fully develop this portion of the Connecticut economy, participating firms and state policy-makers should be aware of its economic characteristics and growth rates. Currently, limited information on the income earned, amount of land in use, and the number of individuals employed in nursery-greenhouse activities is available. Many of the industry's firms are involved in multiple activities, that may include growing, retailing, and landscape design, maintenance or installation. Thus, to obtain an accurate profile of the different sectors of the industry, it is important to isolate each portion. The purpose of this study is to provide an accurate description of the wholesale or grower portion of the nursery-greenhouse industry¹.

The overall objective of the study is to provide a set of economic characteristics that describe several dimensions of the woody ornamental and perennial production sectors of the state. In completing this objective the study will: 1) determine the income, employment, wage and land use characteristics of the wholesale growers of perennials and woody ornamentals within Connecticut, and 2) determine the anticipated income and the expected number of people that will be employed by the production-oriented firms in 1990. Of primary interest is the wholesale value of nursery materials produced, the number of persons employed by these firms, wages earned, and the acreage

used in production activities. It is anticipated that the data set, developed in this study, will provide information that can be periodically updated to analyze industry trends and developments. Further, if additional resources become available, it will be possible to incorporate the retail, service and/or other sectors into the data base.

Data

The data used to complete the objectives were obtained by mailing a survey (Appendix A) to all firms involved in the production of woody ornamentals or perennials in Connecticut. The survey instrument used in this study was based on one used in a previous study of the Connecticut nursery industry (Gineo, 1988). The present questionnaire was initially sent to 501 state firms and a second mailing was forwarded to non-respondents. The two mailings resulted in a 46 percent response rate or 229 of the 501 operations returning a questionnaire. Of the 229 returns, 74 firms were identified as being primarily involved in the growing of woody ornamental or perennial plants for sale to retail firms, re-wholesalers, or landscapers. From these 74 wholesale growers, 36 were businesses reporting gross income greater than \$10,000. The 36 wholesale growers having gross income greater than \$10,000 were selected for statistical analysis and form the final sample unit used to represent the industry. If any of these firms is involved in another activity besides growing, such as retailing or landscaping, the reported data on income, land and employment are weighted based on the percentage of business that the firm conducts at the wholesale level. All data presented in this report reflect this weighing scheme.

Firm characteristics

Table 1 provides acreage patterns of the 36 firms by sales class. As expected, higher sales classes own and operate a greater average number of acres than do smaller sales classes. The total area operated for nursery production by the 36 nurseries responding to this survey is 4674.4 acres. One striking feature of the acreage characteristic data is that growers in Class IV, those with income greater than \$1 million, utilize 98 percent of the acreage used in nursery production and 91 percent of the greenhouse area. Clearly, this illustrates the dominance of the Class IV firms in terms of land use, particularly when one notes that the 10 firms in this class are less than one third of the 36 total sample firms.

Class IV growers use 69 percent of their available acreage and, on average, operators with income over \$10,000 (the All

Growers Class) use 60 percent of 129.8 out of 215.8 available acres in nursery operations. However, producers in Sales Class I, II or III use less than 13 percent of their available acreage in nursery crop production. When possible, firms in Classes I, II and III should operate on more of their available acreage to expand nursery production and shift to higher income levels.

Table 2 reports the employment characteristics of the nursery industry by sales class for the group of 36 wholesalers. Employees are categorized as: full-time, more than 30 hours per week and 8 months per year; part-time, less than 30 hours per week or 4 to 8 months per year; and seasonal, less than 4 months per year. The total number of people employed by the 36 commercial firms in 1988, are 675 full-time, 441 part-time and 204 seasonal workers. Sales Class IV (comprising firms with gross income over \$1,000,000) is the dominant sales class in terms of the number of people employed. In fact, in 1988, Class IV accounted for over 86 percent of the total full-time, 80 percent of the part-time and 59 percent of seasonal employment.

The average number of full-time, part-time and seasonal employees for the group of 36 producers, during 1988, are 18.8, 12.3 and 5.7, respectively. By 1990, wholesalers expect that employment needs will increase by approximately 22 percent in the full-time, 20 percent in the part-time and 32 percent in the seasonal employment categories. A comparison of similar data for the 1986 and 1988 periods indicates that full-time, part-time and seasonal employment increased by approximately 10, 13 and 14 percent, respectively, over this two year span.

Clearly, the above figures show that employment needs are expected to increase at a faster pace than previously recorded. Another noteworthy point is that projections for increasing the number of seasonal employees are greater, on a percentage increase basis, than for either full-time or part-time employees for the 1988-1990 period. Employment needs and labor availability, as will be discussed below, are major concerns of the industry and may limit growth in the near future if the industry does not attract both skilled and unskilled labor.

In Table 3 current and projected income values for the 36 wholesale growers are reported by sales class. Gross income for the group of responding firms is approximately \$48.8 million. The wholesale value of production for Sales Class IV, the larger firms, is \$45.2 million or about 93 percent of the total sample income. The dominance of Sales Class IV, as was shown with the acreage and employment data, is, once again, illustrated with the income data.

Operators responding to the survey project that gross income will increase by about 13 percent over the 1988 to 1990 period. From 1986-1988, income for the sample firms actually increased by 19 percent (\$11.4 million to \$13.6 million). Thus, the sample producers anticipate income to grow at a rate slightly less than it has previously. Despite a slower growth in gross income, the industry can still improve net income if costs remain constant or increase at a slower rate than does gross income. However, the combination of slow growth in gross income coupled with expanding production from existing growers and new entrants is likely to give rise to a marketing situation where wholesale firms aggressively compete against each other to sell their landscape plants. To remain competitive, firms must use sound production and marketing techniques in providing buyers with the products they desire. Gineo (1990) has found that retailers and landscapers prefer to purchase tall, high quality plants from a seller offering a variety of plant material. A strategy that produces plants with these characteristics would improve a firm's marketing position.

The largest gains in income are projected by the smallest sales class, where there is an anticipated 18 percent gain; while the largest sales class projects a 13.6 percent increase. In absolute value, the gains in income anticipated by Sales Class IV exceed those expected by firms in Sales Class I by a wide margin, which suggests that industry growth will primarily be attributable to increased sales by the larger firms. This expectation, coupled with the fact that in 1988 ten of the 36 responding firms received 93 percent of the sample income, indicates that the top producing firms will continue to set industry trends. It may also be noted that 72 percent of the sample firms have gross incomes exceeding \$100,000 and approximately 39 percent of the 36 producers have incomes over \$250,000. The previous observations on incomes along with the fact that firms in Sales Class IV, the largest sales class, operated 98 percent of the acreage used in nursery production and employed 86, 80, and 59 percent of the full-time, part-time and seasonal employees, respectively, illustrate that the wholesale industry is dominated by firms in the highest sales class.

Using the income figures reported in Table 3 and the employment figures provided in Table 2, a labor performance measure was constructed for the different sales classes and the overall industry. This performance measure shows gross income earned per full-time equivalent employee. Full-time equivalents are developed by weighting full-time employees by a factor of 1, part-time employees by a factor of 0.66 and seasonal employees by a

factor of 0.33. The resulting data are reported in Table 4 and suggest that there is a positive correlation between firm size, based on sales class, and the performance of labor, as measured by gross income per full-time equivalent. The performance measure for labor in Class IV exceeds all others and is almost double that of Class III. A rationale to explain why this relationship exists cannot be provided without additional data and further research which are beyond the scope and objectives of this study. However, plausible reasons to explain this relationship include: mechanization differences that result in labor saving technology for larger firms, economies of size, the number and skill level of managers in the larger firms, management experience, firm age, wages paid or incentive bonuses offered by larger firms, specialization or several other socioeconomic or organizational factors. Further investigation of the reasons why Class IV employees accounted for twice as much gross income per FTE would be beneficial in making management decisions. Despite the reason for the relationship, the information provided in Table 4 can be used as a guideline to illustrate the average performance of employees of firms in the industry. This information can be used by management to set standards for their employees or as a guideline to determine how their employees' performance compares to that of others in the wholesale industry.

Industry estimates

Based on the responses from the survey, the previously described data on acreage, employment and income can be used to project estimates for the entire industry in Connecticut. In making the estimate there is an implied assumption that those responding to the survey are representative of the industry with similar characteristics and firm distribution. Estimates for total acreage, employment and gross income, for the Connecticut industry in 1988, are reported in Table 5. These estimates were extrapolated from the acreage, employment, and income figures reported in the survey by weighting the reported figures by the ratio of the total number of firms in the industry to the responding number of firms.

The data of Table 5 suggest that the Connecticut nursery industry utilizes approximately 17,000 acres overall. Of these acres, 10,227 are directly used in nursery crop production. It is estimated that there are over 1,400 full-time, 900 part-time, and 400 seasonal workers in the industry. If the part-time and seasonal employees are converted to full-time equivalents, there were in

excess of 2,250 full-time equivalent employees working in the production sector during 1988.

Based on the data supplied by respondents to this survey, gross income for the Connecticut nursery is estimated at \$106.8 million for 1988. When the gross income of the Connecticut wholesale nursery is compared to 1988 gross income for the dairy (72.7 million) and poultry (\$86.3 million) sectors (USDA^b), it is apparent that the nursery sector is larger. In another study, the wholesale value of Connecticut production in 1987 was reported to be \$94.7 million (USDA^a). Further, USDA has indicated that in recent years production has grown at approximately 10 percent annually in the United States. If the national growth trend is applied to the 1987 Connecticut figure, 1988 production would be estimated at \$104.2 million, which is less than a three percent difference from the \$106.8 million figure.

Management and clerical wages

Industry leaders and firm officers are concerned with attracting quality, skilled labor to the wholesale industry. In particular, there is an interest in knowing what industry management and clerical employees are earning. Thus, a portion of the survey focused on determining management and clerical wages. This wage information will provide firms with a basis to make decisions on wage offerings that attract and retain employees in the industry.

An analysis of the wage earnings of the managers and clerical staff currently employed by the nursery-greenhouse sector was conducted, and the results for the 36 wholesale growers are reported in Table 6. From these firms, observations on 88 managers and 51 clerical staff were obtained. It should be noted that firms were requested to classify managers according to these skill categories and that the respondent's interpretation of skill levels could vary across firms.

The three levels of managers are: Level I, the lowest level; Level II, the middle level; and Level III the highest or most skilled. The clerical staff are categorized as supervisory and non-supervisory. Table 6 provides average values of present and starting wages, along with the average year in which the earnings started for each of these categories. It can be observed that 44 individuals or 50 percent of the managers in the industry are categorized into Level II or the middle cadre, while 34 percent are Level III managers. Twenty-eight, or approximately 55 percent, of the clerical staff comprise the non-supervisory employees; the rest are supervisors.

As expected, mean wage corresponds to skill level. Managers at Level I, Level II and Level III earn annual wages of \$22,164, \$28,064 and \$41,283, respectively. A large differential occurs between the first two Levels and Level III. Similarly, there is a substantial wage differential between supervisory and non-supervisory clerical workers, with supervisory clerical labor earning \$31,521 annually and non-supervisory workers earning \$18,058 per year. These differentials can be explained by skill level and also the length of time that Level III and supervisory employees have been with the firm. As noted in Table 6, these employees have the earliest starting dates. Overall, the 36 sample firms allocated wages of about \$4.1 million to employees in these categories. It should be emphasized that these wages exclude unskilled and skilled non-management labor.

The last column of Table 5 indicates the compounded annual rate of increase in wages. This rate is determined by finding the annual rate at which starting salaries would be compounded from the average starting year to obtain current wages. Level I managers, with a 9.04 rate of increase, and supervisory clerical labor, having an 8.17 rate of gain, have recorded higher rates of annual wage increases than their counterpart. These gains probably reflect the fact that the industry has made an attempt in the past to attract and retain new management and skilled clerical employees. The minimum increase is 6.7 percent annually and was earned by Management Level III employees who have the highest level of income. This information provides a basis for firms to compare their employees' earnings and changes in wages to those in the industry and to make appropriate adjustments which may attract additional labor to their firm.

Firm expansion and product pricing

The survey also examined two questions frequently discussed by the industry. The first concerns the problems Connecticut growers encounter when expanding firm size. The second focuses on the factors firms use when determining product prices. For the question on the problems faced when expanding size, respondents were asked to rank the top five factors limiting growth from a list that included water supply, market demand, competition, weather uncertainty, environmental regulations, own management skills, labor availability, land availability, labor quality, capital and the ability to hire and develop management. When identifying factors that affect product pricing, growers were asked to rank the five most important considerations used in de-

termining prices from the following list: cost of production, inflation, comparisons to other growers, plant quality, market demand, plant size, time of the year, inventory and last year's price.

An industry ranking was found by examining the mean scores of the rankings and by using a technique suggested by Garrett (Garrett, pp. 111-114). Essentially, Garrett's technique takes the ranking of the entire sample, converts it into a score and transmutes the score into a merit which designates the relative importance of the factor. The main advantage of this technique is that when respondents provide incomplete rankings (by identifying less than five factors in this case), the Garrett procedure places different weights on the rankings. Garrett's techniques were applied in this study because several of the survey respondents provided incomplete rankings. However, both the mean score method and Garrett's method resulted in identical rankings. One other consideration used in developing the industry rankings was that only those factors which were ranked by more than one third of the respondents were used.

Table 7 provides the relative importance, mean ranks, Garrett scores and percentage of firms checking an item for those factors which limit firm growth. The most important factor affecting expansion is labor availability, with a response rate of 81 percent. Ranking second is land availability. The third and fourth factors, the ability to hire and develop management and labor quality, are related to the first, labor availability. These results are supported by the fact that the nursery-greenhouse sector is a labor intensive industry, which anticipates an increased need for all types of labor, making it necessary to have an adequate supply of skilled and unskilled labor. To compound this problem, Connecticut presently has a low rate of unemployment and a highly competitive labor market. Thus, nursery firms should maintain attractive wage and benefit packets to encourage and sustain the needed supply of labor in the industry. The information provided in the previous section can serve as a guideline for determining wages.

The fifth, sixth and seventh factors, in order of importance, are environmental regulations, capital availability and market demand. The ranking presented in Table 7 suggests that resources, particularly labor, appear to play an important role in limiting firm expansion. Factors not critical in limiting firm growth are water supply, respondents' managerial abilities, and weather.

Table 8 provides the relative importance of those factors that influence product pricing, as well as the percentage of firms responding to each item. The most important factor considered in

product pricing is plant quality, with a response rate of 86 percent. Interestingly, Gineo (1990) found that when retailers and landscapers are purchasing nursery stock from growers, plant quality is the most desirable product attribute. This indicates that buyers and sellers of nursery stock are communicating.

Plant quality is followed by inflation, market demand, and comparisons to other growers, respectively, when operators make pricing decisions. The fifth most important factor, plant size, has also been shown to be an important product attribute to buyers when making purchases (Gineo, 1990). Overall, the results imply that growers in the Connecticut nursery industry are aware of buyer preferences, market demand and their competitors when pricing products.

¹ *By focusing on the wholesale portion of the industry, the scope of the study is reduced to a size compatible with the resources available to complete the study.*

Table One

Acreage characteristics of Connecticut growers by sales class.

Economic characteristics	Sales class I ^a		Sales class II	
	Average	Total	Average	Total
Number of firms	10		12	
Area owned ^b	14.10	141.0 (1.96) ^c	49.00	588.0 (8.19)
Owned area used in nursery	1.39	13.9 (0.34)	1.29	15.5 (0.37)
Area rented	0.20	2.0 (0.34)	1.33	16.0 (2.74)
Rented area used in nursery	0.15	1.5 (0.28)	0.83	10.0 (1.84)
Area available	14.30	143.0 (1.84)	50.33	604.0 (7.77)
Operated area used in nursery	1.54	15.4 (0.33)	2.12	25.5 (0.55)
Greenhouse area	3550.0	35500.0 (1.96)	13229.17	158750.0 (8.76)
Greenhouse area used in nursery	400.0	4000.0 (0.86)	800.00	9600.0 (2.07)

^a Sales class I = Firms with gross income between \$10,000-\$99,999. Sales class II = Firms with gross income between \$100,000-\$249,999. Sales class III = Firms with gross income between \$250,000-\$999,999. Sales class IV = Firms with gross income above \$1,000,000. This classification system is based on one typically used when U.S.D.A. reports farm characteristics. However, several of the U.S.D.A. classes were combined when only a few farms comprised a single U.S.D.A. class.

^b All figures represent acres except for greenhouse area which depicts square footage.

^c Figures in parentheses indicate percent of the grower group totals in last column.

Sales class III		Sales class IV		All growers (Gross Inc. > \$10,000)	
Average	Total	Average	Total	Average	Total
4		10		36	
99.25	397.0 (5.52)	606.1	6061 (84.33)	199.64	7187 (100)
13.12	52.5 (1.27)	404.9	4049 (98.02)	114.75	4130.9 (100)
7.50	30.0 (5.15)	53.5	535 (91.77)	16.19	583 (100)
0.0	0.0	53.2	532 (97.88)	15.09	543.5 (100)
106.75	427.0 (5.50)	659.6	6596 (84.89)	215.83	7770 (100)
13.12	52.5 (1.12)	458.1	4581 (98.0)	129.84	4674.4 (100)
31250.0	125000.0 (6.90)	149275.0	1492750 (82.38)	50333.33 (100)	1812000
6720.0	26880.0 (5.79)	42375	423750 (91.28)	12895.27	464230 (100)

Table Two

Employment characteristics and projections for a sample of Connecticut growers by sales class.

Characteristics	Sales class I ^a			Sales class II	
	Average	Total	Average	Total	
Number of firms		10		12	
EMP FT ^b	1988 1.80	18.0 (2.67) ^c	3.5	42 (6.22)	
PT	1988 1.30	13.0 (2.95)	3.67	44 (9.98)	
SES	1988 1.60	16.0 (7.84)	3.00	36 (17.65)	
EMP FT	1986 1.70	17.0 (2.76)	3.08	37 (6.01)	
PT	1986 1.20	12.0 (3.08)	3.25	39 (10)	
SES	1986 1.10	11.0 (6.15)	2.67	32 (17.88)	
PROJECTED					
EMP FT	1990 2.00	20.0 (2.43)	4.17	50 (6.08)	
PT	1990 1.60	16.0 (3.04)	3.50	42 (7.97)	
SES	1990 1.50	15.0 5.58	4.17	50 (18.59)	

^a Sales class I = Firms with gross incomes between \$10,000-\$99,999. Sales Class I = Firms with Gross Income between \$100,000-\$249,999. Sales Class III = Firms with Gross Income between \$250,000-\$999,999. Sales class IV = Firms with gross income above \$1,000,000. This classification system is based on one typically used when U.S.D.A. reports farm characteristics. However, several of the U.S.D.A. classes were combined when only a few farms comprised a single U.S.D.A. class.

^b FT = Full-time employees — (more than 30 hours/week and 8 or more months/year)

PT = Part-time employees — (less than 30 hours/week or 4-8 months/year)

SES = Seasonal employees — (less than 4 months/year)

^c Figures in parentheses indicate percent of grower group totals in last column.

Sales class III		Sales class IV		All growers (Gross Inc. > \$10,000)	
Average	Total	Average	Total	Average	Total
4		10		36	
7.00	28 (4.15)	58.70	587 (86.96)	18.75	675 (100)
7.75	31 (7.03)	35.30	353 (80.04)	12.25	441 (100)
7.50	30 (14.71)	12.20	122 (59.80)	5.67	204 (100)
5.25	21 (3.41)	54.10	541 (87.82)	17.11	616 (100)
8.50	34 (8.71)	30.50	305 (78.21)	10.83	390 (100)
5.00	20 (11.17)	11.60	116 (64.80)	4.97	179 (100)
7.25	29 (3.53)	72.30	723 (87.96)	22.83	822 (100)
6.25	25 (4.74)	44.40	444 (84.25)	14.64	527 (100)
12.25	49 (18.21)	15.50	155 (57.62)	7.47	269 (100)

Table Three

Wholesale level income —
Current and projected values for a sample
of Connecticut growers.

Characteristics	Sales class I ^a		Sales class II	
	Average	Total	Average	Total
Number of firms	10		12	
Current Gross Income (1988)	20750	207500 (0.43) ^b	1477701	1773250 (3.63)
Gross Income (1986)	19595	195950 (0.47)	138466	1661590 (4.05)
Expected Gross Income (1990)	24575	245750 (0.44)	160758	1929100 (3.49)
Expected % Increase in Income (1988-1990)	18.43		8.79	

^a Sales class I: Gross Income Range: \$10,000-\$99,999

Sales class II: Gross Income Range: \$100,000-\$249,999

Sales class III: Gross Income Range: \$250,000-\$999,999

Sales class IV: Gross Income Range: > \$1,000,000

^b Figures in parentheses indicate percent of group totals in last column.

Sales class III		Sales class IV		All growers (Gross Inc. > \$10,000)	
Average	Total	Average	Total	Average	Total
4		10		36	
400000	1600000 (3.28)	4523400	45234000 (92.66)	1355965	48814750 (100)
366875	1467500 (3.57)	3772394	37723940 (91.90)	1140249	41048980 (100)
429625	1718500 (3.11)	5137290	51372900 (92.96)	15351734	55266250 (100)
7.41		13.57		13.22	

Table Four

Labor efficiency measures for Connecticut nursery-greenhouse firms

Sales class	Gross income/ FTE ^a	Total FTE's
I		
\$10,000-\$99,999	6512.87	31.86
II		
\$100,000-\$249,999	21385.06	82.92
III		
\$250,000-\$999,999	27416.03	58.36
IV		
> \$1,000,000	52583.00	860.24
All growers		
> \$10,000	47237.94	1033.38

^a *FTE = Full-time equivalent employees = Full-time employees + 0.66 (Part-time employees) + 0.33 (Seasonal employees)*

Table Five

Estimates of the economic characteristics in the Connecticut nursery-greenhouse industry: 1988

Acreage controlled by nursery producers	16999
Acreage used in nursery production	10227
Full-time employees ^a	1477
Part-time employees	965
Seasonal employees	446
Gross income ^b (millions)	\$106.8

^a *Full-time employees work more than 30 hours per week and 8 or more months per year; part-time employees work less than 30 hours per week or 4-8 months per year; and seasonal employees work less than 4 months per year.*

^b *Includes wholesale production value only, excludes service activities.*

Table Six

Wage structure of management and supervisory employees — nursery-greenhouse sector

	Average present wages	Average starting wages	Average year started	Number of individuals	Percent annual increase in income over starting wage
A. <u>MANAGERIAL</u>					
Management Level I	22164 (310300)	13186 (184600)	1982	14	9.04
Management Level II	28064 (1274800)	13955 (654000)	1979	44	8.07
Management Level III	41283 (1325500)	18983 (609500)	1976	30	6.69
B. <u>CLERICAL</u>					
a) Non-Supervisory	18058 (505620)	11815 (330810)	1982	28	7.33
b) Supervisory	31522 (725000)	13280 (30545)	1977	23	8.17
Total	<u>4141220</u>	<u>1809455</u>		<u>139</u>	

Figures in parentheses indicate total values for each group.

Table Seven

Ranking for factors limiting firm expansion in the Connecticut nursery-greenhouse industry^a

	Relative importance or merit	Percent responding	Mean rank ^b	Garrett score
Labor availability	1	81	2.16	59.48
Land availability	2	55	2.24	58.70
Ability to hire and develop management	3	48	2.66	52.80
Labor quality	4	61	2.84	50.89
Environmental regulations	5	42	3.46	43.76
Capital	6	42	3.46	42.15
Demand	7	42	3.54	41.23

^a Ranking is based on mean scores for each item and the Garrett Technique (Garrett, pp. 111-114). To be considered, a factor had to be ranked by more than 33 percent of the respondents.

^b A lower mean rank and a higher Garrett score correspond with the more important factor.

Table Eight

Ranking for factors important in determining nursery-greenhouse product prices in Connecticut^a

	Relative importance or merit	Percent responding	Mean rank ^b	Garrett score
Plant quality	1	86	1.81	62.19
Inflation	2	75	2.63	52.03
Market demand	3	58	3.00	48.85
Comparison to other growers	4	44	3.06	47.75
Plant size	5	78	3.14	46.92
Inventory	6	34	4.08	33.84

^a Ranking is based on mean scores for each item and the Garrett Technique (Garrett, pp. 111-114). To be considered, a factor had to be ranked by more than 33 percent of the respondents.

^b A lower mean rank and a higher Garrett score correspond with the more important factor.

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