## I. Nursery

There were 16,750 acres used for production of woody ornamental plants in Michigan in 1999 and 1,950 acres used for growing perennials and other herbaceous ornamentals. To qualify as a producer, an operation had to grow at least 0.1 acre of one of these products and to sell them either wholesale or retail. There were 1,085 such operations. Approximately 10.1 million square feet were devoted to the production of propagation materials.

Ottawa, Allegan, and Berrien were the three leading counties for land in production. They accounted for 43 percent of all acres. The nursery industry is widely dispersed in Michigan. Seventeen counties had 25 operations or more.

The nursery and perennial plant growers contributed substantially to the State's economy. They had $\$ 250$ million in wholesale and retail sales in 1999. That is up from $\$ 210$ million in 1996, the last time the survey was conducted. There was about $\$ 90$ million of product wholesaled outside Michigan.

The nursery industry employed 2,900 permanent workers and 4,900 seasonal workers in 1999. The total payroll was an estimated $\$ 77$ million. If more workers had been available in 1999, an additional 250 permanent and 650 seasonal workers would have been hired.

Table 1._Nurseries: Number of operations and acres, by category

| Category | Field grown |  | Container grown |  | State total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number of operations | Acres | Number of operations | Acres | Number of operations | Acres |
| Deciduous trees | 396 | 3,900 | 130 | 150 | 453 | 4,050 |
| Deciduous shrubs | 170 | 610 | 166 | 420 | 292 | 1,030 |
| Narrow-leaved evergreens | 578 | 10,750 | 88 | 250 | 618 | 11,000 |
| Broad-leaved evergreens | 35 | 124 | 63 | 81 | 93 | 205 |
| Roses | 5 | 1 | 68 | 24 | 72 | 25 |
| Fruit trees | 19 | 220 | 32 | 5 | 50 | 225 |
| Small fruits | 26 | 195 | 43 | 20 | 65 | 215 |
| All woody plants | 710 | 15,800 | 267 | 950 | 827 | 16,750 |
| Daylillies | 91 | 330 | 176 | 40 | 255 | 370 |


| Hosta | 78 | 185 | 208 | 50 | 271 | 235 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Ornamental <br> grasses | 45 | 40 | 129 | 20 | 167 | 60 |
| Other herbaceous <br> perennials | 129 | 920 | 268 | 160 | 369 | 1,080 |
| Vines and ground <br> covers | 43 | 45 | 131 | 65 | 170 | 110 |
| Bulbs, corms and <br> rhizomes | 42 | 80 | 45 | 10 | 85 | 90 |
| Water garden <br> (aquatic) plants | 0 | 0 | 26 | 5 | 26 | 5 |
| All herbaceous <br> plants | $\mathbf{2 2 4}$ | $\mathbf{1 , 6 0 0}$ | $\mathbf{3 4 1}$ | $\mathbf{3 5 0}$ | $\mathbf{5 0 7}$ | $\mathbf{1 , 9 5 0}$ |
| State total | $\mathbf{8 7 0}$ | $\mathbf{1 7 , 4 0 0}$ | $\mathbf{4 4 0}$ | $\mathbf{1 , 3 0 0}$ | $\mathbf{1 , 0 8 5}$ | $\mathbf{1 8 , 7 0 0}$ |

Table 2._Nurseries: Number of operations and acres of woody ornamentals, by size group

| Size <br> group | Number of <br> operations |  | Acres |  |
| :--- | :--- | :--- | :--- | :--- |
| 1 acre or less | 1997 | 2000 | 1997 | 2000 |
| 1.1 to 5 acres | 200 | 185 | 100 | 90 |
| 5.1 to 10 acres | 335 | 272 | 1,000 | 830 |
| 10.1 to 25 acres | 140 | 129 | 1,050 | 1,000 |
| 25.1 to 50 acres | 105 | 119 | 1,650 | 2,050 |
| 50 acres or more | 60 | 65 | 2,100 | 2,230 |
| State total | 50 | 57 | 11,100 | 10,550 |

Table 3._Nurseries: Number of operations and acres of woody ornamentals, by Michigan Department of Agriculture region

| MDA region | Field grown |  |  |  | Container grown |  |  |  | State total |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number of operations |  | Acres |  | Number of operations |  | Acres |  | Number of operations |  | Acres |  |
|  | 1997 | 2000 | 1997 | 2000 | 1997 | 2000 | 1997 | 2000 | 1997 | 2000 | 1997 | 2000 |
| 1 | 15 | 10 | 490 | 215 | 9 | 8 | 10 | 10 | 20 | 16 | 500 | 225 |
| 2 | 58 | 62 | 585 | 840 | 32 | 26 | 35 | 15 | 74 | 78 | 620 | 855 |
| 3 | 121 | 128 | 5,810 | 5,600 | 69 | 56 | 980 | 585 | 153 | 155 | 6,790 | 6,185 |
| 4 | 104 | 121 | 1,190 | 1,685 | 41 | 42 | 60 | 65 | 119 | 134 | 1,250 | 1,750 |
| 5 | 134 | 131 | 2,925 | 3,110 | 53 | 46 | 115 | 100 | 154 | 151 | 3,040 | 3,210 |


| 6 | 191 | 169 | 2,500 | 2,760 | 43 | 43 | 130 | 50 | 205 | 185 | 2,630 | 2,810 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 7 | 142 | 89 | 2,000 | 1,590 | 53 | 46 | 170 | 125 | 165 | 108 | 2,170 | 1,715 |
| State <br> total | $\mathbf{7 6 5}$ | $\mathbf{7 1 0}$ | $\mathbf{1 5 , 5 0 0}$ | $\mathbf{1 5 , 8 0 0}$ | $\mathbf{3 0 0}$ | $\mathbf{2 6 7}$ | $\mathbf{1 , 5 0 0}$ | $\mathbf{9 5 0}$ | $\mathbf{8 9 0}$ | $\mathbf{8 2 7}$ | $\mathbf{1 7 , 0 0 0}$ | $\mathbf{1 6 , 7 5 0}$ |

Table 4._Nurseries: Number of operations and sales, by sales category, 1999

| Sales <br> category | Number of <br> operations | Percent of <br> State total | State total <br> sales | Percent of <br> State total |
| :--- | :--- | :--- | :--- | :--- |
| $\$ 1,000$ or less | 200 | 18.4 | 70,000 | 0.0 |
| $\$ 1,001$ to $\$ 10,000$ | 330 | 30.4 | $1,530,000$ | 0.6 |
| $\$ 10,001$ to $\$ 100,000$ | 330 | 30.4 | $13,400,000$ | 5.4 |
| $\$ 100,001$ to $\$ 250,000$ | 95 | 8.8 | $15,000,000$ | 6.0 |
| $\$ 250,001$ to $\$ 1,000,000$ | 100 | 9.2 | $50,000,000$ | 20.0 |
| $\$ 1,000,001$ or more | 30 | 2.8 | $170,000,000$ | 68.0 |
| State total | $\mathbf{1 , 0 8 5}$ | $\mathbf{1 0 0 . 0}$ | $\mathbf{2 5 0 , 0 0 0 , 0 0 0}$ | $\mathbf{1 0 0 . 0}$ |

Table 5._Nurseries: Sales of nursery stock and propagation materials

| Category | Dollars |
| :--- | :--- |
| Woody Plants: |  |
| Wholesale to retailers | $68,000,000$ |
| Wholesale to wholesalers | $39,000,000$ |
| Retail | $40,000,000$ |
| Herbaceous Plants: | $30,000,000$ |
| Wholesale to retailers | $41,000,000$ |
| Wholesale to wholesalers | $18,000,000$ |
| Retail | $2,500,000$ |
| Propagation Materials: | $10,500,000$ |
| Wholesale to retailers | $1,000,000$ |
| Wholesale to wholesalers | $\mathbf{2 5 0 , 0 0 0 , 0 0 0}$ |
| Retail |  |
| State total |  |

Table 6._Nurseries: Number of operations and acres of herbaceous ornamentals, by Michigan Department of Agriculture region
[Herbaceous ornamentals include: Vines, ground covers, bulbs, corms, rhizomes and perennials]

|  | Field <br> grown | Container <br> grown |
| :--- | :--- | :--- |


| MDA Region | Number of operations |  | Acres |  | Number of operations |  | Acres |  | Number of operations |  | Acres |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1997 | 2000 | 1997 | 2000 | 1997 | 2000 | 1997 | 2000 | 1997 | 2000 | 1997 | 2000 |
| 1 \& 2 | 30 | 27 | 20 | 30 | 40 | 40 | 15 | 10 | 62 | 61 | 35 | 40 |
| 3 | 55 | 40 | 390 | 360 | 64 | 64 | 70 | 95 | 107 | 91 | 460 | 455 |
| 4 | 42 | 20 | 35 | 15 | 43 | 45 | 20 | 35 | 79 | 61 | 55 | 50 |
| 5 | 78 | 71 | 975 | 1,125 | 65 | 60 | 75 | 115 | 126 | 119 | 1,050 | 1,240 |
| 6 | 44 | 34 | 25 | 20 | 55 | 57 | 25 | 30 | 87 | 79 | 50 | 50 |
| 7 | 51 | 32 | 55 | 50 | 68 | 75 | 45 | 65 | 109 | 96 | 100 | 115 |
| State total | 300 | 224 | 1,500 | 1,600 | 335 | 341 | 250 | 350 | 570 | 507 | 1,750 | 1,950 |

Table 7._Nurseries: Number of operations and acres of herbaceous ornamentals, by size group

| Size group | Number of <br> operations |  | Acres |  |
| :--- | :--- | :--- | :--- | :--- |
|  | 1997 | 2000 | 1997 | 2000 |
| 0.5 acre or less | 365 | 274 | 85 | 75 |
| 0.6 to 1 acre | 85 | 88 | 70 | 75 |
| 1.1 to 5 acres | 93 | 113 | 215 | 250 |
| 5.1 acres or more | 27 | 32 | 1,380 | 1,550 |
| State total | $\mathbf{5 7 0}$ | $\mathbf{5 0 7}$ | $\mathbf{1 , 7 5 0}$ | $\mathbf{1 , 9 5 0}$ |

Table 8._Nurseries: Number of paid workers and payroll, 1999

| Category | Paid workers |
| :--- | :--- |
| Full-time permanent | 2,300 |
| Full-time seasonal | 2,900 |
| Part-time permanent | 600 |
| Part-time seasonal | 2,000 |
| State total | $\mathbf{7 , 8 0 0}$ |
|  | Dollars |
| Payroll | $\mathbf{7 7 , 0 0 0 , 0 0 0}$ |

Table 9._Nurseries: Number of operations and acres, by county and
Michigan Department of Agriculture region

| County <br> and <br> MDA region | Number of <br> operations | Acres |
| :---: | :---: | :---: |


|  | 1996 | 1999 | 1996 | 1999 |
| :---: | :---: | :---: | :---: | :---: |
| Menominee | 3 | 3 | 65 | 20 |
| Other counties ${ }^{1}$ | 21 | 14 | 440 | 210 |
| Region 1 | 24 | 17 | 505 | 230 |
| Alcona | 3 | 4 | 80 | 80 |
| Antrim | 13 | 15 | 75 | 90 |
| Benzie | 4 | 3 | 20 | 10 |
| Charlevoix | ** | 4 | ** | 20 |
| Cheboygan | ** | 6 | ** | 25 |
| Emmett | 6 | 6 | 120 | 170 |
| Grand Traverse | 20 | 12 | 30 | 20 |
| Kalkaska | 4 | 7 | 60 | 170 |
| Leelanau | 12 | 9 | 25 | 45 |
| Manistee | 8 | 11 | 120 | 100 |
| Missaukee | 5 | 5 | 25 | 105 |
| Wexford | ** | 6 | ** | 20 |
| Other counties ${ }^{1}$ | 24 | 8 | 95 | 35 |
| Region 2 | 99 | 96 | 650 | 890 |
| Ionia | 14 | 9 | 90 | 95 |
| Kent | 55 | 41 | 650 | 360 |
| Lake | ** | 3 | ** | 135 |
| Mason | 12 | 12 | 250 | 310 |
| Mecosta | ** | 4 | ** | 45 |
| Montcalm | 11 | 16 | 70 | 465 |
| Muskegon | 9 | 8 | 60 | 135 |
| Newaygo | 12 | 11 | 100 | 130 |
| Oceana | 6 | 9 | 40 | 95 |
| Osceola | ** | 6 | ** | 70 |
| Ottawa | 88 | 81 | 5,950 | 4,800 |
| Other counties ${ }^{1}$ | 11 | -- | 40 | -- |
| Region 3 | 218 | 200 | 7,250 | 6,640 |
| Arenac | ** | 4 | ** | 25 |
| Bay | 8 | 8 | 110 | 135 |


| Genesee | 35 | 41 | 180 | 330 |
| :---: | :---: | :---: | :---: | :---: |
| Huron | ** | 6 | ** | 25 |
| Iosco | ** | 3 | ** | 10 |
| Isabella | 6 | 10 | 45 | 195 |
| Lapeer | 38 | 31 | 420 | 385 |
| Midland | 9 | 6 | 15 | 15 |
| Ogemaw | ** | 3 | ** | 35 |
| Saginaw | 31 | 26 | 250 | 270 |
| Sanilac | 11 | 12 | 230 | 300 |
| Tuscola | 10 | 6 | 30 | 30 |
| Other counties ${ }^{1}$ | 16 | 5 | 25 | 45 |
| Region 4 | 164 | 161 | 1,305 | 1,800 |
| Allegan | 37 | 50 | 1,700 | 2,440 |
| Barry | 7 | 5 | 25 | 30 |
| Berrien | 61 | 59 | 960 | 860 |
| Branch | 8 | 3 | 40 | 5 |
| Calhoun | 19 | 21 | 140 | 170 |
| Cass | 16 | 16 | 90 | 75 |
| Kalamazoo | 36 | 28 | 450 | 200 |
| St. Joseph | 18 | 11 | 135 | 60 |
| Van Buren | 32 | 33 | 550 | 610 |
| Region 5 | 234 | 226 | 4,090 | 4,450 |
| Clinton | 27 | 25 | 250 | 300 |
| Eaton | 29 | 22 | 380 | 250 |
| Gratiot | ** | 6 | ** | 25 |
| Hillsdale | ** | 8 | ** | 15 |
| Ingham | 33 | 25 | 420 | 630 |
| Jackson | 22 | 17 | 270 | 260 |
| Lenawee | 21 | 14 | 160 | 130 |
| Livingston | 51 | 43 | 560 | 650 |
| Shiawassee | 14 | 14 | 280 | 200 |
| Washtenaw | 49 | 49 | 330 | 400 |
| Other counties ${ }^{1}$ | 11 |  | 30 |  |
| Region 6 | 257 | 223 | 2,680 | 2,860 |
| Macomb | 47 | 28 | 530 | 430 |


| Monroe | 38 | 33 | 540 | 625 |
| :--- | :--- | :--- | :--- | :--- |
| Oakland | 86 | 54 | 510 | 295 |
| St. Clair | 29 | 21 | 450 | 325 |
| Wayne | 34 | 26 | 240 | 155 |
| Region 7 | $\mathbf{2 3 4}$ | $\mathbf{1 6 2}$ | $\mathbf{2 , 2 7 0}$ | $\mathbf{1 , 8 3 0}$ |
| State total | $\mathbf{1 , 2 3 0}$ | $\mathbf{1 , 0 8 5}$ | $\mathbf{1 8 , 7 5 0}$ | $\mathbf{1 8 , 7 0 0}$ |
|   <br> ${ }^{1}$ Includes all counties with fewer than 3 operations.  <br> Included in Other counties in 1996  |  |  |  |  |

## Nursery Acres by County

## II. Christmas Trees

There were 54,000 acres in commercial Christmas tree production in Michigan on January 1, 2000 . That was down from 69,000 acres on January 1, 1997. There were 830 commercial growers--operations with at least five acres of Christmas trees. Sixteen plantations had more than 500 acres, down from 20 three years ago. The top five counties, Wexford, Missaukee, Oceana, Montcalm, and Kalkaska, accounted for 46 percent of the Christmas tree acreage. Thirty-two counties had at least ten tree farms.

Sales of Christmas trees in 1999 had a value of $\$ 41.0$ million at the producer level. That is up from $\$ 37.2$ millionin 1996. The number of trees sold by growers fell to 3.18 million from 3.55 million in 1996. There were an additional $\$ 2.5$ million of the sales of wreathes, cut boughs, garlands, and other cut greens.

There were 19,000 acres of Scotch Pine at the outset of 2000. Its percentage of total acres, however, fell to 35 percent from 43 percent three years earlier. There were 10,350 acres of Douglas Fir and 9,750 acres of Colorado Blue Spruce. While the acreage of these three trees declined, that of Fraser Fir rose 18 percent to 4,700 .

Table 10._Christmas trees: Acres by Michigan Department of Agriculture region and species, January 1, 2000

| Species | MDA region |  |  |  |  |  |  | State total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |
| Fir: |  |  |  |  |  |  |  |  |
| Balsam | 1,250 | 530 | 210 | 125 | 90 | 35 | 10 | 2,250 |
| Canaan | 5 | 35 | 105 | 10 | 55 | 20 | 20 | 250 |
| Concolor | 10 | 315 | 330 | 65 | 140 | 35 | 5 | 900 |
| Douglas | 275 | 4,610 | 4,040 | 250 | 850 | 250 | 75 | 10,350 |


| Fraser | 240 | 1,700 | 1,600 | 260 | 680 | 160 | 60 | 4,700 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Pine: |  |  |  |  |  |  |  |  |
| Austrian | 15 | 105 | 65 | 20 | 35 | 40 | 20 | 300 |
| Red | 75 | 160 | 125 | 40 | 5 | 35 | 10 | 450 |
| Scotch | 520 | 10,450 | 5,050 | 750 | 1,250 | 540 | 440 | 19,000 |
| White | 150 | 640 | 230 | 190 | 110 | 130 | 50 | 1,500 |
| Spruce: |  |  |  |  |  |  |  |  |
| Black Hills | 10 | 570 | 70 | 30 | 0 | 15 | 5 | 700 |
| Colorado Blue | 240 | 4,250 | 3,200 | 620 | 740 | 510 | 190 | 9,750 |
| Norway | 60 | 155 | 60 | 40 | 40 | 80 | 15 | 450 |
| White | 1,130 | 1,290 | 280 | 280 | 45 | 130 | 45 | 3,200 |
| Others | 20 | 90 | 35 | 20 | 10 | 20 | 5 | 200 |
| State total | 4,000 | 24,900 | 15,400 | 2,700 | 4,050 | 2,000 | 950 | 54,000 |

Table 11._Christmas trees: Acres by species, January 1, 1997, and 2000

| Species | 1997 |  | 2000 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Acres | Percent | Acres | Percent |
| Firs: |  |  |  |  |
| Balsam | 2,100 | 3.0 | 2,250 | 4.2 |
| Canaan ${ }^{1}$ | 100 | 0.1 | 250 | 0.5 |
| Concolor | 750 | 1.1 | 900 | 1.7 |
| Douglas | 13,600 | 19.7 | 10,350 | 19.2 |
| Fraser | 4,000 | 5.8 | 4,700 | 8.7 |
| Pines: |  |  |  |  |
| Austrian | 350 | 0.5 | 300 | 0.6 |
| Red | 250 | 0.4 | 450 | 0.8 |
| Scotch | 29,500 | 42.8 | 19,000 | 35.2 |
| White | 1,300 | 1.9 | 1,500 | 2.8 |
| Spruces: |  |  |  |  |
| Black Hills ${ }^{1}$ | 700 | 1.0 | 700 | 1.3 |
| Colorado Blue | 12,300 | 17.8 | 9,750 | 18.1 |
| Norway | 400 | 0.6 | 450 | 0.8 |
| White | 3,200 | 4.6 | 3,200 | 5.9 |
| Others | 450 | 0.7 | 200 | 0.4 |
| State total | 69,000 | 100.0 | 54,000 | 100.0 |

Table 12._Christmas trees: Acres and number of operations, by size group

| Operation size <br> group |  | Acres |  | Number of <br> operations |  |
| :--- | :--- | :--- | :--- | :--- | :---: |
|  | 1997 | 2000 | 1997 | 2000 |  |
| 5 to 9.9 acres | 1,000 | 900 | 155 | 135 |  |
| 10 to 24.9 acres | 5,200 | 5,000 | 340 | 325 |  |
| 25 to 49.9 acres | 7,100 | 5,600 | 210 | 165 |  |
| 50 to 99.9 acres | 7,700 | 6,800 | 115 | 98 |  |
| 100 to 499.9 acres | 24,000 | 16,200 | 130 | 91 |  |
| 500 acres or more | 24,000 | 19,500 | 20 | 16 |  |
| State total | 69,000 | 54,000 | 970 | 830 |  |

Table 13._Christmas trees: Sales by destination, 1999

| Destination | Trees sold |
| :--- | :--- |
| Michigan | 934,000 |
| Other states | $2,230,000$ |
| Out of United States. | 16,000 |
| State total | $3,180,000$ |


| Table 14._Christmas trees: Sales by species, 1999 |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | Sales | Trees | Value per <br> tree | Value of <br> sales |
| Species |  | Number | Dollars | Dollars |
|  | Wholesale | 71,000 | 13.00 | 923,000 |
|  | Retail | 15,000 | 34.00 | 510,000 |
|  | Salsam Fir | State total | 86,000 | 16.70 |
|  | Wholesale | 30,000 | 14.00 | 420,000 |
|  | Retail | 11,000 | 45.00 | 495,000 |
| Concolor Fir | State total | 41,000 | 22.30 | 915,000 |
|  | Wholesale | 590,000 | 13.00 | $7,670,000$ |
|  | Retail | 45,000 | 33.00 | $1,485,000$ |
| Douglas Fir | State total | 635,000 | 14.40 | $9,155,000$ |
|  | Wholesale | 310,000 | 19.00 | $5,890,000$ |
|  | Retail | 30,000 | 45.00 | $1,350,000$ |
| Fraser Fir | State total | 340,000 | 21.30 | $7,240,000$ |
|  | Wholesale | $1,345,000$ | 8.00 | $10,760,000$ |
|  | Retail | 125,000 | 21.00 | $2,620,000$ |
|  |  |  |  |  |
| Scotch Pine |  |  |  |  |
|  |  |  |  |  |


|  | State total | $1,470,000$ | 9.10 | $13,380,000$ |
| :--- | :--- | :--- | :--- | :--- |
|  | Wholesale | 37,000 | 10.00 | 370,000 |
|  | Retail | 21,000 | 22.00 | 460,000 |
|  | State total | 58,000 | 14.30 | 830,000 |
|  | Wholesale | 290,000 | 11.00 | $3,190,000$ |
| Colorado Blue Spruce | Retail | 60,000 | 29.00 | $1,740,000$ |
|  | State total | 350,000 | 14.10 | $4,930,000$ |
|  | Wholesale | 110,000 | 10.00 | $1,100,000$ |
|  | Retail | 30,000 | 27.00 | 810,000 |
|  | State total | 140,000 | 13.60 | $1,910,000$ |
|  | White Spruce | Wholesale | 37,000 | 11.00 |
|  | Retail | 23,000 | 35.00 | 800,000 |
|  | State total | 60,000 | 20.10 | $1,207,000$ |
| Others | Wholesale | $\mathbf{2 , 8 2 0 , 0 0 0}$ | $\mathbf{1 0 . 9 0}$ | $\mathbf{3 0 , 7 3 0 , 0 0 0}$ |
|  | Retail ${ }^{\mathbf{1}}$ | $\mathbf{3 6 0 , 0 0 0}$ | $\mathbf{2 8 . 5 0}$ | $\mathbf{1 0 , 2 7 0 , 0 0 0}$ |
|  | State total | $\mathbf{3 , 1 8 0 , 0 0 0}$ | $\mathbf{1 2 . 9 0}$ | $\mathbf{4 1 , 0 0 0 , 0 0 0}$ |
| All species |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

${ }^{1}$ Comprised of 215,000 trees sold choose \& cut and 145,000 trees sold already cut.
Table 15._Christmas trees: Number of operations and acres, by county and Michigan Department of Agriculture region
County
and
MDA region

|  | 1997 | 2000 | 1997 | 2000 |
| :--- | :--- | :--- | :--- | :--- |
| Chippewa | 6 | 4 | 270 | 170 |
| Delta | 17 | 15 | 800 | 820 |
| Dickinson | 14 | 9 | 500 | 240 |
| Luce | 5 | 3 | 160 | 110 |
| Marquette | 3 | 4 | 130 | 100 |
| Menominee | 31 | 36 | 1,600 | 1,800 |
| Other counties ${ }^{1}$ | 9 | 9 | 740 | 760 |
| Region 1 | $\mathbf{8 5}$ | $\mathbf{8 0}$ | $\mathbf{4 , 2 0 0}$ | $\mathbf{4 , 0 0 0}$ |
| Alcona | 8 | 5 | 360 | 280 |
| Alpena | 8 | 8 | 350 | 200 |
| Antrim | 16 | 17 | 2,000 | 1,200 |
| Benzie | 12 | 12 | 630 | 600 |
| Cheboygan | 21 | 18 | 1,100 | 1,000 |
| Emmett | 9 | 6 | 180 | 130 |


| Grand Traverse | 18 | 16 | 1,550 | 1,100 |
| :---: | :---: | :---: | :---: | :---: |
| Kalkaska | 35 | 27 | 5,100 | 3,300 |
| Leelanau | 17 | 13 | 520 | 370 |
| Manistee | 24 | 27 | 2,700 | 2,600 |
| Missaukee | 53 | 40 | 7,500 | 6,500 |
| Otsego | 9 | 5 | 220 | 60 |
| Presque Isle | 5 | 7 | 210 | 210 |
| Wexford | 47 | 41 | 8,500 | 7,300 |
| Other counties ${ }^{1}$ | 3 | 3 | 80 | 50 |
| Region 2 | 285 | 245 | 31,000 | 24,900 |
| Ionia | 11 | 6 | 350 | 200 |
| Kent | 11 | 8 | 800 | 570 |
| Lake | 7 | 6 | 700 | 530 |
| Mason | 13 | 15 | 800 | 850 |
| Mecosta | 20 | 6 | 1,400 | 650 |
| Montcalm | 24 | 25 | 4,500 | 3,400 |
| Muskegon | 13 | 12 | 450 | 350 |
| Newaygo | 24 | 14 | 2,300 | 1,400 |
| Oceana | 74 | 55 | 6,000 | 4,500 |
| Osceola | 18 | 22 | 3,100 | 2,500 |
| Ottawa | 25 | 16 | 1,100 | 450 |
| Region 3 | 240 | 185 | 21,500 | 15,400 |
| Arenac | 4 | 7 | 230 | 160 |
| Clare | 7 | 3 | 300 | 120 |
| Genesee | 11 | 12 | 180 | 200 |
| Gladwin | 4 | 4 | 130 | 130 |
| Iosco | 8 | 7 | 200 | 110 |
| Isabella | 23 | 14 | 750 | 400 |
| Lapeer | 12 | 11 | 250 | 200 |
| Midland | 4 | 5 | 160 | 150 |
| Saginaw | 15 | 14 | 380 | 350 |
| Sanilac | 8 | 6 | 360 | 360 |
| Tuscola | 12 | 9 | 600 | 260 |
| Other counties ${ }^{1}$ | 12 | 8 | 260 | 260 |
| Region 4 | 120 | 100 | 3,800 | 2,700 |
| Allegan | 21 | 29 | 2,900 | 2,500 |
| Berrien | 19 | 14 | 300 | 170 |
| Calhoun | 10 | 13 | 290 | 220 |


| Cass | 6 | 4 | 160 | 100 |
| :--- | :--- | :--- | :--- | :--- |
| Kalamazoo | 10 | 9 | 280 | 210 |
| Van Buren | 16 | 17 | 700 | 750 |
| Other counties $^{1}$ | 13 | 4 | 270 | 100 |
| Region 5 | $\mathbf{9 5}$ | $\mathbf{9 0}$ | $\mathbf{4 , 9 0 0}$ | $\mathbf{4 , 0 5 0}$ |
| Clinton | 12 | 8 | 280 | 160 |
| Eaton | 14 | 15 | 240 | 270 |
| Hillsdale | 8 | 6 | 270 | 250 |
| Ingham | 13 | 13 | 280 | 310 |
| Jackson | 18 | 19 | 500 | 370 |
| Livingston | 15 | 13 | 310 | 290 |
| Shiawassee | 5 | 3 | 130 | 50 |
| Washtenaw | 10 | 10 | 350 | 250 |
| Other counties ${ }^{1}$ | 5 | 5 | 90 | 50 |
| Region 6 | $\mathbf{1 0 0}$ | $\mathbf{9 2}$ | $\mathbf{2 , 4 5 0}$ | $\mathbf{2 , 0 0 0}$ |
| Monroe | 6 | 5 | 140 | 130 |
| Oakland | 16 | 15 | 310 | 270 |
| St. Clair | 9 | 9 | 380 | 410 |
| Other counties | 14 | 9 | 320 | 140 |
| Region 7 | $\mathbf{4 5}$ | $\mathbf{3 8}$ | $\mathbf{1 , 1 5 0}$ | $\mathbf{9 5 0}$ |
| State total | $\mathbf{9 7 0}$ | $\mathbf{8 3 0}$ | $\mathbf{6 9 , 0 0 0}$ | $\mathbf{5 4 , 0 0 0}$ |

${ }^{1}$ Includes all counties with fewer than 3 operations.
Table 16._Percent of growers reporting that insect control issues affect their business significantly, by type of operation

| Type of operation |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Insect Control Issues | Wholesale | Retail- <br> cut | Choose \& cut | All |
|  | Percent |  |  |  |
| Do not affect business | 30.5 | 39.4 | 42.9 | 35.7 |
| Do affect business | 69.5 | 60.6 | 57.1 | 64.3 |
| Insect control issues from growers reporting "do affect business" (total may exceed 100\%) |  |  |  |  |
| Gypsy moth certification | 47.5 | 25.4 | 17.5 | 34.7 |
| Availability of effective insecticides in the market | 38.2 | 32.4 | 42.9 | 38.8 |
| Uniformity of MDA field inspections | 15.8 | 12.7 | 7.8 | 12.8 |
| Federal quarantines in other states | 21.6 | 16.9 | 4.5 | 15.5 |
| Other | 5.0 | 7.0 | 4.5 | 5.2 |

Note: Type of operation defined as channel through which majority of trees were sold.
Table 17._Age distribution of Christmas tree growers

| Age category | Percent |
| :--- | :--- |
| Under 30 years of age | 2.1 |
| $30-39$ years of age | 8.9 |
| $40-49$ years of age | 22.8 |
| $50-59$ years of age | 30.7 |
| $60-69$ years of age | 21.9 |
| 70 or more years of age | 13.6 |
| Total | 100.0 |

Note: Of the operators over 50,14 percent had a partner, other than a spouse, under 50 . Of the operators over 60, 18 percent had a partner under 40.

## by ten-year plan for operation

Table 18._Age distribution of Christmas tree growers

|  | Will continue | Will not continue | Total |
| :--- | :--- | :--- | :--- |
|  | Age category | 1.6 |  |
| Under 30 years of age | 6.8 | 0.5 | 2.1 |
| $30-39$ years of age | 15.4 | 2.2 | 9.0 |
| $40-49$ years of age | 21.0 | 7.4 | 22.8 |
| $50-59$ years of age | 11.0 | 10.7 | 30.7 |
| $60-69$ years of age | 6.2 | 7.3 | 21.9 |
| 70 or more years of age | 62.0 | 38.0 | 13.5 |
| Total |  | 100.0 |  |

Note: Of the operators over 50, 14 percent had a partner, other than a spouse, under 50 . Of the operators over 60, 18 percent had a partner under 40.

Table 19._Plans for Christmas tree operation in the next ten years:

|  | Percent |
| :--- | :--- |
| Continue current Christmas tree operation | 62.0 |
| Turn over Christmas tree operation to a relative | 9.2 |
| Discontinue Christmas tree sales, but keep ownership of the acreage | 21.8 |
| Sell the Christmas tree acreage to another Christmas tree operator | 2.6 |
| Sell the Christmas tree acreage for non-agricultural use | 3.5 |
| Other | 0.9 |

Total 100.0

## III. Survey Methods and Questionnaires

The Nursery Grower survey was sent to the Michigan Agricultural Statistics Service's (MASS) list of nurseries and herbaceous ornamental growers. Those lists were supplemented by the Michigan Department of Agriculture's list of licensed nursery growers and plant growers. To qualify, an operation had to have grown at least 0.1 acre of woody ornamentals or herbaceous perennials in 1999 and have planned to sell them either retail or wholesale. There were 1,085 such places. The principal Christmas tree list was again MASS's List Sampling Frame. Additional names were found from the Michigan Christmas Tree Association. To qualify, an operation had to have grown at least five acres of trees for sale as Christmas trees. There were 830 operations that met the criterion for Christmas tree farms.

The data were collected on the attached Nursery Grower and the Christmas Tree questionnaires. These forms were developed with input from industry representatives.

Questionnaires were mailed to the entire universe in early January, 2000. Reminder letters from the Michigan Nursery and Landscape Association and Michigan Christmas Tree Association were sent two weeks later. A week after that, a second mailing of the questionnaire was made. Telephoning of non- respondents commenced in February. This was followed by personal enumeration of operators who could not be reached by phone.
A summary of responses is as follows:

| Responses | Growers |
| :--- | :--- |
|  | Nursery | Christmas trees.$|$| Mail | 490 |
| :--- | :--- |
| 440 |  |
| Telephone | 380 |
| Personal Interview | 45 |
| Refused | 130 |
| Inaccessible | 40 |
| Total | 1,085 |

Estimates of total acres were made for refusals and inaccessibles. Expansion factors were computed for each of the 7 MDA regions for both surveys:

## (Acres on Usable Reports+Estimated Acres)/(Acres on Usable Reports)

These weights were applied to reported data to account for missing reports.
Some respondents who provided acreage refused income data. Regression and ratio estimators were used to expand missing income data on the Nursery and Christmas tree surveys, respectively.

## Michigan Nursery Inventory <br> 1999-2000

At the request of the nursery industry, the Michigan Department of Agriculture is conducting the third triennial inventory. Please complete and return this questionnaire promptly. Your confidential report is needed to evaluate changes during the last three years and is used only for statistical purposes. Response to this survey is voluntary and not required by law.

## David D. Kleweno, State Statistician

Include: Trees, shrubs, ground covers, etc. at all stages of growth, except propagation materials. burlapped. Plants that are field-grown and sold bare-rooted, balled and potted, or balled and

Plants grown and sold in containers.
Exclude: Liners (lining out stock), young plants such as plug seedlings and tissue cultured plantlets, propagation materials such as cuttings. (Report in item 2.) Also exclude plants purchased for resale without a change in size or status, i.e. bare-root to pot- established.

|  |  | Maximum growing <br> acres <br> (Report to nearest <br> tenth of an acre.) |
| :--- | :--- | :--- | :--- |
|  | Field <br> grown | Container <br> grown |


| Non-woody plants: <br> H. Daylilies | 015 |  | 016 | * |
| :---: | :---: | :---: | :---: | :---: |
| I. Hosta | 017 | * | 018 | * |
| J. Ornamental grasses | 019 |  | 020 | * |
| K. Other herbaceous perennials | 021 | * | 022 | * |
| L. Vines and ground covers | 023 | * | 024 | * |
| M. Bulbs, corms and rhizomes_tulip, crocus, lily, etc. | 025 | * | 026 | * |
| N. Water garden(aquatic) plants | 027 | * | 028 | * |
| O. Total acres | 029 | * | 030 | * |

2. How much 1999 production area was used for propagation materials, such as cuttings, liners, plug seedlings, prefinished plants, or tissue cultured plantlets?

Square feet
031
3. How many paid workers in each category were employed in 1999 ?

|  | Permanent <br> $(150$ days or more per <br> year $)$ | Seasonal <br> $(149$ days or fewer per <br> year $)$ |
| :--- | :--- | :--- |
| week) | Full-time (32 hours or more per | 032 |

4. If more workers had been available in 1999, how many more would you have employed?

|  | Permanent <br> $(150$ days or more per <br> year) | Seasonal <br> $(149$ days or fewer per <br> year) |
| :--- | :--- | :--- |
| week) | Full-time (32 hours or more per | 036 |
| Part-time (31 hours or less per | 038 | 037 |
| week) |  | 039 |


|  |  | Dollars |  |
| :--- | :--- | :--- | :--- |
| 5. | What was the total annual labor payroll for 1999? | 040 |  |
| 6. <br> dollars. | Please report your total 1999 gross wholesale and retail sales volume in |  |  |
| Sales | Woody plants <br> (Items A.- G. in <br> Question 1) | Non-woody plants <br> (Items H.- N. in <br> Question 1) | Propagation <br> material <br> from Question 2. |


|  | Dollars | Dollars |
| :--- | :--- | :--- |
| Wholesale to retailers | 041 | 042 |
| Wholesale to <br> wholesalers | 044 | 045 |
| Retail | 047 | 048 |


| 7. What percent of your wholesale sales in Item 6.,(wholesale to retailers, and <br> wholesale to wholesalers) were in: |
| :--- |
| Michigan Percent <br> Other states 050 <br> Other countries 051 <br>  Total $=$ |

8. List the county or counties where your nursery is located. If your operation is in more than one county, list each county separately with acres and percent of total gross sales by county.

| County | Acres | Percent of sales |
| :--- | :--- | :--- |
| 053 | 054 | 055 |
| 056 | 057 | 058 |

## Michigan Christmas Tree Inventory 1999-2000

At the request of the Christmas tree industry, the Michigan Department of Agriculture is conducting the third triennial inventory. Please complete and return this questionnaire promptly. Your confidential report is needed to evaluate changes during the last three years and is used only for statistical purposes. Response to this survey is voluntary and not required by law.

Thank you for your cooperation,
David D. Kleweno, State Statistician

## Please make address corrections, if needed.

To avoid duplication, indicate below any operation name or partner(s) associated with this operation not included above.

| Firm Name: |
| :--- | :--- |
| Partner's Name(s): |


reason below and give new operator's name:

1. [] Operation
sold.
2. [] Operation
3. [] Never had
rented.
trees.

New Operator's Name:

Address:
$\qquad$

City:

St:

Zip:

Telephone:

| 1. A. Total Christmas tree acres on January 1, 2000 |  |
| :--- | :--- | :--- |
| (If less than $\mathbf{5}$ acres, complete this item only and return |  |
| questionnaire.) | 001 |

Example:

| County | Species (code) | Acres |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Lake | 1 |  |  |  |
| Manistee | 1 | 47 |  |  |
| Manistee | 5 |  |  |  |
| *Codes for tree species. |  |  |  |  |
|  |  |  |  |  |
| Species |  | Code | Species | Code |
| Scotch Pine | 1 | Douglas Fir | 8 |  |
| Austrian Pine | 2 | Fraser Fir | 9 |  |
| Red Pine | 3 | Concolor Fir | 10 |  |
| White Pine | 4 | Balsam Fir | 11 |  |
| Colorado Blue Spruce | 5 | Canaan Fir | 12 |  |
| White Spruce | 6 | Other | 13 |  |
| Norway Spruce | 7 | (specify) |  |  |

1. B. Christmas tree acres by county and species (Please use codes from shaded box above.)
County Species (code)* Acres County Species (code)* Acres

| - |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
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## 2. A. Tree sales in 1999

|  | Wholesale |  | Retail-cut | Choose and cut |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Trees <br> sold | Average price <br> per tree | Trees <br> sold | Average price <br> per tree | Trees <br> sold | Average price <br> per tree |
|  | Number | Dollars | Number | Dollars | Number | Dollars |
| Scotch Pine | 002 | 016 | 030 | 044 | 058 | 072 |
| Austrian Pine | 003 | 017 | 031 | 045 | 059 | 073 |
| Red Pine | 004 | 018 | 032 | 046 | 060 | 074 |
| White Pine | 005 | 019 | 033 | 047 | 061 | 075 |
| Colorado Blue <br> Spruce | 006 | 020 | 034 | 048 | 062 | 076 |
| White Spruce | 007 | 021 | 035 | 049 | 063 | 077 |
| Norway <br> Spruce | 008 | 022 | 036 | 050 | 064 | 078 |
| Douglas Fir | 009 | 023 | 037 | 051 | 065 | 079 |
| Fraser Fir | 010 | 024 | 038 | 052 | 066 | 080 |
| Concolor Fir | 011 | 025 | 039 | 053 | 067 | 081 |
| Balsam Fir | 012 | 026 | 040 | 054 | 068 | 082 |
| Canaan Fir | 013 | 027 | 041 | 055 | 069 | 083 |
| Other <br> (specify) | 014 | 028 | 042 | 056 | 070 | 084 |

## 2. B. Sales of wreathes, cut boughs, and roping (garlands) in 1999

|  | Dollars |  | $\square$ |
| :--- | :--- | :--- | :--- |
|  | 088 |  | $\square$ |

2. C. Sales in 1999

| Buyer Location | Percent of total |
| :---: | :--- |
| Michigan | 085 |
| Out of state | 086 |
|  | Out of U.S. | 0087

3. A. What age is the 3. B. Is there another principal person, excluding a spouse, present operator? in this operation?

| [] | Under 30 years of age. | [] Yes [] No. Go to item 4. If yes, what age is that person? |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| [] | 30-39 years of age. |  |  |  |  |
| [] | 40-49 years of age. | [] | Under 30 years of age. | [] | 60-69 years of age. |
| [] | 50-59 years of age. | [] | 30-39 years of age. |  | 70 or more years of age. |
| [] | 60-69 years of age. | [] | 40-49 years of age. |  |  |
| [] | 70 or more years of age. |  | 50-59 years of age. |  |  |

4. (Check the one response that best describes your intentions.) Within the next 10 years I plan to:

[] \begin{tabular}{l|l|l|}

\hline | Continue my current |
| :--- |
| Christmas tree |
| operation. | \& [] \& Turn over this Christmas tree operation to a relative. <br>


\hline (Skip to item 5.) \& [] \& | Discontinue Christmas tree sales, but keep ownership of the |
| :--- |
| acreage. | <br>


\hline OR . \& [] \& | Sell the Christmas tree acreage to another Christmas tree |
| :--- |
| operator. | <br>

\hline \& [] \& Sell the Christmas tree acreage for non-agricultural use. <br>
\hline \& [] \& Other <br>
\hline \& \& (specify) <br>
\hline
\end{tabular}

5. Which of the following insect control issues do you consider significant to your Christmas tree business?
(Check as many as apply.)

| [] | Insect control issues do not affect <br> my business. | [] | Gypsy moth certification. |
| :--- | :--- | :--- | :--- | :--- |
|  | OR . | [] | Availability of effective insecticides in the <br> market. |
|  | [] | Uniformity of MDA field inspections. |  |
|  | $[[]$ | Federal quarantines in other states. |  |
|  |  | Other |  |
|  | [] |  |  |
|  |  |  |  |

So that we can ensure complete coverage, please give the name of another nearby Christmas tree operation:

| Name | Address | City | Telephone |  |
| :--- | :--- | :--- | :--- | :--- |
|  | $\boxed{y}$ |  |  |  |
|  |  |  |  |  |

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