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Marketing Woody Ornamentals: Practices and Trends of Nurseries in Tennessee, 1965

University of Tennessee Agricultural Experiment Station

William E. Goble

William H. Brown

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MARKETING WOODY ORNAMENTALS: PRACTICES & TRENDS OF NURSERIES IN TENNESSEE, 1965

BY WILLIAM E. GOBLE &
WILLIAM H. BROWN

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PREFACE

This report is published as a contribution to the Marketing Research Project (SM-33) on the woody ornamental nursery industry in the Southern Region. States cooperating in the project were Alabama, Florida, Georgia, Kentucky, Mississippi, South Carolina, Texas, and Virginia. Data for Louisiana, North Carolina, and Tennessee were collected by the Economic Research Service.

This report contains data collected in Tennessee by the Economic Research Service with comparisons to the regional report, **Marketing Woody Ornamentals: Practices and Trends of Nurseries in the South**, Bulletin No. 143 in the Southern Cooperative Series, Auburn University, April 1969.

The authors express their appreciation to Stephen M. Raleigh, Jr., and Jules V. Powell, Agricultural Economists, Economic Research Service, and to Cecil Fuller, formerly of the University of Tennessee, and to nurserymen in the State who cooperated in this study.

SUMMARY

The woody ornamental industry continues to grow in importance in the State's agricultural economy. In 1965, Tennessee nurserymen's income from woody ornamentals was about $7,000,000, excluding greenhouse products, compared with about $2,000,000 in 1950. Acreage of certified nursery stock of woody ornamentals increased from slightly over 3,000 acres in 1950 to almost 12,000 acres in 1965, or an increase of about 300 percent. In 1965, of the total woody ornamental plants sold, by the 62 firms studied, 6.7 percent were broadleaf evergreens, 14.9 percent narrowleaf evergreens, 62.5 percent deciduous shrubs, and 15.9 percent were shade and ornamental trees.

The woody ornamental plants produced and marketed in Tennessee in 1965 totaled 16,523,512 plants, as follows: broadleaf evergreens, 1,120,070; narrowleaf evergreens, 2,454,725; deciduous shrubs, 10,340,420; and ornamental trees 2,626,297. These plants were prepared for sale in five forms: rooted cuttings, bare root, in liners, in containers, and balled and burlapped. Liners, and balled and burlapped were the forms used for most all of the broadleaf and narrowleaf evergreens. Deciduous shrubs and ornamental trees were most often marketed as bare root.

Tennessee nurseries produce many genera of woody ornamentals in the four classes. The most common broadleaf evergreens include **Abelia, Buxus, Euonymus, Ilex,** and **Mahonia**; narrowleaf evergreens: **Juniperus, Pinus, Taxus, Thuja,** and **Tsuga**; deciduous shrubs: **Forsythia, Hibiscus, Ligustrum, Spiraea,** and **Hydrangea**; shade and ornamental trees: **Acer, Cornus, Malus, Populus,** and **Cercis.**

Sales of woody ornamentals for the 62 firms studied in Tennessee averaged $32,814 compared with an average of $39,519 for all firms studed in the 11 states of the Southern Region. In Tennessee, sales of corporations averaged 16 times more than sales of proprietorships and 9 times more than sales of partnerships. In the Southern Region, the sales for corporations averaged only 5 times more than proprietorships, and about 2.2 times more than sales of partnerships. Although proprietorships represented about 70 percent of all types of firms, in Tennessee they accounted for only 30 percent of sales. In contrast, corporations comprised 9 percent of the 62 firms studied in Tennessee and accounted for 55 percent of sales.

Local sales were made to consumers, retailers, wholesalers, other growers, and landscape contractors. Annual local sales for very large, large, medium, small, and very small firms averaged \$27,086, \$14,906, \$4,600, \$9,679, and \$3,427 respectively.

Sales to Atlanta, Georgia, comprised over half of the volume of sales to all Southern cities. Shipments to Illinois, Michigan, Ohio, and Pennsylvania included 74 percent of the sales to states outside the South.

Using sales per man-hour as a criterion in Tennessee, the large firms consisting of corporations, proprietorships, and partnerships had the highest average amount of sales per man-hour for the five firm sizes. The comparable firms in the Southern Region had the highest amount of sales per man-hour in the very large firms.

Labor shortage, weather hazards, and weed control were major problems for the woody ornamental industry in Tennessee. The shortage of labor emphasized the need for increased mechanization and improved efficiency in woody ornamental production and preparation for marketing.

About 35 percent of the 62 firms reported a change in consumer preference for plants that included: more ornamental trees, broadleaf evergreens, dwarf plants, Yews, Bush Honeysuckle, Persian Lilac, and Flowering Almond.

About half of the growers planned to increase the size of their businesses by 1970. Labor shortage and problems associated with labor were listed as major problems by 20 of the 35 firms that did not plan to expand their businesses. Age and poor health were given as reasons by the remaining firms for not expanding business.

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by

William E. Goble and William H. Brown*

INTRODUCTION

The woody ornamental nursery industry in Tennessee continues to grow in importance in the State's agricultural economy. In 1965 Tennessee nurserymen's income for woody ornamentals was about $7,000,000, not including greenhouse products. Acreage of growing certified nursery stock increased from 3,200 acres in 1950 to 7,300 acres in 1957 and to 12,000 acres in 1967 (Figure 1).

During the period 1950-67, growth in the nursery industry has not been confined to Tennessee. There has been considerable growth in the industry in most parts of the country in the past two decades. Since World War II this growth can be attributed to several factors which have favored the nursery industry, including construction of private and public buildings, increases in population, personal income, and leisure time. Since woody ornamentals fall into the general classification of amenity items, income and leisure time have a definite influence on demand. The changes in the industry—including consumer preference for plants and forms in which they are marketed, labor problems, and technological changes—make it desirable to periodically up-date and analyze data on this important segment of the State's agriculture.

*Assistant Professor of Agricultural Economics and former Instructor of Agricultural Economics, respectively, Department of Agricultural Economics and Rural Sociology, University of Tennessee.

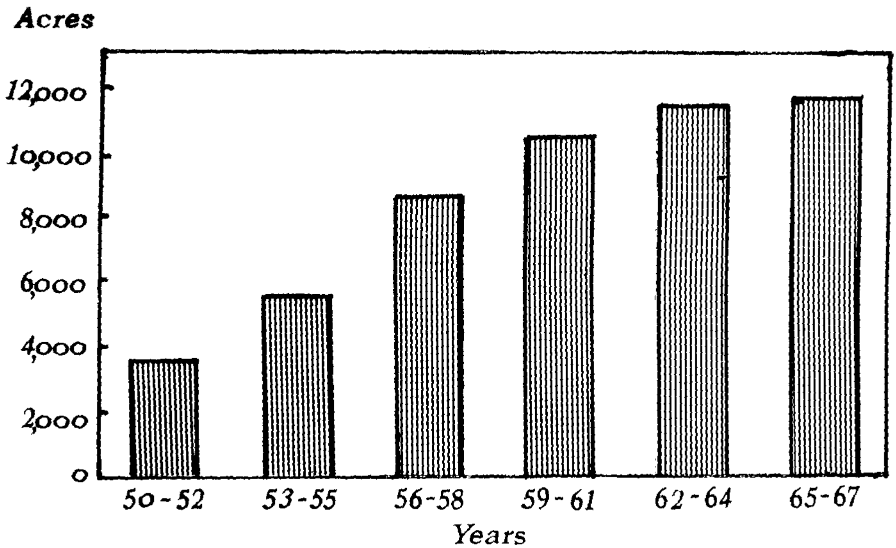


Figure 1. Certified commercial nursery acreage, Tennessee, 1950-1967. Source: Lists of Tennessee certified nurseries, collectors of native wild plants and nursery dealers, 1950-1967, Department of Agriculture, Division of Plant Industries, Ellington Agricultural Center, Nashville, Tennessee.

OBJECTIVES

The objectives of the study were: 1) to determine the structure of the woody ornamental nursery industry in Tennessee, and 2) to determine the marketing practices, trends and problems in the industry.

PROCEDURE

Data for the study were obtained by interviewing 62 nursery managers or owners throughout the State. Those interviewed were selected from replies to a short mail questionnaire sent to all nurseries licensed with the Tennessee Department of Agriculture. A second mailing was made to those not answering the first. Because the data were incorporated in the SM-33 Technical Committee's Southern Regional Project, the sampling procedure was as outlined by the Regional Committee. This sample called for rejecting all nurseries whose volume of sales were less than $2,000 in 1965 and including all nurseries reporting $50,000 or more during the same year. Fifty percent of the remaining respondents were selected randomly.

Data in this report often differ from those in the regional report because the data published in the regional report have been adjusted to represent the total estimated "universe" for woody ornamentals in each of the 11 southern states. Data reported here represent only the averages for the 62 firms studied out of 167 commercial firms in Tennessee, unless indicated otherwise.

Production within a firm was classified according to plant types and growing methods. Five categories of plant types were used. They were: 1) broadleaf evergreens, 2) narrowleaf evergreens, 3) deciduous shrubs, 4) shade and ornamental trees, and 5) vines and ground covers. Methods of production and form in which plants were sold were divided into five groups as follows: 1) rooted cuttings, 2) liners, 3) containers, 4) bare root, and 5) balled and burlapped. It would be possible for a nursery to produce and sell any one plant class in all five forms; however, most nurseries tend to specialize in only one or two methods of production and forms for marketing.

Firms were classified by dollar volume of sales (Table 1).

Table 1. Annual sales by size of firm, 62 commercial nurseries, Tennessee, 1965

Size of firm	Annual sales	Total
	Dollars	No.
Very large	100,000 and over	7
Large	50,000 - 99,999	9
Medium	30,000 - 49,999	8
Small	10,000 - 29,999	14
Very small	2,000 - 9,999	24
Total		62

GENERAL CHARACTERISTICS OF WOODY ORNAMENTAL NURSERIES

Annual Sales

The woody ornamental nursery industry in Tennessee was characterized by relatively small firms. Many were operated entirely with family labor. Other small firms operated with family labor supplemented with additional hired labor during the busiest season. Table 1 shows that 24 of the firms in the survey classified as very small had sales less than $10,000. Thirty-eight of the firms classified as small and very small had sales less than $30,000.

Age of Firms and Management

Only seven of the firms were established before 1930. Fifty percent of the firms were established during the period 1950-59 (Table 2). The oldest firm studied was established in 1887. The older nurseries generally had the higher volume of sales, but there appears to be less correlation between size and age of firm than might be expected.

Table 2. Distribution of firms, by date of establishment and by size, 62 commercial nurseries, Tennessee, 1965

Size group	Before 1930	1930-1939	1940-1949	1950-1959	1960-1965	Total firms
	Year established					
	Number of firms					
Very small	--	2	3	13	6	24
Small	1	1	3	8	1	14
Medium	2	1	1	3	1	8
Large	--	1	3	5	--	9
Very large	4	1	--	2	--	7
Total	7	6	10	31	8	62

Types of Firms

About three-fourths of the firms were operated as proprietorships. Partnerships and corporations, as listed, accounted for ten and six, respectively, of the 62 firms. Forty-two percent of the very large firms (with annual sales over $100,000) were corporations; 29 percent each were partnerships and proprietorships (Table 3).

Table 3. Distribution of owners by types of organization and size of firm, 62 commercial nurseries, Tennessee, 1965

Size group	Type of firm					
	Proprietorship		Partnership		Corporation	
	No.	%	No.	%	No.	%
Very large	2	29.0	2	29.0	3	42.0
Large	7	77.8	1	11.1	1	11.1
Medium	5	62.5	2	25.0	1	12.5
Small	12	85.7	2	14.3	--	0.0
Very small	20	83.3	3	12.5	1	4.2
Total firms	46	74.2	10	16.1	6	9.7

In Tennessee, sales of corporations averaged 16 times more than sales of proprietorships and nine times more than sales of partnerships. In the Southern Region, the sales of corporations averaged only five times more than proprietorships and 2.2 more than sales of partnerships (Table 4).

Table 4. Average value of sales of woody ornamentals produced by 62 commercial nurseries in Tennessee and 1,324 firms in the Southern Region, 1965

Type of organization	Tennessee	Southern region
Proprietorship	$16,574	$20,359
Partnership	29,238	44,435
Corporation	272,889	110,095
All firms	32,814	39,519

Location by size of firm varied considerably in the geographical areas of the State. Forty percent of the firms located in East Tennessee were very small firms, 20 percent medium size, and 40 percent of the firms were large (Table 5). In Middle Tennessee, about 65 percent of the firms were very small and small, while about 12 percent each of the firms were medium, large, and very large. In West Tennessee, 67 percent of the firms in the area were very small, 11 percent medium size, and 22 percent very large firms. See Figure 2A for location of these firms by counties, and geographical areas and also Figure 2B for the location of all certified nurseries in Tennessee.

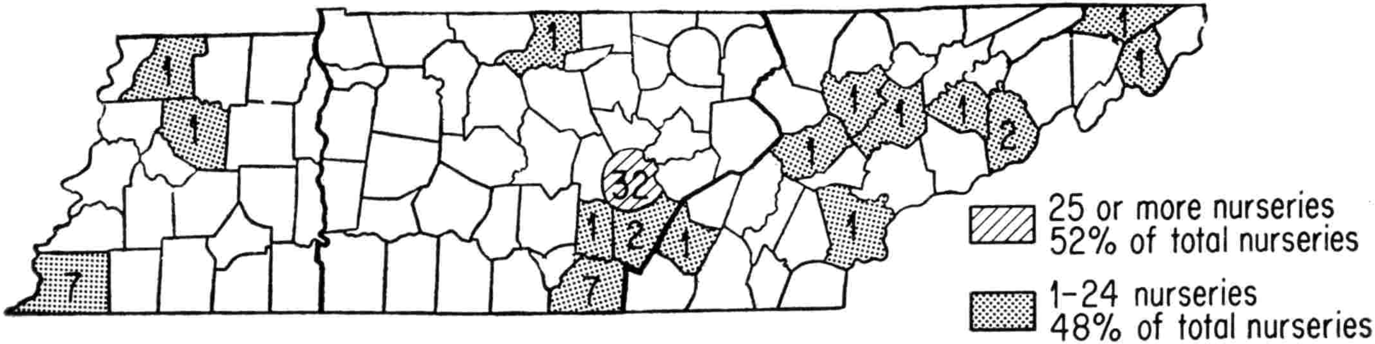
Table 5. Size of firm, by area of state, 62 commercial nurseries, Tennessee, 1965

Area of state	Size of firm: Very small	Small	Medium	Large	Very Large
	Percent of total firms in area				
East	40.0	–	20.0	40.0	
Middle	32.6	32.6	11.6	11.6	11.6
West	67.0	–	11.0	–	22.0

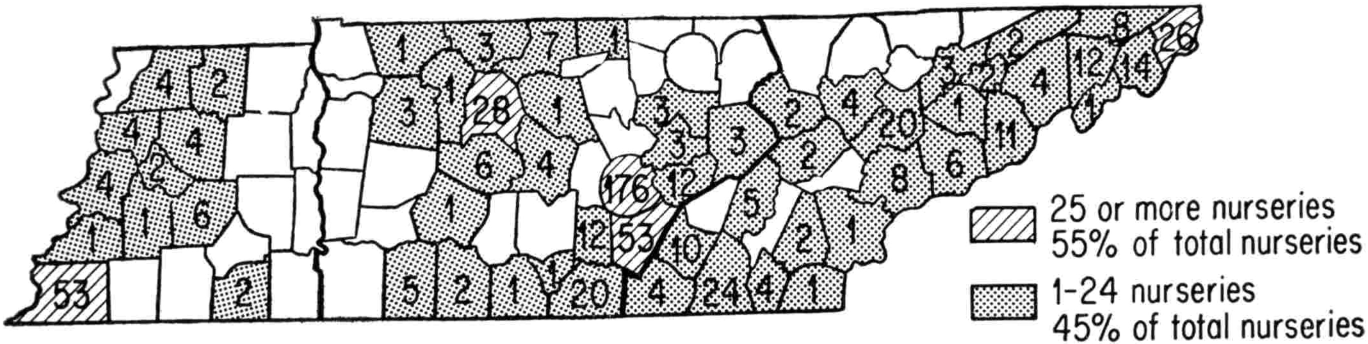
Labor Efficiency

By type of firm. All firms employed both full-time and part-time labor. The employment of full-time and part-time labor varied directly with the size of business and sales. Sales per man-hour were used as a criterion to measure efficiency of the types and size of firms (Table 6).

Partnerships achieved the highest average sales per man-hour ($3.79) for the five firm sizes. This was $1.16 and $1.58, respectively, more than the average sales for proprietorships and corporations.



2A. Location, by counties, and by geographical area, 62 commercial nurseries in sample, Tennessee, 1965.



2B. Location, by counties and by geographical area, 607 certified commercial nurseries, Tennessee, 1965.

Source: List of Tennessee Certified Nurseries, 1965 Department of Agriculture, Division of Plant Industries, Ellington Agricultural Center, Nashville, Tennessee.

Table 6. Sales per man-hour for woody ornamentals, by size and type of organization, 62 commercial firms, 1965

Size of firm	Type of firm: Proprietorship	Partnership	Corporation	All types
	– – – – – – – – – – –	– – – – – Dollars	– – – – – – – – – – –	
Very large	$2.36	$2.31	$3.46	$3.09
Large	5.65	6.11	2.56	5.19
Medium	2.33	6.95	1.59	2.23
Small	1.34	2.40	--	1.38
Very small	1.45	1.20	1.25	1.39
Average	$2.63	$3.79	$2.21	$2.66

Very large firms (sales over $100,000) representing proprietorships, partnerships, and corporations had average sales per man-hour of $3.09 for the three types of firms. Large firms (sales from $50,000-$99,999) had sales per man-hour of $5.19 or $2.10 more than very large firms, which indicated there may be diseconomy to scale, although this could also be due to several other factors.

The small firms, which included only proprietorships and partnerships, reported the lowest average sales per man-hour for the three types of firms ($1.38).

By age of manager group. For all types of firms the sales per man-hour increased directly as the age of the manager increased up to 50-59 and then declined (Figure 3).

Production Practices

Average acreage for field-grown narrowleaf evergreens (72 acres) and broadleaf evergreens (34 acres) was higher than for shade and ornamental trees, and deciduous shrubs (Table 7). Broadleaf, narrowleaf evergreens, shade, and ornamental trees were usually sold after 3 years' growth and deciduous shrubs after about 2 years, respectively. The total acres required per acre of annual sales for evergreens, shade, and ornamental trees were 4 acres and deciduous shrubs about 3 acres, respectively.

MARKETING PRACTICES

Method of Preparing Plants for Sale

For analytical purposes, woody ornamentals were separated into four classes: broadleaf evergreens, narrowleaf evergreens, deciduous shrubs, and shade and ornamental trees. (Vine classification was deleted because of very small volume.) About 62 percent

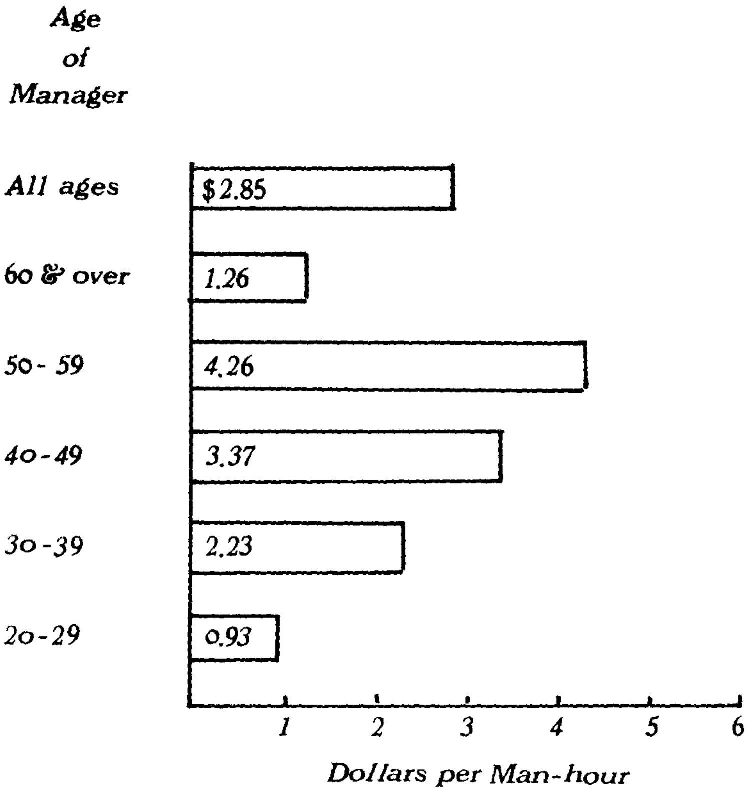


Figure 3. Sales per man-hour, by age of manager, 62 commercial nurseries, Tennessee, 1965.

of all woody ornamental plants marketed by Tennessee nurseries in 1965 were deciduous shrubs, 16 percent shade and ornamental trees, and 15 percent narrowleaf evergreens with the remaining 7 percent broadleaf evergreens (Table 8).

About 57 percent of all plants sold by the Tennessee nurseries were bare root, 23 percent liners, 7 percent rooted cuttings, and about 12 percent balled and burlapped (Table 8). About 60 percent of the broadleaf evergreens were marketed as liners while only about .3 percent of the narrowleaf evergreens were marketed bare root. About 74 and 66 percent, respectively, of deciduous shrub and shade and ornamental trees were sold in the bare root form.

Advertising

Advertising in some form was used by 57 of the 62 nurseries (Table 9). The advertising was done through local papers, trad

Table 7. Production practices for woody ornamentals, by class of plants, 62 nurseries, Tennessee, 1965

Class	Number of farms reporting field grown stock	Average acreage field grown stock	Usual age at sale	Fallow years before replanting	Total acres required per acre of annual sales
Broadleaf evergreens	35	33.9	3.0	1.0	4.0
Narrowleaf evergreens	30	72.4	3.1	1.0	4.2
Deciduous shrubs	43	18.7	2.0	1.0	2.8
Shade and ornamental Trees	49	25.8	3.0	1.0	4.1

Table 8. Method used in preparing woody ornamentals for marketing, 62 commercial firms, Tennessee, 1965

Class	Forms used for marketing					
	Rooted cuttings	Liners	Containers	Bare root	Balled and burlapped	Total
	Plants					
Broadleaf evergreens	4,000	664,500	23,900	29,700	397,970	1,120,070
Percent of plants prepared by various methods	.4	59.3	2.1	2.7	35.5	100.0
Narrowleaf evergreens	--	1,550,000	3,350	6,000	895,375	2,454,725
Percent of plants prepared by various methods	--	63.1	.2	.3	36.5	100.0
Deciduous shrubs	1,210,000	980,100	825	7,699,050	450,445	10,340,420
Percent of plants prepared by various methods	11.7	9.5	.1	74.4	4.3	100.0
Shade and ornamental trees	--	636,766	1,700	1,631,291	356,530	2,626,297
Percent of plants prepared by various methods	--	24.2	.1	62.1	13.6	100.0
Total	1,214,000	3,831,366	29,775	9,366,041	2,100,320	16,523,512
Percent of all plants prepared by various methods	7.3	23.2	.2	56.6	12.7	100.0

Table 9. Forms of advertising used by 62 commercial nurseries, Tennessee, 1965

Size of firm	Method of advertising: Local paper	Trade magazine	Catalog	Radio	Other[a]	Did not advertise
	Number of nurseries					
Very small	1	1	7	1	3	5
Small	2	1	3	0	0	0
Medium	1	1	4	0	3	0
Large	3	8	2	1	6	0
Very large	0	6	3	0	0	0
Total	7	17	19	2	12	5

[a]Price list, trade conventions, letters.

magazines, catalog, radio, and other methods which included price lists, letters, and trade conventions.

Labeling

Forty-four of the 62 firms sold plants under their own label. Only one of the firms in Tennessee packaged plants under a buyer's label compared with 61 percent of the nurseries in the Southern Region.

Grading

Although there are no Tennessee standards, the standards for nursery stock as specified by the Association of American Nurserymen are generally used.

Transportation

Woody ornamentals are usually shipped to buyers in trucks. Parcel post was used by only one nursery. Local sales were usually delivered in the seller's truck, but wholesalers usually picked up plants at the nursery. Hired carriers were used by 43 of the 62 firms. Some of the problems reported by the nurserymen were: 1) difficult to get carrier to transport multiple stop loads; 2) carrier is in a position to be more selective on loads accepted during the season; 3) stock may be left in terminal for some time; 4) some stock is lost in delivery and some shipments are too long in transit; and 5) hired truckers are reluctant to haul nursery stock because it is bulky.

Pricing Policies

In Tennessee, as in the Southern Region, generally the nurserymen reported the following as of major importance in establishing prices for nursery products: competition of larger nearby nurseries, cost of producing nursery plants, and grade of plants.

Ninety-one percent of the nurserymen reported prices for a specific type and grade of plants were reasonably stable.

Credit

About one-fourth of the 62 firms had problems collecting accounts receivable. About one-third of the nurseries in the Southern Region reported the same problems.

MARKETING WOODY ORNAMENTALS

Kinds of Woody Ornamentals Sold

The most common broadleaf evergreens marketed were **Abelia, Buxus, Euonymus, Ilex, and Mahonia** (Table 10).

The most common narrowleaf evergreens sold were: **Juniperus, Thuja, Pinus, Tsuga,** and **Taxus** (Table 11).

The most common deciduous plants sold were: **Ligustrum, Hibiscus, Forsythia, Spiraea,** and **Hydrangea** (Table 12).

The most common shade and ornamental trees marketed were: **Acer, Cornus, Populus, Malus,** and **Cercis** (Table 13).

The Tennessee nurseries grow and market a considerable number of genera of woody ornamentals. A comparison of the five most common genera produced in the Southern Region and Tennessee for the four types of woody ornamentals are shown in Table 14.

Major Market Areas

The principal Southern city in which Tennessee nurserymen marketed woody ornamental plants was Atlanta, Georgia. Sales to Atlanta, Georgia comprised over half of the volume of sales made to all Southern cities (Table 15). Table 16 indicates the states, outside of the South, in which woody ornamentals were marketed. Four states—Illinois, Michigan, Ohio, and Pennsylvania—accounted for about 74 percent of the out-of-state sales.

Market Outlets

Local sales were made to individual consumers, retailers, wholesalers, and landscape contractors. The very large firms had average local sales per firm of about $27,000; however, local (25-mile radius) sales for large firms averaged $15,000, medium firms $9,600, small $4,600, and very small firms averaged $3,427 annually

Over 50 percent of the sales of the very small and small firms were local. The medium size firms sold over 50 percent of thei

Table 10. Kind and number of broadleaf evergreens sold, methods of preparation for sale, 62 commercial nurseries, Tennessee, 1965

Genus	No. of nurseries	Form used for marketing: Rooted cuttings	Liners	Containers	Bare root	Balled and burlapped	Total plants
		– – – – – – – – – – – –	– – – – – – –	Number	– – – – – – –	– – – – – –	
Abelia	8	– –	21,500	100	23,500	1,700	46,800
Berberis	5	– –	– –	50	– –	2,625	2,675
Buxus	17	1,000	20,000	800	– –	30,210	52,010
Camellia	2	– –	– –	50	– –	2,000	2,050
Euonymus	8	1,000	12,000	2,100	6,000	10,500	31,600
Ilex	28	1,000	517,000	16,800	– –	271,440	806,240
Illicium	1	– –	– –	– –	– –	2,000	2,000
Jasmine	1	– –	– –	100	– –	– –	100
Ligustrum	6	– –	– –	– –	– –	5,850	5,850
Magnolia	5	– –	– –	– –	– –	1,295	1,295
Mahonia	5	– –	20,000	200	– –	3,225	23,425
Nandina	3	– –	– –	100	– –	600	700
Photinia	2	– –	1,000	– –	– –	1,000	2,000
Prunus	3	– –	– –	– –	– –	3,035	3,035
Pyracantha	4	– –	– –	400	– –	375	775
Rhododendron[a]	5	– –	– –	3,000	– –	1,650	4,650
Viburnum	2	– –	– –	– –	– –	515	515
Other[b]	17	1,000	73,000	200	200	59,950	134,350
Total		4,000	664,500	23,900	29,700	397,970	1,120,070

[a]Includes Azaleas.

[b]Names were not listed.

Table 11. Kind and number of narrowleaf evergreens sold, and methods of preparation for sale, 62 commercial nurseries, Tennessee, 1965

Genus	No. of nurseries	Forms used for marketing: Rooted cuttings	Liners	Containers	Bare root	Balled and burlapped	Total plants
		– – – – – – – – – – – – – Number – – – – – – – – –					
Cedrus	1	– –	– –	– –	– –	375	375
Chamaecyparis	4	– –	– –	– –	– –	805	805
Juniperus	22	– –	950,000	2,800	4,000	551,250	1,508,050
Picea	8	– –	– –	– –	– –	13,795	13,795
Pinus	15	– –	– –	200	– –	52,430	52,630
Taxus	12	– –	– –	50	1,000	18,560	19,610
Thuja	17	– –	400,000	300	1,000	147,340	548,640
Tsuga	15	– –	– –	– –	– –	29,480	29,480
Other[a]	6	– –	200,000	– –	– –	81,340	281,340
Total		– –	1,550,000	3,350	6,000	895,375	2,454,725

[a]Names were not listed.

Table 12. Kind and number of deciduous plants sold, 62 commercial nurseries, Tennessee, 1965

Genus	No. of nurseries	Rooted cuttings	Liners	Containers	Bare root	Balled and burlapped	Total plants
		Forms used for marketing					
		Number					
Berberis	10	--	25,000	500	25,000	15,385	65,885
Buddleia	2	--	6,000	--	6,000	--	12,000
Chaenomeles	4	--	15,000	--	20,400	--	35,400
Deutzia	9	--	13,000	--	96,000	10,000	119,000
Forsythia	24	--	110,000	--	379,700	13,600	503,300
Hibiscus	10	--	161,500	100	585,500	--	747,100
Hydrangea	13	--	154,000	--	166,950	22,670	343,620
Lagerstroemia	4	--	4,000	--	7,500	60	11,560
Ligustrum	23	1,035,000	321,500	--	3,832,000	250,500	5,439,000
Lonicera	9	--	--	--	258,900	2,150	261,050
Philadelphus	10	--	8,100	--	131,100	--	139,200
Prunus	2	--	--	--	12,000	--	12,000
Rhododendron	5	100,000	--	--	100,000	111,030	311,030
Rosa	1	--	--	--	175,000	--	175,000
Spiraea	25	--	16,500	200	392,400	17,650	426,750
Syringa	3	--	--	--	20,000	825	20,825
Viburnum	6	--	8,500	--	10,000	2,000	20,500
Weigela	21	--	9,500	--	265,000	2,000	276,500
Other[a]	25	75,000	127,500	25	1,215,600	2,575	1,420,700
Total		1,210,000	980,100	825	7,699,050	450,445	10,340,420

[a]Names were not listed.

Table 13. Types of shade and ornamental trees sold, 62 commercial nurseries, Tennessee, 1965

Genus	No. of nurseries	Forms used in marketing: Rooted cuttings	Liners	Containers	Bare root	Balled and burlapped	Total plants
		Number					
Acer	39	--	146,625	--	303,200	95,205	545,030
Albizzia	5	--	515	--	20,515	2,000	23,030
Betula	8	--	10	--	7,360	4,725	12,095
Castanea	5	--	--	--	13,000	30	13,030
Cercis	11	--	67,050	--	84,550	13,200	164,800
Cornus	33	--	98,075	--	357,475	81,495	537,045
Fraxinus	8	--	15	--	6,585	3,050	9,650
Gingko	5	--	2,600	--	5,600	200	8,400
Gleditsia	4	--	6,000	--	8,300	600	14,900
Liquidambar	11	--	5,025	--	4,275	9,025	18,325
Liriodendron	8	--	30,000	--	16,550	3,965	50,515
Magnolia	10	--	150	700	5,150	25,650	31,650
Malus	19	--	17,300	--	154,500	51,095	222,895
Platanus	9	--	57,000	--	17,200	12,400	86,600
Populus	9	--	10,000	--	329,500	600	340,100
Prunus	16	--	7,000	--	95,500	5,235	107,735
Quercus	16	--	113,000	--	6,570	19,025	138,595
Salix	4	--	--	--	6,500	1,565	8,065
Ulmus	7	--	24,150	--	17,600	3,025	44,775
Other[a]	23	--	52,261	1,000	171,361	24,440	249,062
Total		--	636,776	1,700	1,631,291	356,530	2,626,297

Table 14: The five most important genera in each class of woody ornamentals produced and marketed by 62 commercial nurseries, in Tennessee and in the Southern Region, 1965

Tennessee		Southern Region
	Broadleaf evergreen	
Genera		**Genera**
Abelia		Buxus
Buxus		Gardenia
Euonymus		Ilex
Ilex		Ligustrum
Mahonia		Rhododendron
	Narrowleaf evergreen	
Juniperus		Juniperus
Pinus		Pinus
Taxus		Taxus
Thuja		Thuja
Tsuga		Tsuga
	Deciduous shrubs	
Forsythia		Forsythia
Hibiscus		Hibiscus
Ligustrum		Ligustrum
Spiraea		Rosa[a]
Hydrangea		Spiraea
	Shade and ornamental trees	
Acer		Acer
Cornus		Cornus
Malus		Malus
Populus		Populus
Cercis		Prunus

[a]Influenced by extremely large production in one area.

output within the region, while the large and very large firms sold a high proportion of their output outside the South (Table 17 and Figure 4). (See Appendix Table 1 for total value of sales by size of firm.)

The local sales by type of firms were primarily made by proprietorships and partnerships with 58 and 50 percent, respectively (Table 18). Corporations reported only 4 percent of local sales.

Table 15. Southern cities outside of Tennessee where woody ornamentals were marketed, 62 commercial firms, Tennessee, 1965

City	1965 sales Dollars	Percent of sales %
Atlanta, Ga.	$194,829	56.2
Roanoke, Va.	66,300	19.1
Washington, D. C.	24,800	7.2
Savannah, Ga.	22,100	6.4
Birmingham, Ala.	18,400	5.3
Norfolk, Portsmouth, Va.	11,500	3.3
Winston Salem, N. C.	8,750	2.5
Total	$346,679	100.0

Table 16. Shipments to states outside the south, 62 commercial nurseries, Tennessee, 1965

State of destination	1965 sales Dollars	Percent of sales %
California	1,350	.09
Illinois	309,240	21.74
Indiana	91,250	6.41
Iowa	22,680	1.59
Massachusetts	13,125	.92
Michigan	332,100	23.35
Missouri	112,500	7.92
New Jersey	33,740	2.37
New York	73,390	5.16
Ohio	192,950	13.56
Oregon	7,950	.56
Pennsylvania	215,915	15.18
Rhode Island	1,050	.07
Washington	15,300	1.08
Total	1,422,540	100.00

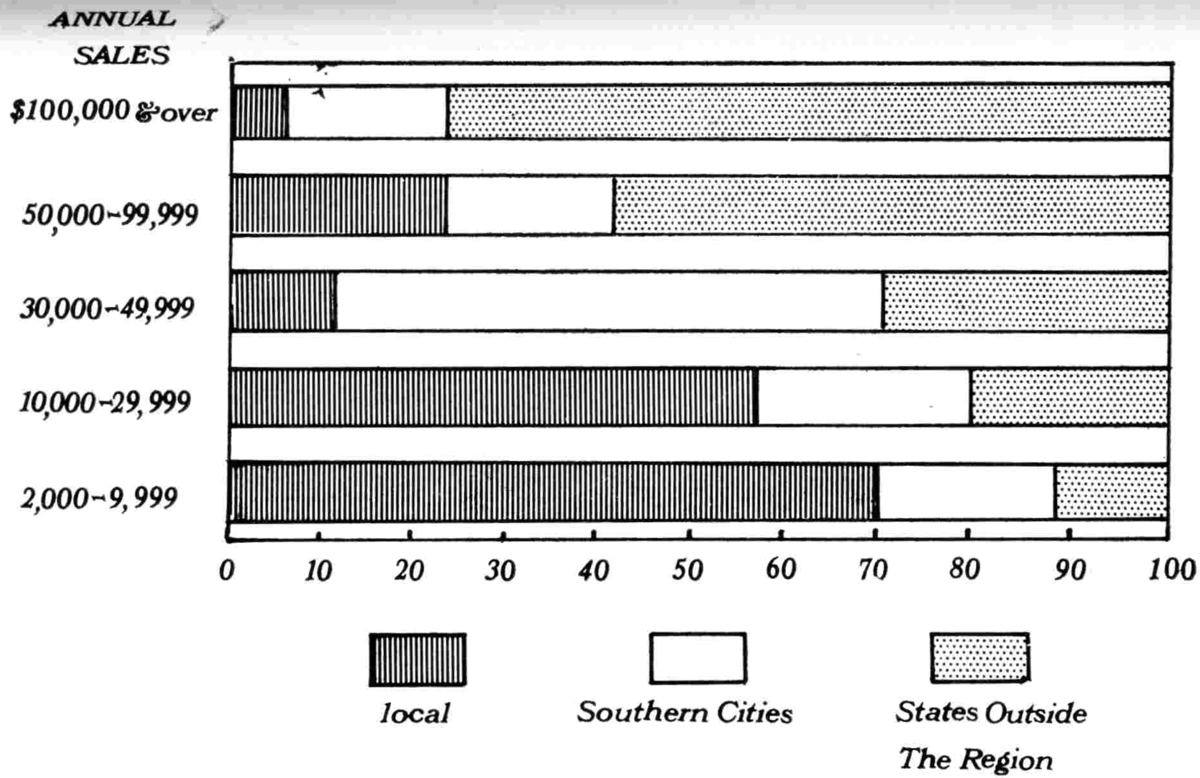


Figure 4. Percent of estimated sales, by market outlet, and size of firm, 62 commercial nurseries, Tennessee, 1965.

Table 17. Average sales per firm, by size of firm, to various outlets, 62 commercial nurseries, Tennessee, 1965

Size of firm	Local: Consumer	Local: Retailer	Local: Wholesaler	Local: Another grower	Local: Landscaper	Local: Total local	Non-local: Southern cities	Non-local: States outside South	Non-local: Total non-local
	Dollars								
Very large	--	16,543	9,543	286	714	27,086	77,850	350,064	453,000
Large	10,869	109	2,583	1,629	367	14,906	11,783	37,533	64,222
Medium	675	219	3,144	--	563	4,600	23,488	11,913	40,000
Small	63	1,368	8,061	179	9	9,679	3,879	3,586	17,143
Very small	511	1,236	1,545	38	--	3,427	933	585	4,946

Table 18. Market outlets by type of organization, 62 commercial nurseries, Tennessee, 1965

Ownership	Local: Consumer	Local: Retailer	Local: Wholesaler	Local: Grower	Local: Landscape contractor	Local: Total local	Local: Percent of total	Non-local: Southern cities	Non-local: States outside South	Total all outlets
	Percent									
Proprietorship	16.9	18.8	53.2	8.5	2.6	100.0	57.8	20.2	22.0	100.0
Partnership	.6	31.5	56.9	10.0	1.0	100.0	49.7	18.5	31.8	100.0
Corporation	20.0	27.0	12.0	40.0	1.0	100.0	4.0	38.2	57.8	100.0
All Types	14.1	22.0	50.0	11.8	2.1	100.0	51.1	21.6	27.3	100.0

Figure 5 indicates the percentage of sales by type of firm for the 62 firms studied. Proprietorships comprised 73 percent of the firms, but accounted for only 30 percent of sales. In contrast, corporations accounted for 9 percent of the firms with 55 percent of sales (Figure 5).

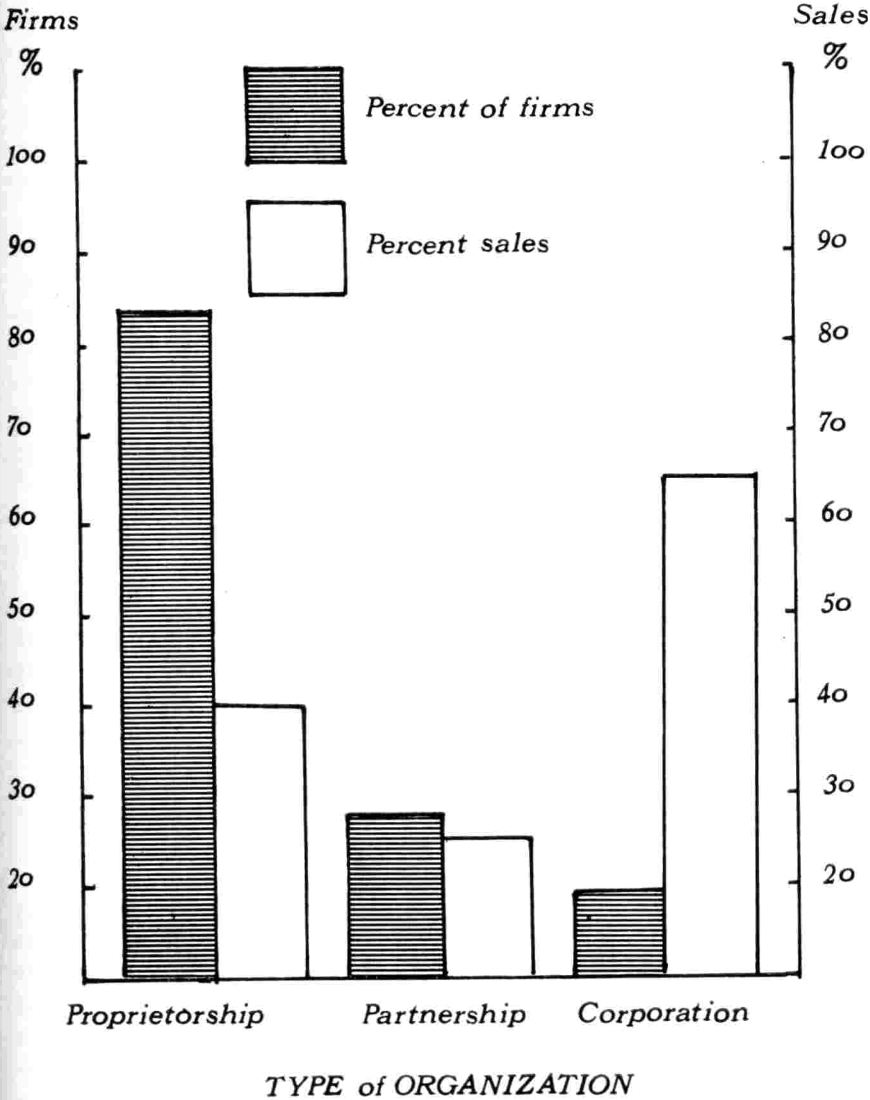


Figure 5. Percent of sales, by type of firm, 62 commercial nurseries, Tennessee, 1965.

MARKETING TRENDS OF WOODY ORNAMENTALS

Plant Preferences

About 35 percent of the firms reported a change in consumer preference for plants. The changes reported were increasing demand for:

1) ornamental trees
2) broadleaf evergreens
3) dwarf plants
4) Yews rather than Arborvitae and Junipers
5) Bush Honeysuckle, Persian Lilac, and Flowering Almond.

Preparing Plants for Sale

Fifteen of the firms indicated that consumer preference for balled and burlapped plants had increased since 1960. Two firms each indicated an increasing preference for bare root, container-grown plants, and larger stock. The other 37 firms reported no changes in marketing plans since 1960. In the Southern Region, operators of nurseries believed there would be an emphasis on the production of plants as liners and in containers. The regional study indicated a shift to containers for all types of plants, except ornamental trees which normally are marketed bare root.

Business Expansion

About half of the 62 operators planned to increase the size of their businesses by 1970. Labor shortage and problems associated with labor were listed by 20 of the 35 firms that did not plan to expand their businesses. Ten operators gave age and health as reasons for not expanding business.

PROBLEMS OF THE WOODY ORNAMENTAL INDUSTRY

Production

Labor shortage and weather hazards were the main problems affecting production practices of nurseries in Tennessee (Figure 6), with labor shortage ranking as number one. Twenty-two of the operators indicated that increased wages for unskilled labor was reducing their net returns. Weed control was listed as a problem by about 20 percent of the nursery managers. Several of them reported insect and disease control as a problem. The shortage of labor emphasized the need for increased mechanization and improved efficiency in woody ornamental production and preparation for marketing.

Sales to Landscape Contractors and Public Agencies

About 20 percent of the 62 firms in Tennessee sold plants directly to State, Federal, or other public agencies. Problems listed by three firms were: 1) too much red tape, 2) too large volume required to supply, and 3) tree size requirements too large. In addition, about one-fifth of the firms sold plants to landscape contractors for use in community or highway beautification. Three of these firms reported difficulty in collecting after sales and objected to the specifications of ball size as being too large.

Figure 6. Importance of problems in production of woody ornamentals, 62 commercial nurseries, Tennessee, 1965.

Appendix Table 1. Total value of sales by size of firm and outlets, 62 commercial nurseries, Tennessee, 1965

Size of firm	Location and type of outlet									
	Local							Non-local		
	Consumer	Retailer	Whole-saler	Another grower	Land-scaper	Local	Local	Southern cities	States outside South	All outlets
	Dollars									
Very large	--	115,800	66,800	2,000	5,000	--	189,600	530,950	2,450,450	3,171,000
Large	91,960	980	23,250	14,660	3,300	--	134,150	106,050	337,800	578,000
Medium	5,400	1,750	25,150	--	4,500	--	36,800	187,900	95,300	320,000
Small	875	19,150	112,850	2,500	125	--	135,500	54,300	50,200	240,000
Very small	12,271	29,675	37,083	921	2,300	--	82,250	22,400	14,050	118,700
Total	110,506	167,355	265,133	20,081	15,225	--	578,300	901,600	2,947,800	4,427,700

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