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Production and Marketing of Christmas Trees in Michigan  
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Research Report

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# RESEARCH REPORT

412

AGRICULTURAL BUSINESS

FROM THE MICHIGAN STATE UNIVERSITY  
AGRICULTURAL EXPERIMENT STATION EAST LANSING

## Production and Marketing of Christmas Trees in Michigan

By Lee M. James, Victor J. Rudolph and Melvin R. Koelling<sup>1</sup>

### INTRODUCTION

This report presents the results of a 1979 statewide survey of Christmas tree growers in Michigan. The study was conducted by the Department of Forestry, Michigan State University, and financially supported by the Agricultural Experiment Station and Cooperative Extension Service, Michigan State University.

Two populations were considered in this study: (1) organized growers of the Michigan Christmas Tree Association (MCTA); and (2) unaffiliated Christmas tree growers.

The first population was obtained easily. The MCTA provided a list of its 148 regular members and 25 associate members as of December, 1978. Unaffiliated growers were more difficult to locate. Lists of likely growers were compiled from miscellaneous sources—Forestry Department records, county extension personnel, and commercial tree nurseries (which supplied their lists of nursery stock buyers). A listing of 890 likely, unaffiliated growers was compiled.

Questionnaires were mailed early in 1979 to all persons and firms on the two lists. Two mailings were made, spaced about one month apart.

The 108 members of MCTA who responded, 98 of whom were Michigan growers, were considered representative of the 173 members of MCTA. The response indicates that 149 members of MCTA are active Christmas tree growers in Michigan.

Responders in the unaffiliated group included 143 Christmas tree growers and 92 growers who planted trees for other purposes. Twenty-seven questionnaires were nondeliverable by the post office. Assuming that



**Michigan is a leader in the production of plantation grown Christmas trees. Although some people prefer to choose and cut their trees, more than 90% of the Michigan crop is destined for retail markets. More than 60% of these go to other states.**

nonresponders would fall into Christmas tree grower and nongrower categories in the same proportion as responders, we calculated the unaffiliated Christmas tree grower population at 524. This estimate of the total unaffiliated population was increased to 562 when a subsequent mailing to members of MCTA produced a list of 38 additional growers who were not included in the earlier mail survey.

Except where otherwise noted, data presented in this report as aggregate totals of trees planted or sold have been expanded from reported data to represent the total estimated population of Christmas tree growers in Michigan.

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## CHRISTMAS TREE GROWERS

Numbers of current Christmas tree growers are listed by size of holding in Table 1. Most growers have relatively small operations and exert a minor influence on tree supply. A majority of growers are in the smallest size of holding class, 1,000-10,000 trees, but collectively, these growers account for only 3 percent of all trees planted. At the upper end of the scale, the 5 percent of the growers who have planted more than 200,000 trees account for 63 percent of all trees planted.

**Table 1. Numbers of Growers and Christmas Trees Planted, by Size of Holding, 1968-78.**

Size of holding (thousand trees)	Growers		Christmas trees planted <sup>1</sup>	
	Number	Percent	Number (million trees)	Percent
1-10	360	51	1.2	3
11-50	238	33	5.9	15
51-100	55	8	4.0	10
101-200	25	3	3.5	9
Over 200	33	5	24.8	63
Total	711	100	39.4	100

<sup>1</sup>Plantings by current growers over the period 1969-78.

Christmas tree growers are listed by occupation in Table 2. Thirteen percent of the population can be identified primarily as Christmas tree farmers, although the percentage is much higher for MCTA growers. Most growers have other primary occupations and engage in Christmas tree operations as a secondary occupation. Prominent among these growers are business-professional workers, part-time farmers and retired persons. Many retired persons might be considered to be primarily Christmas tree growers, but because of age and level of activity, they have identified themselves as retired persons.

Although a limited number of growers identify themselves as Christmas tree farmers, this occupation group accounts for 69 percent of the trees that have been planted (Table 3). Business-professional workers, part-time farmers, and retired persons, groups which comprise 69 percent of the grower population, account for only 25 percent of the trees planted.

A substantial number of growers, 39 percent of the total, has been in business more than 20 years (Table 4). Despite this strong evidence of stability in the industry, constant turnover occurs. Growers drop out of the business continually and new recruits appear. Twenty-one percent of the growers have been in business less than five years.

The location of Christmas tree plantings by current growers is illustrated in Figure 1. The map shows that plantings are concentrated in the west half of the Lower

**Table 2. Number of Christmas Tree Growers, by Grower Occupation, 1978.**

Grower occupation	All growers	MCTA growers	Unaffiliated growers
Christmas tree farmer <sup>1</sup>	89	65	24
Nursery operator <sup>2</sup>	20	4	16
Business-professional worker <sup>3</sup>	181	40	141
Farmer <sup>4</sup>	47	8	39
Part-time farmer <sup>5</sup>	108	18	90
Wage earner <sup>6</sup>	57	2	55
Retired <sup>7</sup>	199	6	193
Other	10	6	4
Total	711	149	562

<sup>1</sup>A person or firm engaged primarily in producing Christmas trees.

<sup>2</sup>A person or firm engaged in producing ornamental trees and shrubs.

<sup>3</sup>A person engaged primarily in business or a recognized profession.

<sup>4</sup>A person who devotes at least three-fourths of total working time to farming.

<sup>5</sup>A person engaged in farming on less than a three-fourths time basis, but who has other regular gainful employment.

<sup>6</sup>A person primarily in wage-earning status who is not engaged in farming.

<sup>7</sup>A person who has dropped out of one of the above-listed occupation classes because of age.

**Table 3. Christmas Trees Planted<sup>1</sup>, by Grower Occupation<sup>2</sup>.**

Grower occupation	All growers	MCTA growers	Unaffiliated growers
(Million trees)			
Christmas tree farmer	27.2	26.1	1.1
Nursery operator	.6	.6	
Business-professional worker	4.0	2.2	1.8
Farmer	.8	.4	.4
Part-time farmer	3.2	1.6	1.6
Wage earner	.8	.2	.6
Retired	2.6	— <sup>3</sup>	2.6
Other	.2	.2	— <sup>3</sup>
Total	39.4	31.3	8.1

<sup>1</sup>Plantings by current growers over the period 1969-78.

<sup>2</sup>Occupations are defined in Table 1.

<sup>3</sup>Negligible.

**Table 4. Number of Years Michigan Christmas Tree Growers Have Been in Business.**

Years	All growers	MCTA growers	Unaffiliated growers
(Percent of growers)			
1	4	4	5
2-4	17	14	19
5-7	10	11	9
8-10	7	6	9
11-15	12	9	14
16-20	11	13	9
Over 20	39	43	35
Total	100	100	100

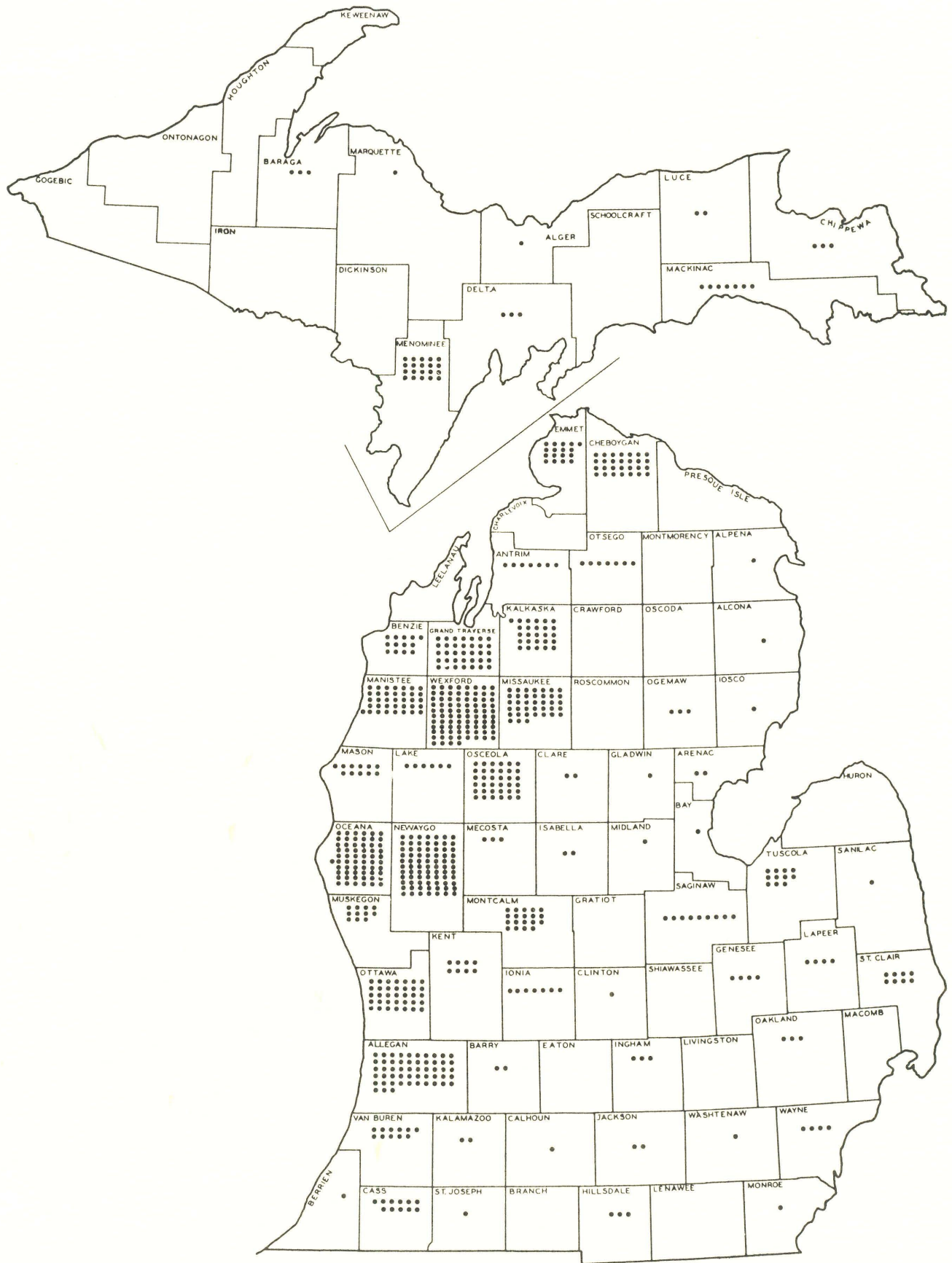


Fig. 1 Location of Christmas trees planted in Michigan during the 10-year period 1969-78. (Each dot represents 50,000 trees).



Peninsula; more than 80 percent of all trees planted are in this region.

### CHRISTMAS TREES PLANTED

The 10-year record of Christmas tree plantings by current growers is detailed in Table 5. Planting in 1978 of 6.7 million trees can be accepted as a reliable estimate of total Christmas tree planting in that year. Estimates for earlier years can be considered reliable for current growers, but they do not include plantings by growers who have dropped out of the business. The size of the margins between plantings by current growers and plantings by all growers is unknown, but annual sales of more than 3 million trees between 1976 and 1978 indicate that total plantings in the early years of the decade exceeded 3 million trees per year.

Recognizing that the statistics in Table 5 for years earlier than 1978 do not reflect plantings by growers who have dropped out of the business, it is still clear that the rate of total planting increased over the latter years of the decade. If this trend continues, or if it simply stabilizes, there will be substantial increases in the number of trees ready for harvest over the next decade.

Scotch pine is, by far, the predominant species planted, but as a percentage of the total, Scotch pine dropped from 86 percent of the total in 1969 to 67 percent in 1978. The slack in Scotch pine planting has been taken up by blue spruce, white spruce and Douglas-fir.

### CHRISTMAS TREE SALES

Estimates of trees sold by current growers are shown in Table 6. Sales in 1978 of 3.3 million trees can be accepted as a reliable estimate of total sales in that year. Estimates of sales in earlier years can be considered reliable for current growers, but they do not reflect total sales since they fail to include sales by growers who have dropped out of the business. In all years,

MCTA growers have accounted for more than 80 percent of Christmas tree sales.

Growers projected their expected sales for 5 years (Table 7). The conservatism of the estimates is difficult to explain since annual tree sales exceeded 3 million trees from 1976 to 1978. However, the overall trend shown is upward. Virtually all of the increased sales projected is in Scotch pine. There is no expectation of

**Table 6. Numbers of Christmas Trees Sold by Current Growers in Michigan, 1969-78.**

Year	All Growers	MCTA Growers	Unaffiliated Growers
(Million trees)			
1978	3.3	2.9	.4
1977	3.1	2.6	.5
1976	3.1	2.5	.6
1975	3.0	2.4	.6
1974	2.7	2.2	.5
1973	2.4	1.9	.5
1972	2.0	1.7	.3
1971	1.6	1.3	.3
1970	1.5	1.2	.3
1969	1.7	1.4	.3
Total	24.4	20.1	4.3

**Table 7. Projected Sales of Christmas Trees Based on Expectations of Growers, by Species, 1979-83.**

Species	1979	1980	1981	1982	1983
(Thousand trees)					
Scotch pine	2,041	1,939	2,207	2,238	2,657
Red pine	23	14	8	5	28
Austrian pine	16	16	19	20	26
White pine	8	9	10	14	21
White spruce	135	145	137	136	125
Blue spruce	120	94	94	90	111
Douglas-fir	153	158	148	141	148
White fir	6	7	8	13	16
Other	17	24	46	24	30
Total	2,519	2,406	2,677	2,681	3,142

**Table 5. Annual Christmas Tree Planting by Current Growers in Michigan, by Species, 1969-78.**

	Total 10 years	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969
(Million trees) <sup>1</sup>											
Scotch pine	30.2	4.5	4.1	3.7	3.8	3.3	2.9	3.1	1.4	1.6	1.8
Red pine	.3		.1				.1	.1			
Austrian pine	.4	.1	.1			.1	.1				
White pine	.8	.2	.1	.3		.1			.1		
White spruce	2.2	.5	.3	.2	.3	.3	.2	.1	.1	.1	.1
Blue spruce	2.3	.7	.4	.3	.2	.2	.1	.1		.1	.1
Douglas-fir	3.0	.6	.5	.4	.4	.4	.2	.1	.2	.1	.1
Other	.1	.1	.1								
Total	39.4	6.7	5.6	4.9	4.8	4.4	3.6	3.5	1.8	1.9	2.1

<sup>1</sup>Totals may not add due to rounding.

increase in sales of white spruce, blue spruce or Douglas-fir because the increase in planting of these species did not begin until about 1974 and sales from these expanded plantings will occur mainly after 1983.

### CHARACTERISTICS OF PRODUCTION

Spacing in Christmas tree plantations varies considerably, from less than 4×4 to more than 8×8 feet. Most commonly, pines are planted 6×6 feet. Such spacing, allowing 10 percent of the area for lanes needed in fire protection, spraying and harvest, will result in about 1,090 trees per acre. The actual average for pines in Michigan Christmas tree plantations is about 1,190 trees per acre. This is equivalent to a spacing of 5½×6 feet.

Spruces and Douglas-fir are also most commonly planted in a 6×6 ft. spacing, but closer spacings are used more frequently with these species than with pines. Their average spacing results in 1,230 trees per acre.

Survival of trees 3 years after planting is extremely variable for all species. Substantial numbers of growers report survival rates of 40 percent or less; many other growers report survival rates of 95 percent or more. Average survival rates by species are shown in Table 8:

Table 8. Average Survival Rates by Species of Christmas Trees.

Species	Trees Surviving	
	Percent	No. per acre
Austrian pine	80	950
Scotch pine	78	925
Red pine	78	925
White pine	75	950
White spruce	74	910
Blue spruce	70	860
Douglas-fir	70	860
White fir	65	800

Not all of the surviving trees will be sold. Reported sales data show the average number of trees sold per acre to be 800 for pines and 790 for other species. These figures mask a very wide range in the data reported by individual growers for all species—from less than 400 to more than 1,400.

#### Age of Planting Stock

Planting stock in Michigan Christmas tree plantations comes in a wide assortment of ages, but most growers have distinct preferences in their choices of planting stock (Table 9). About 80 percent of the pine planting stock is 2-0. Preferences in white spruce, blue spruce, Douglas-fir and white fir are all similar—some 50 percent of the planting stock is 2-0; 10 percent, 2-1; 10 percent, 2-2; and 20 percent, 3-0.

### Height of Trees Sold

Tree sizes vary over a wide range in accordance with the preferences of consumers. The most common sizes sold are in the 6-7 feet height range (Table 10). Average heights of trees sold in 1978 are as follows: Scotch pine, 6.2 feet; white and blue spruce, 6.8 feet; and Douglas-fir, 7.1 feet.

Table 9. Age of Planting Stock Used in Christmas Tree Plantations, by Species.

Age of Planting Stock	Scotch and other pines	White Spruce	Blue Spruce	Douglas-fir
(Years)		(Percent of growers)		
1-0	5	5	8	4
1-1	2	1	4	
2-0	81	51	51	54
2-1	4	10	7	10
2-2	2	9	6	4
3-0	5	19	19	21
Other	1	5	5	7
Total	100	100	100	100

Table 10. Average Height of Christmas Trees Sold from Plantations, by Species.

Height	Scotch and other pines	White Spruce	Blue Spruce	Douglas-fir
(Feet)		(Percent of trees)		
3-4	3	1	2	
4-5	11	2	3	3
5-6	22	17	20	18
6-7	43	37	38	30
7-8	19	32	18	24
8-9	2	8	13	15
Over 9	— <sup>1</sup>	3	6	10
Total	100	100	100	100

<sup>1</sup>Negligible.

#### Number of Years to Harvest

The time interval from planting until the first year of harvest is highly variable (Table 11). In Scotch pine the range is from 5 years or less to 11 years or more, but the average for all pine trees sold is 7½ years. White spruce, blue spruce and Douglas-fir take longer to mature; their average time interval from planting until the first year of harvest is 10 years.

#### Tree Removal in First Year of Harvest

Only a small portion of the stand is usually removed in the first year of harvest. In Scotch pine, e.g., 35 percent of the growers remove no more than 10 percent of the stand, but 6 percent of the growers remove more



**Table 11. Number of Years from Planting to First Year of Harvest, by Species.**

Number of Years	Scotch and other pines	White Spruce	Blue Spruce	Douglas-fir
(Percent of growers)				
5 or less	3			
6	17		1	3
7	30	6	1	6
8	34	12	10	6
9	6	14	10	11
10	5	30	30	34
Over 10	5	38	48	40
Total	100	100	100	100

**Table 12. Percentage of Trees Removed in the First Year of Harvest, by Species.**

Trees Removed	Scotch and other pines	White Spruce	Blue Spruce	Douglas-fir
(Percent)				
10 or less	35	52	54	59
11-20	26	19	20	28
21-30	17	14	12	10
31-40	8	12	11	
41-50	8	2	3	3
Over 50	6	1		
Total	100	100	100	100

than 50 percent of the stand (Table 12). Average first year removal is 23 percent in Scotch pine, 18 percent in white spruce, 16 percent in blue spruce, and 15 percent in Douglas-fir.

#### Number of Years to Complete Harvest

How many years does it take Michigan growers to clear stands after harvesting begins? A few clear their stands in the second year of harvest; others spread out the clearing process as much as 10 years or longer (Table 13). The average number of years is 4.6 in Scotch pine, 6 in white spruce, and 7 in blue spruce and Douglas-fir.

#### Weed Control

The control of weeds by mowing, chemical treatment, or both is highly variable in Christmas tree plantations. Such controls are needed most on the better soils and on cutover forest land or brushy fields where weed control may reduce mortality and improve the growth of surviving trees. In contrast, plantations on old pastures or recently cultivated fields may not be invaded by weeds sufficiently to justify the cost of control.

Differences in weed conditions lead to a great deal of variation in grower practices. Many growers do not use any weed control. Those who apply treatments may rely on mowing, chemical controls, or a combination of

**Table 13. Years from First Year of Harvest until Plantations are Cleared, by Species.**

Number of Years	Scotch and other pines	White Spruce	Blue Spruce	Douglas-fir
(Percent of growers)				
1	2			
2-3	37	16		8
4-5	39	42	38	27
6-7	9	16	23	23
8-9	4	13	12	12
Over 9	9	13	27	30
Total	100	100	100	100

control treatments. Chemical controls are used most frequently, and chemical controls in combination with mowing are used nearly as much. Relatively few growers rely on mowing controls exclusively.

The number of control treatments shows little relationship to tree species planted. In general, growers apply weed control treatments during Christmas tree rotations as shown in Table 14:

#### Shearing and Shaping

Shearing and shaping of trees is an important phase of Christmas tree management. It offers the opportunity to raise the quality and value of salable trees and converts cull trees into salable ones.

Table 15 indicates the extent to which trees are sheared during the rotation. Most growers recognize the need for some treatment, and more than half the growers apply 6 or more shearing and shaping

**Table 14. Grower Use of Weed Control Treatments.**

Number of weed control treatments	Percent of growers
0	30
1	14
2-3	20
4-5	20
Over 5	16
	100

**Table 15. Number of Shearing and Shaping Treatments Applied by Growers During Rotation, by Species.**

Number of treatments	Scotch and other pines	White Spruce	Blue Spruce	Douglas-fir
(Percent of growers)				
0	2	1	6	7
1	5	10	7	7
2-3	5	15	10	10
4-5	32	15	20	15
Over 5	56	59	57	61
Total	100	100	100	100

treatments. The average number of treatments is 5 for Scotch pine and 4.5 for white spruce, blue spruce and Douglas-fir.

### Spraying for Insect Control

Since considerable damage may occur to plantation trees from insects, insect control has become increasingly necessary to the production of quality trees. Generalizations about the need for spraying to protect trees are difficult to make. Many variables such as tree species, insect species, and severity of attack influence the number of treatments that are desirable.

Grower practice in spraying for insect control is summarized in Table 16. Most growers of Scotch pine find insect control necessary, and more than half the growers apply 6 or more spray treatments during a rotation. Insect control does not appear to be as critical in the spruces and Douglas-fir since a substantial minority of growers of these species do not apply chemicals for insect control. The average number of spray treatments during a rotation is 5.2 for Scotch pine, 2.9 for white spruce, and 3.4 for blue spruce and Douglas-fir.

Table 16. Number of Spray Treatments for Insect Control Applied by Growers During Rotation, by Species.

Number of treatments	Scotch and other pines	White Spruce	Blue Spruce	Douglas-fir
(Percent of growers)				
0	5	36	35	27
1	2	4	4	4
2-3	17	8	13	17
4-5	24	16	13	26
Over 5	52	36	35	26
Total	100	100	100	100

### Spraying for Disease Control

Disease control receives much less attention than insect control, particularly among species other than pine. Presumably, this is a reflection of the lack of severity in the problems encountered. Eighty-five percent of the growers of white spruce, blue spruce and Douglas-fir apply no spray treatments for disease control. In Scotch pine, the no-treatment classification applies to 55 percent of the growers; the remaining growers are fairly evenly distributed among the other number-of-treatments categories—1, 2-3, 4-5, and over 5.

### Fertilizing

Fertilizing plantations to promote good Christmas tree growth and development is largely ignored by Scotch pine growers but is used by a majority of

growers of other species (Table 17). Only fifteen percent of the Scotch pine growers apply 1 or more fertilizer treatments. The average number of fertilizer treatments in spruces and Douglas-fir is 2.2.

Table 17. Number of Fertilizer Treatments Applied by Growers During Rotation, by Species Group.

Number of treatments	Scotch and other pines	Spruces and Douglas-fir
(Percent of growers)		
0	85	45
1	10	5
2-3		15
4-5	2	20
Over 5	3	15
Total	100	100

## CHARACTERISTICS OF MARKETING

### Color Tinting of Trees Sold

Color-tinting is a well established practice among growers to enhance the color of trees, particularly those that acquire a yellowish cast at the critical sales season. Off-color is most prevalent in pines, and a majority of pine growers apply color-tinting to at least a portion of the trees offered for sale (Table 18). One-half of the Scotch pine sold is color-tinted.

Spruces (except for white spruce) and Douglas-fir are color-tinted much less extensively than Scotch pine. About 44 percent of the white spruce sold is color-tinted, 15 percent of the blue spruce and 30 percent of the Douglas-fir.

Table 18. Color Tinting of Harvested Trees, by Species.

Percent of trees tinted	Scotch and other pines	White Spruce	Blue Spruce	Douglas-fir
(Percent of growers)				
0	25	44	65	57
1-25	10	6	15	18
26-50	11		4	4
51-75	5	3	8	4
Over 75	49	47	8	17
Total	100	100	100	100

### Buyer Outlets for Trees Sold

Retailers are the major marketing outlet for Michigan growers, accounting for 62 percent of all tree sales in 1978 (Table 19). Twenty-seven percent of the trees sold went to wholesalers, 4 percent to marketing cooperatives, and 7 percent to individual consumers. Sales to individual consumers took only 3 percent of the tree sales by MCTA growers, but such sales comprised one-fourth of the total sales by unaffiliated growers.



**Table 19. Number of Christmas Trees Sold to Different Types of Buyers, 1978.**

Buyer outlets	All growers	MCTA growers	Unaffiliated growers
	(Percent of trees)		
Marketing cooperatives	4	4	3
Wholesalers	27	28	25
Retailers	62	65	46
Individual Consumers:			
At plantations	3	2	15
At grower outlets	4	1	11
Total	100	100	100

### Trees Sold at Different Points of Sales

Only 13 percent of the trees marketed are sold as standing trees (Table 20). Another 15 percent are sold as cut trees at plantations. Most trees are sold on a

**Table 20. Number of Trees Sold at Different Points of Sale, 1978.**

Points of sale	All growers	MCTA growers	Unaffiliated growers
	(Percent of trees)		
At plantations:			
Standing trees	13	10	36
Cut trees	15	13	27
Cut trees delivered:			
F.o.b. rail	16	17	3
Truck destination	56	60	34
Total	100	100	100

delivered basis—16 percent f.o.b. rail and 56 percent truck-delivered.

The overall figures are dominated by the sales procedures used by MCTA growers who account for 87 percent of all tree sales. Unaffiliated growers have a different typical pattern of sales; nearly two-thirds of their sales are sales of standing or cut trees at plantations.

### Distance to First Buyer Markets

Growers were asked to indicate mileage distance zones to first buyers. The zones considered were: up to 50 miles, 51 to 100 miles, 101 to 200 miles, 201 to 500 miles, and over 500 miles. The results of this tabulation show that most Michigan trees move out-of-state (Table 21).

Some 8 percent of the trees sold in 1978 were marketed within 50 miles of plantations. One percent moved 51 to 100 miles; 11 percent, 101 to 200 miles; 22 percent, 201 to 500 miles; and 58 percent, over 500 miles. Differences between MCTA growers and unaffiliated growers were very pronounced. Unaffiliated

**Table 21. Number of Trees Sold, by Distance to First Buyer Markets, 1978.**

Distance	All growers	MCTA growers	Unaffiliated growers
	(Percent of trees)		
(Miles)			
50 or less	8	4	35
51-100	1	1	4
101-200	11	11	6
201-500	22	20	38
Above 500	58	64	17
Total	100	100	100

growers are more oriented to local and in-state markets. MCTA growers, however, are geared to long-distance sales; 20 percent of their trees move 201 to 500 miles, and 64 percent go beyond 500 miles.

The out-of-state markets specifically mentioned by growers cover a very broad geographic area blanketing the entire East (excepting New England), the South down to Florida and Texas, and parts of the West extending to Colorado and Arizona. Markets for Michigan trees currently exist in at least half of the 50 states.

### Christmas Tree Prices

Prices for trees sold in 1978 were extremely variable. Species, tree size and quality are obviously important price variables.

The basic prices shown (Table 22) are wholesale prices for cut trees at plantations. Average price per tree was \$4.50 for Scotch pine, \$5.50 for white spruce, \$6.50 for blue spruce, and \$8.00 for Douglas-fir. In each case, the average represents a wide range of prices.

Wholesale prices for standing trees of each species were lower, usually by as much as \$1.00 to \$1.50 per tree. Delivery added to the basic cost of cut trees at plantations, usually \$0.50 for short hauls up to several dollars on long hauls.

Retailing at plantations is another variable in the price structure. Choose-and-cut trees sold at prices well above the wholesale prices for cut trees at plantations—usually from \$1.00 higher to double the wholesale price. Cut trees retailed at plantations sometimes sold for the same price as choose-and-cut trees, but often another dollar was added to tree price.

**Table 22. Wholesale Prices for Cut Trees at Plantations, by Species, 1978.**

Species	Usual range	Average
	Dollars per tree	Dollars per tree
Scotch pine	4.00-5.50	4.50
White spruce	5.00-6.50	5.50
Blue spruce	6.00-7.00	6.50
Douglas-fir	7.00-9.50	8.00