

Michigan Rotational Survey

# Turfgrass Survey 2002



Michigan  
Agricultural  
Statistics  
Service



Michigan  
Department of  
Agriculture



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF AGRICULTURE  
LANSING

DAN WYANT  
DIRECTOR

December 2003

We are pleased to present the results of the 2002 Michigan Turfgrass Survey, the first comprehensive survey measuring the impact and value of the turfgrass industry in Michigan. It represents a cooperative effort between the private and public sectors to provide data which Michigan's agricultural industries rely on for planning and other purposes.

This is the twelfth report published under the Michigan Rotational Survey program. A fruit inventory was conducted in 1991, followed by a vegetable survey in 1992, and a nursery and Christmas tree survey in 1993. Since then, these three surveys have been repeated in a three-year cycle in a program funded by the Michigan Legislature, administered by the Michigan Department of Agriculture, and conducted by the Federal/State Michigan Agricultural Statistics Service. Turfgrass is now included in the program and will be surveyed every five years.

We appreciate the cooperation and assistance of all those who voluntarily provided the data that made this report possible. We also extend thanks to the Michigan Turfgrass Foundation, the Michigan State University Turfgrass Science faculty, and the data collectors of the National Association of State Departments of Agriculture for their support and efforts during the survey process.

We look forward to our continued successful relationship that provides important information for Michigan agriculture and guides public policy decisions. If you have any questions regarding this publication, or suggested improvements, please contact the Michigan Agricultural Statistics Service at (800) 453-7501.

Sincerely,

A handwritten signature in dark ink that reads "Dan Wyant".

Dan Wyant  
Director

# Michigan Rotational Survey

## Turfgrass Survey 2002

---

### Michigan Agricultural Statistics Service

David D. Kleweno - State Statistician  
Vince Matthews - Deputy State Statistician



United States Department of Agriculture  
National Agricultural Statistics Service  
Ron Bosecker, Administrator

Issued cooperatively by:



Michigan Department of Agriculture  
Executive Office  
Dan Wyant, Director

---

## Office Staff

Marian Baker	Nathan Elias	Julie Palmer
Denise Bowman	Chris Gottschall	Elena Romaniello
Sam Bruner	Diane Hutchins	Marty Saffell
Charles Butler	Lisa Jones	Lynn Spisak
Chad Cloos	Gene Kenyon	Linda Stoneman
Neva Coleman	Dan Ledbury	Charmaine Wilson
James Collom	Shaun Maloney	



National Association of State  
Departments of Agriculture

National Association of State Departments of Agriculture (NASDA) enumerators collect data for the Michigan Agricultural Statistics Service. NASDA workers who gathered information for this publication were:

## Office Telephone Enumerators

Flo Hill, <i>Day Supervisor</i>	James Griffiths	Neva Miller
Vena Hutton, <i>Night Supervisor</i>	Ebony Hosey	Jane Mosier
Rosa Davis	Debra Jones	Linda Newcomb
Julie Everett	Virginia Ludlow	JoAnn Roberts
Olive Goedert	Sharyn McIntyre	Delores Tabor
Carol Griffiths	Mike McManus	

## Field Enumerators

### West Central Michigan

Carl DeKleine, *Supervisor*, Grand Haven  
Doris Bastian, Grand Haven  
Babette Burmeister, Shelby  
Byron Carpenter, Grand Haven  
Bill Dukes, Shelby  
Kathryn Smith, Wayland  
Albert TerHaar, Hudsonville  
Bev Vincent, Grand Haven

### Southwest Michigan

Cindra Mikel, *Supervisor*, Cassopolis  
Margaret Glidden, Paw Paw  
Steve Lamberton, Niles  
Joyce Landis, Homer  
Bob Larsen, Coloma  
Rosie Nimitz, Eau Claire

### Southeast Michigan

Rachel Bakowski, *Supervisor*, Ottawa Lake  
Glenn Diesing, Petersburg  
Lisa Holdenberg, New Hudson  
Kelly Ludwig, Osseo  
David Patterson, Auburn Hills  
Ardis Pearce, Clarkston  
Mark Wilhelm, Springport  
Nichole Engel-Williams, Leonard

### North Michigan and Upper Peninsula

Herb Hemmes, *Supervisor*, Harbor Springs  
Cathy Collins, Traverse City  
Jim Cranick, Harbor Springs  
Gordon McDonald, Munising  
Kitty Venable, Luzerne

### Central Michigan

Ken Kralik, *Supervisor*, Riverdale  
Pat Bitler, Hersey  
Ron Feher Sr., Lansing  
Mary Hubbard, Riverdale

### East Central Michigan

Mona Kaczuk, *Supervisor*, Bad Axe  
Christie Corlew, Davison  
M. Keith Corlew, Davison  
Debra Delcourt, Emmett  
Diane McPhee, Kinde  
Jim Sparks, Fenton

---

# Contents

	Page
General Information .....	1
Private Residences .....	3
Parks .....	5
Cemeteries .....	7
Apartments .....	9
Golf Courses .....	10
Sod Farms .....	14
Highways .....	16
Schools .....	17
Lawn Service Companies .....	19



# General Information

The Michigan Agricultural Statistics Service (MASS), in cooperation with the Michigan Turfgrass Foundation and the Michigan Department of Agriculture, conducted the first Michigan Turfgrass Survey during the winter of 2002. This survey was designed to measure the contribution made to the turfgrass industry by sod farms, golf courses, homeowners, lawn service companies, parks, schools, cemeteries, apartments, and highways.

Almost 1.9 million acres of lawn and turf were maintained statewide in 2002. Expenditures for that maintenance, including variable inputs, equipment purchases, and labor and contracted services, exceeded \$1.8 billion, a major contribution to the State's economy. Additionally, over 30,000 persons were employed year-round or seasonally for lawn care.

## Turfgrass survey summary

Sector	Area	Costs		
		Variable inputs	Equipment purchases	Labor and contracted services
	<i>1,000 acres</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
Private residences	1,575.0	560,000	405,000	226,000
Parks	69.0	6,700	4,400	33,300
Cemeteries	22.2	2,550	1,630	21,645
Apartments	--	15,000	--	30,000
Golf courses	95.8	62,100	20,900	126,200
Sod farms	6.9	4,150	1,370	5,690
Highways <sup>1</sup>	60.7	300	0	555
Schools	59.5	7,500	4,800	60,600
Lawn service companies	640.0	88,800	31,700	140,000
Total <sup>2</sup>	1,889.1	747,100	469,800	643,990

<sup>1</sup> Includes only areas maintained by Michigan Department of Transportation.

<sup>2</sup> Total acres does not include lawn service companies to avoid duplication.

## Acres of principal varieties of grass for golf courses, parks, schools, and cemeteries

Variety	Area	
	<i>Acres</i>	<i>Percent</i>
Bluegrass/Fescue	57,150	23.2
Kentucky Bluegrass	34,050	13.8
Bentgrass	16,630	6.7
Poa-Annua	12,910	5.2
Poa/Bentgrass	7,580	3.1
Ryegrass	17,030	6.9
Fine Fescue	6,110	2.5
Improved Turf Type Tall Fescue	3,740	1.5
Natural	14,260	5.8
Kentucky 31 Tall Fescue	2,020	0.8
Other	12,670	5.1
Unknown	62,350	25.3
Total	246,500	100

## Turf maintenance employees by sector

Sector	Year-round employees	Seasonal employees
	<i>Number</i>	<i>Number</i>
Parks	900	2,130
Cemeteries	700	1,400
Golf courses	1,700	8,150
Sod farms	70	265
Schools	1,700	1,650
Lawn service companies	4,100	7,500
Total	9,170	21,095

**Input costs for lawns by sector**

Sector	Fertilizer	Pesticides <sup>1</sup>	Sod	Seed	Others	Total
	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
Private residences	115,900	44,300	18,000	37,000	344,800	560,000
Parks	1,130	440	140	460	4,530	6,700
Cemeteries	245	188	34	235	1,848	2,550
Apartments	2,050	1,430	180	250	11,090	15,000
Golf courses	13,500	18,300	1,000	1,400	27,900	62,100
Sod farms	940	325	0	790	2,095	4,150
Highways <sup>2</sup>	10	255	0	5	30	300
Schools	1,870	680	250	560	4,140	7,500
Lawn service companies	22,100	11,300	4,500	4,200	46,700	88,800
<b>Total</b>	<b>157,745</b>	<b>77,218</b>	<b>24,104</b>	<b>44,900</b>	<b>443,133</b>	<b>747,100</b>

<sup>1</sup> Herbicides, insecticides, and fungicides.

<sup>2</sup> Includes only areas maintained by Michigan Department of Transportation.

**Top four primary lawn care information sources by sector**

Sector	Lawn serv. co.	Peers <sup>1</sup>	Commercial tech reps	Magazines	Other super-intendents	University specialists	County extension	Garden center/nursery	Technical journals	Product labels
	<i>Percent reporting</i>	<i>Percent reporting</i>	<i>Percent reporting</i>	<i>Percent reporting</i>	<i>Percent reporting</i>	<i>Percent reporting</i>	<i>Percent reporting</i>	<i>Percent reporting</i>	<i>Percent reporting</i>	<i>Percent reporting</i>
Private residences	23	34	--	--	--	--	--	39	--	25
Parks	25	23	--	--	--	--	28	23	--	--
Cemeteries	28	26	--	--	--	--	24	17	--	--
Golf courses	--	34	59	--	59	48	--	--	--	--
Schools	45	37	28	23	--	--	--	--	--	--
Lawn serv. co.	--	42	27	46	--	--	--	--	27	--

<sup>1</sup> Other homeowners for private residences.



# Private Residences

**Private residences: Total area, new lawn area, and cost of establishing**

Item	Amount
	<i>Sq. feet</i>
Mean	26,400
25 percent quantile	5,000
Median	12,900
75 percent quantile	33,000
	<i>Acres</i>
Total lawn	1,575,000
New lawn established	62,300
	<i>Dollars</i>
Cost of establishing	185,000,000

**Private residences: Sources of lawn care information**

Source	Percent reporting
Garden center/nursery	39
Other homeowners	34
Product labels	25
Lawn service companies	23
Magazines	18
Newspapers	17
TV/radio	17
Internet	8
Other	5
County extension	5
Commercial tech reps	2
Private consultant	2
University specialists	1
Technical journals	1
Local green industry	1
Community college	0
State green industry	0

**Private residences: Major lawn care problems**

Problem	Percent reporting
Drought	46
Weeds	45
Insects/grubs	30
Moles/voles	29
Poor soil	15
Excessive shade	11
Disease	6
Thatch	6
Pet waste	5
Other	5
Traffic	4
Equipment maintenance	3
Poor drainage	3
Erosion	2
Nematodes	1

**Private residences: Use of lawn care service and costs**

Item	Amount
	<i>Number</i>
Homeowners using service	580,000
	<i>Dollars</i>
Mean expenditure	390
Median expenditure	250
Total expenditures	226,000,000

**Private residences: Services reported by homeowners using lawn care service**

Service	Percent reporting
Fertilization	63
Weed control	61
Insect control	44
Mowing/trim	40
Disease control	27
Edging	25
Fall clean-up	19
Spring clean-up	15
Coring aeration	13
Mulching	9
Sprinkler service	7
Soil testing	5
Dethatching/power rake	4
Sprinkler installation	3
Renovation/overseed	2
Installation (seed/sod)	2
Other	2

**Private residences: Input costs for lawns**

Item	Amount
	<i>Dollars</i>
Equipment rentals	4,500,000
Fertilizer	115,900,000
Fuel	60,800,000
Herbicides	18,400,000
Insecticides/fungicides	25,900,000
Lime	5,800,000
Mowing equipment repairs	64,200,000
Mowing equipment supplies	45,400,000
Seed	37,000,000
Sod	18,000,000
Soil testing	800,000
Topsoil	17,000,000
Water	142,500,000
Other	3,800,000
<b>Total</b>	<b>560,000,000</b>

**Private residences: Lawn equipment purchase costs**

Item	Amount
	<i>Percent</i>
Homeowners purchasing	27.6
	<i>Dollars</i>
Mean expenditure	565
Median expenditure	150
Total expenditures	405,000,000

# Parks

**Parks: General lawn and athletic field area by government type**

Type	Parks	General lawn	Athletic fields
	<i>Number</i>	<i>Acres</i>	<i>Acres</i>
Municipal	2,650	23,900	4,250
Township	1,245	10,900	3,300
County	302	13,200	400
State	103	13,000	50
Total	4,300	61,000	8,000

**Parks: Highest educational level of person most responsible for turf management**

Level	Percent
Elementary	2
High school	68
2 Year college	16
4 Year college	13
Masters	1

**Parks: Services performed <sup>1</sup>**

Service	Percent reporting
Spring clean-up	85
Mowing/trim	98
Edging	47
Fall clean-up	77
Mulching	28
Planting	43
Disease control	28
Fertilization	54
Weed control	54
Soil testing	10
Coring aeration	36
Renovation/overseed	44
Dethatching/power rake	9
Installation	40
Sprinkler installation	22
Sprinkler service	37
Other	2

<sup>1</sup> Weighted by parks.

**Parks: General lawn varieties**

Variety	Amount	
	<i>Acres</i>	<i>Percent</i>
Unknown	28,000	45.9
Bluegrass/Fescue	12,500	20.5
Natural	9,480	15.5
Ryegrass	3,810	6.2
Kentucky Bluegrass	3,480	5.7
Improved Turf Type Tall Fescue	1,130	1.9
Fine Fescue	680	1.1
Other	630	1.0
Poa-Annua	580	1.0
Kentucky 31 Tall Fescue	490	0.8
Bentgrass	190	0.3
Poa/Bentgrass	30	0.1
Total	61,000	100

**Parks: Sources of lawn care information**

Source	Percent reporting
County extension	28
Lawn service companies	25
Peers	23
Garden center	23
Product labels	14
Magazines	12
University specialists	11
Private consultant	10
Commercial tech reps	8
Technical journals	6
Internet	5
Other	4
TV/radio	1
Newspapers	1

**Parks: General lawn problems <sup>1</sup>**

Problem	Percent reporting
Drought	57
Weeds	40
Poor soil	28
Traffic	27
Poor drainage	14
Insects/grubs	13
Moles/voles	10
Excessive shade	9
Equipment maintenance	8
Erosion	4
Disease	3
Other	2
Thatch	2

<sup>1</sup> Weighted by parks with general lawn.

**Parks: Athletic field varieties**

Variety	Amount	
	<i>Acres</i>	<i>Percent</i>
Unknown	2,250	28.1
Bluegrass/Fescue	2,150	26.9
Ryegrass	810	10.1
Kentucky Bluegrass	680	8.5
Athletic mix	540	6.8
Natural	480	6.0
Other	410	5.1
Improved Turf Type Tall Fescue	180	2.3
Fine Fescue	160	2.0
Kentucky 31 Tall Fescue	120	1.5
Bentgrass	110	1.4
Poa-Annua	110	1.4
Total	8,000	100

**Parks: Sources of irrigation water**

Source	Amount
	<i>Percent</i>
Municipal water	58
Ponds/lakes	12
Rivers/streams	4
Wells	26

**Parks: Employees, payroll, and contracted services for turf maintenance**

Item	Amount
	<i>Number</i>
Year-round employees	900
Seasonal employees	2,130
	<i>Dollars</i>
Payroll	30,700,000
Contracted services	2,600,000

**Parks: Athletic field problems <sup>1</sup>**

Problem	Percent reporting
Drought	53
Traffic	36
Weeds	26
Poor soil	21
Poor drainage	12
Insects/grubs	8
Moles/voles	8
Equipment maintenance	7
Thatch	5
Disease	4
Other	2
Excessive shade	2
Erosion	1

<sup>1</sup> Weighted by parks with athletic fields.

**Parks: Input costs for lawns**

Item	Amount
	<i>Dollars</i>
Equipment purchases	4,400,000
Equipment rentals	1,740,000
Equipment repairs	1,030,000
Fertilizer	1,130,000
Fuel	500,000
Herbicides	230,000
Insecticides/fungicides	210,000
Lime	7,000
Mowing supplies	920,000
Seed	460,000
Sod	140,000
Soil testing	5,000
Topsoil	250,000
Other	78,000
Total	11,100,000

**Parks: Athletic field use by type**

Type	Amount	Mean usage per year	Mean usage per month
	<i>Number</i>	<i>Months</i>	<i>Hours</i>
Baseball	1,480	4.8	185
Football	1,140	5.4	170
Playgrounds	140	2.9	125
Soccer	1,310	6.0	165
Softball	2,220	9.0	240
Other	80	4.8	150

# Cemeteries

## Cemeteries: General Information

Item	Maintained lawn	
	Number	Acres
Operations	2,400	22,200

## Cemeteries: Lawn varieties

Variety	Acres	Percent
Unknown	12,000	54.2
Bluegrass/Fescue	3,300	14.9
Natural	2,100	9.4
Kentucky Bluegrass	1,290	5.8
Other	1,190	5.3
Ryegrass	910	4.1
Kentucky 31 Tall Fescue	610	2.8
Fine Fescue	570	2.6
Improved Turf Type Tall Fescue	180	0.8
Bentgrass	30	0.1
Poa-Annua	20	0.1
Poa/Bentgrass	0	0.0
<b>Total</b>	<b>22,200</b>	<b>100</b>

## Cemeteries: Services performed <sup>1</sup>

Service	Percent reporting
Mowing/trim	92
Spring clean-up	84
Fall clean-up	69
Edging	43
Installation (seed/sod)	26
Weed control	22
Fertilization	18
Renovation/overseed	13
Mulching	8
Sprinkler service	8
Insect control	8
Disease control	4
Dethatching/power rake	3
Soil testing	3
Sprinkler installation	3
Other	2
Coring aeration	1

<sup>1</sup> Weighted by cemeteries.

## Cemeteries: Highest educational level of person most responsible for turf management

Level	Percent
Elementary	4
High school	73
2 Year college	15
4 Year college	7
Masters	1

## Cemeteries: Sources of lawn care information

Source	Percent reporting
Lawn service companies	28
Peers	26
County extension	24
Garden center	17
Magazines	12
Product labels	11
Private consultant	8
Commercial tech reps	6
Other	4
Newspapers	4
University specialists	4
Technical journals	3
Internet	2
TV/radio	1

## Cemeteries: Major lawn care problems <sup>1</sup>

Problem	Percent reporting
Drought	54
Weeds	44
Poor soil	35
Moles/voles	24
Excessive shade	21
Insects/grubs	11
Equipment maintenance	8
Poor drainage	5
Other	4
Erosion	3
Traffic	3
Thatch	2
Disease	1

<sup>1</sup> Weighted by cemeteries.

**Cemeteries: Employees, payroll, and  
contracted services for turf maintenance**

Item	Amount
	<i>Number</i>
Year-round employees	700
Seasonal employees	1,400
	<i>Dollars</i>
Payroll	18,300,000
Contracted services	3,345,000

**Cemeteries: Input costs for lawns**

Item	Amount
	<i>Dollars</i>
Equipment purchases	1,630,000
Equipment rentals	210,000
Equipment repairs	390,000
Fertilizer	245,000
Fuel	330,000
Herbicides	140,000
Insecticides/fungicides	48,000
Lime	8,500
Mowing equipment supplies	410,000
Seed	235,000
Sod	34,000
Soil testing	1,500
Topsoil	155,000
Water	305,000
Other	38,000
Total	4,180,000

# Apartments

## Apartments: Services performed

Service	Percent reporting
Mowing/trim	91
Spring clean-up	83
Weed control	78
Fall clean-up	77
Fertilization	77
Edging	74
Disease control	51
Planting	48
Sprinkler service	43
Mulching	35
Renovation/overseed	22
Installation (seed/sod)	22
Coring aeration	12
Dethatching/power rake	9
Sprinkler installation	7
Soil testing	2
Other	2

## Apartments: Input costs for lawns

Item	Amount
	<i>Dollars</i>
Fertilizer	2,050,000
Fuel	600,000
Herbicides	830,000
Insecticides/fungicides	600,000
Lawn care service	20,000,000
Mowing equipment repairs	1,250,000
Mowing equipment supplies	2,100,000
Payroll	10,000,000
Seed	250,000
Sod	180,000
Topsoil	320,000
Water	5,700,000
Other	1,120,000
Total	45,000,000

# Golf Courses

**Golf courses: Facilities, rounds played, and acreage by size of course**

Size	Facilities	9-hole rounds played	Acreage		
			Total	Turf	Irrigated turf
	<i>Number</i>	<i>Number</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Nine hole	150	1,800,000	11,500	6,600	3,000
Eighteen hole	590	20,000,000	104,500	63,400	33,800
Multiple course	125	7,000,000	39,300	25,800	13,300
<b>Total</b>	<b>865</b>	<b>28,800,000</b>	<b>155,300</b>	<b>95,800</b>	<b>50,100</b>

**Golf courses: Facilities, rounds played, and acreage by type of course**

Type	Facilities	9-hole rounds played	Acreage		
			Total	Turf	Irrigated turf
	<i>Number</i>	<i>Number</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Private	160	5,800,000	29,500	20,100	10,900
Semi-private, resort	100	3,400,000	22,300	11,600	5,600
Public	545	16,300,000	94,600	58,100	30,400
Municipal	60	3,300,000	8,900	6,000	3,200
<b>Total</b>	<b>865</b>	<b>28,800,000</b>	<b>155,300</b>	<b>95,800</b>	<b>50,100</b>

**Golf courses: Age distribution**

Years operating	Percent
1-10	24
11-20	10
21-30	12
31-40	20
41-60	8
61-80	17
81 or more	9

**Golf courses: Turf varieties**

Variety	Amount	
	<i>Acres</i>	<i>Percent</i>
Bluegrass/Fescue	23,000	24.0
Kentucky Bluegrass	21,300	22.2
Bentgrass	15,300	16.0
Poa-Annua	11,700	12.2
Poa/Bentgrass	7,500	7.8
Ryegrass	5,200	5.4
Fine Fescue	2,900	3.0
Ryegrass/Bluegrass	1,600	1.7
Improved Turf Type Tall Fescue	1,200	1.3
Natural	1,000	1.0
Kentucky 31 Tall Fescue	200	0.2
Other	1,700	1.8
Unknown	3,200	3.3
<b>Total</b>	<b>95,800</b>	<b>100</b>



**Golf courses: Principal turf varieties by section of course**

Variety	Section				
	Greens	Tees	Fairways	Roughs	Other <sup>1</sup>
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Bentgrass	59	32	20	1	1
Kentucky Bluegrass	1	16	21	26	20
Bluegrass/Fescue	0	12	17	45	21
Improved Turf Type Tall Fescue	0	0	0	2	3
Kentucky 31 Tall Fescue	0	0	0	1	0
Fine Fescue	0	0	1	2	10
Poa-Annua	7	7	10	3	4
Poa/Bentgrass	31	22	17	1	2
Ryegrass	0	4	2	4	12
Ryegrass/Bluegrass	0	3	3	5	7
Poa-Annua/Bluegrass	0	1	2	2	0
Natural	0	0	0	3	9
Other	2	3	7	5	11

<sup>1</sup> Not applicable for 71 percent of respondents

**Golf Courses: Services performed**

Service	Percent reporting
Fertilization	99
Irrigation	99
Disease control	97
Coring aeration	96
Weed control	92
Insect control	88
Dethatching/power rake	84
Clipping/leaf removal	82
Renovation/overseed	78
Installation (seed/sod)	54
Soil testing (private)	43
Tissue testing	12
Soil testing (state)	9
Other	5

**Golf courses: Major turf care problems**

Problem	Percent reporting
Drought	66
Disease	55
Insects/grubs	28
Traffic	26
Equipment maintenance	22
Poor drainage	20
Labor costs	18
Water availability	12
Weeds	12
Thatch	9
Excessive shade	8
Other	6
Poor soil	6
Erosion	1

**Golf courses: Sources of turf care information**

Source	Percent reporting
Commercial tech reps	59
Other superintendents	59
University specialists	48
Peers	34
Magazines	29
Technical journals	22
Internet	13
County extension	11
U.S. Golf Association agronomist	6
Private consultant	6
Other	3
Lawn service companies	3
Garden center/nursery	1

**Golf courses: Significant future problems**

Problem	Percent reporting
Input costs	48
Government regulations	39
Labor availability	36
Water availability	30
Loss of chemical registrations	28
Other	6

**Golf courses: Position of person  
most responsible for turf management**

Position	Percent reporting
Certified superintendent	20
Superintendent	64
Owner	7
General manager	5
Grounds supervisor	4

**Golf courses: Employees and payroll**

Item	Amount
	<i>Number</i>
Year-round employees	1,700
Seasonal employees	8,150
	<i>Dollars</i>
Payroll	124,000,000

**Golf courses: Highest educational level of  
person most responsible for turf management**

Level	Percent
Elementary	1
High school	21
2 Year college	43
4 Year college	34
Masters	1

**Golf courses: Contracted services**

Item	Amount
	<i>Dollars</i>
Turf maintenance	1,240,000
Fertilizer & pesticide application	575,000
Soil testing	105,000
Other	280,000
Total	2,200,000

**Golf courses: Sources and cost of  
purchased irrigation water**

Source	Amount
	<i>Percent</i>
Municipal water	3
Ponds/lakes	34
Rivers/streams	14
Wells	48
Other	1
	<i>Dollars</i>
Purchased irrigation water	750,000

**Golf courses: Equipment costs and value**

Item	Amount
	<i>Dollars</i>
Leasing/renting	3,900,000
Purchases	20,900,000
Repair/maintenance	12,600,000
Supplies	8,700,000
Market value	196,000,000

**Golf courses: Input costs for turf**

Item	Amount
	<i>Dollars</i>
Fertilizer	13,500,000
Herbicides	2,300,000
Insecticides/fungicides	16,000,000
Lime	100,000
Mulch	450,000
Seed	1,400,000
Sod	1,000,000
Topsoil	950,000
Other	1,200,000
<b>Total</b>	<b>36,900,000</b>

**Golf courses: Turf acres, new acres established, labor costs, and turf input cost, by type of course**

Type	Turf	New turf	Payroll	Turf input costs	Equipment purchases	Total costs per acre
	<i>Acres</i>	<i>Acres</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Private, semi-private, resort	31,700	650	56,000,000	17,500,000	10,700,000	2,655
Public, municipal	64,100	700	68,000,000	19,400,000	10,200,000	1,520
<b>Total</b>	<b>95,800</b>	<b>1,350</b>	<b>124,000,000</b>	<b>36,900,000</b>	<b>20,900,000</b>	<b>1,900</b>

# Sod Farms

## Sod Farms: General information

Item	Amount	
	<i>Number</i>	
Operations	45	
	<i>Acres</i>	
Production capacity	8,900	
New turf seeded	6,900	
Area irrigated	6,400	
	<i>Sq. yards</i>	
Amount sold	24,450,000	
Amount sold out-of-state	300,000	
	<i>Dollars per sq. yard</i>	
Average price	0.96	
Average price 5 years ago	0.82	

## Sod farms: Sources of information

Source	Percent reporting
Other growers	45
Commercial tech reps	45
University specialists	39
Magazines	33
County extension	30
Product labels	18
Private consultant	15
Technical journals	15
Industry associations	15
Internet	12

## Sod farms: Sales by type of customer

Customer	Amount	
	<i>Sq. yards</i>	<i>Percent</i>
Golf courses	360,000	1.5
Homeowners	4,540,000	18.6
Lawn service companies	1,150,000	4.7
Public/government agencies	220,000	0.9
Retailers	2,500,000	10.2
Schools and parks	350,000	1.4
Wholesalers	15,100,000	61.8
Other	230,000	0.9
Total	24,450,000	100

## Sod farms: Major sod production problems

Problem	Percent reporting
Drought	91
Water availability	30
Insects/grubs	24
Equipment maintenance	18
Weeds	18
Labor costs	18
Moles/voles	15
Other input costs	9
Poor drainage	9
Disease	9
Labor availability	6
Erosion	3
Nematodes	3

## Sod farms: Sales by variety

Variety	Amount	
	<i>Sq. yards</i>	<i>Percent</i>
Kentucky Bluegrass	24,150,000	98.8
Other	100,000	0.4
Ryegrass	100,000	0.4
Bluegrass/Fescue	70,000	0.3
Bentgrass	30,000	0.1
Total	24,450,000	100

## Sod farms: Significant future problems

Problem	Percent reporting
Loss of chemical registrations	48
Labor availability	45
Water availability	36
Input costs	33
Government regulations	21
Demand for product	15
Land loss to development	9

**Sod farms: Equipment costs and value**

Item	Amount
	<i>Dollars</i>
Leasing/renting	120,000
Purchases	1,370,000
Repair/maintenance	1,060,000
Supplies	900,000
Market value	21,000,000

**Sod farms: Input costs for production**

Item	Amount
	<i>Dollars</i>
Fertilizer	940,000
Herbicides	280,000
Insecticides/fungicides	45,000
Irrigation water purchases	5,000
Lime	10,000
Seed	790,000
Total	2,070,000

**Sod farms: Contracted and paid services**

Service	Amount
	<i>Dollars</i>
Fertilizer and pesticide application	60,000
Sod maintenance	180,000
Soil testing	10,000
Other	40,000
Total	290,000

**Sod farms: Sources of irrigation water**

Source	Amount
	<i>Percent</i>
Municipal water	2
Ponds/lakes	14
Rivers/streams	6
Wells	73
Other	5

**Sod farms: Employees and payroll**

Item	Amount
	<i>Number</i>
Year-round employees	70
Seasonal employees	265
	<i>Dollars</i>
Payroll	5,400,000

# Highways

## Highways: Area maintained by Michigan Department of Transportation

Item	Area
	<i>Acres</i>
Rest areas	670
Right-of-ways	60,000
Total	60,670

## Highways: Input costs for lawns <sup>1</sup>

Item	Amount
	<i>Dollars</i>
Fertilizer	10,000
Herbicides	250,000
Insecticides/fungicides	5,000
Lawn care service	555,000
Mowing equipment repairs	10,000
Mowing equipment supplies	10,000
Seed	5,000
Topsoil	2,000
Total	847,000

<sup>1</sup> Includes only areas maintained by Michigan Dept. of Transportation

# Schools

**Schools: General lawn and athletic field area by level**

Level	General lawn	Athletic fields
	<i>Acres</i>	<i>Acres</i>
College and university	10,700	1,200
Primary and secondary	35,300	12,300
Total	46,000	13,500

**Schools: Highest educational level of person most responsible for turf management**

Level	Percent
Elementary	2
High school	56
2 Year college	17
4 Year college	21
Masters	3
Doctorate	1

**Schools: Services performed**

Service	Percent reporting
Spring clean-up	74
Mowing/trim	92
Edging	68
Fall clean-up	71
Mulching	29
Soil testing	16
Fertilization	76
Weed control	70
Insect control	39
Disease control	24
Dethatching/power rake	16
Coring aeration	40
Renovation/overseed	46
Installation	33
Sprinkler installation	20
Sprinkler service	45

**Schools: General lawn varieties**

Variety	Amount	
	<i>Acres</i>	<i>Percent</i>
Unknown	14,000	30.4
Bluegrass/Fescue	13,100	28.5
Kentucky Bluegrass	5,000	10.9
Ryegrass	4,900	10.7
Other	4,000	8.7
Fine Fescue	1,600	3.5
Natural	1,100	2.4
Bentgrass	900	2.0
Improved Turf Type Tall Fescue	800	1.7
Kentucky 31 Tall Fescue	300	0.7
Poa-Annua	250	0.5
Poa/Bentgrass	50	0.1
Total	46,000	100

**Schools: Sources of lawn care information**

Source	Percent reporting
Lawn service companies	45
Peers	37
Commercial tech reps	28
Magazines	23
University specialists	21
Private consultant	20
County extension	19
Garden center	16
Product labels	15
Technical journals	9
Internet	8
Other	7
Newspaper	5

**Schools: General lawn problems <sup>1</sup>**

Problem	Percent reporting
Drought	66
Weeds	54
Traffic	42
Poor soil	31
Moles/voles	17
Insects/grubs	15
Poor Drainage	14
Equipment maintenance	9
Excessive shade	4
Thatch	3
Erosion	3
Disease	2
Other	2

<sup>1</sup> Weighted by acres.

**Schools: Athletic field varieties**

Variety	Amount	
	<i>Acres</i>	<i>Percent</i>
Bluegrass/Fescue	3,100	23.0
Unknown	2,900	21.5
Kentucky Bluegrass	2,300	17.0
Athletic mix	1,800	13.3
Ryegrass	1,400	10.4
Other	800	5.9
Kentucky 31 Tall Fescue	300	2.2
Poa-Annua	250	1.9
Improved Turf Type Tall Fescue	250	1.9
Fine Fescue	200	1.5
Bentgrass	100	0.7
Natural	100	0.7
Total	13,500	100

**Schools: Irrigation**

Item	Amount
	<i>Acres</i>
Area irrigated	10,900
	<i>Dollars</i>
Purchased irrigation water	1,000,000

**Schools: Sources of irrigation water**

Source	Amount
	<i>Percent</i>
Municipal water	58
Ponds/lakes	2
Rivers/streams	3
Wells	37

**Schools: Athletic field problems <sup>1</sup>**

Problem	Percent reporting
Traffic	55
Drought	54
Weeds	48
Poor drainage	25
Poor soil	24
Moles/voles	14
Insects/grubs	11
Equipment maintenance	9
Thatch	7
Disease	6
Other	5
Erosion	2
Excessive shade	1

**Schools: Employees, payroll, and contracted services for turf maintenance**

Item	Amount
	<i>Number</i>
Year-round employees	1,700
Seasonal employees	1,650
	<i>Dollars</i>
Payroll	54,700,000
Contracted services	5,900,000

<sup>1</sup> Weighted by acres.

**Schools: Athletic field use by type**

Type	Amount	Mean usage per year	Mean usage per month
	<i>Number</i>	<i>Months</i>	<i>Hours</i>
Baseball	1,530	4.8	75
Softball	1,400	4.7	75
Football	1,220	4.2	95
Soccer	1,490	5.5	85
Playgrounds	3,130	10.4	105
Other	250	5.3	85

**Schools: Input costs for lawns**

Item	Amount
	<i>Dollars</i>
Equipment purchases	4,800,000
Equipment rentals	190,000
Equipment repairs	1,000,000
Fertilizer	1,870,000
Fuel	620,000
Herbicides	500,000
Insecticides/fungicides	180,000
Lime	21,000
Mowing equipment supplies	700,000
Seed	560,000
Sod	250,000
Soil testing	19,000
Topsoil	520,000
Other	70,000
Total	11,300,000



# Lawn Service Companies

**Lawn service companies:  
Number of firms by type <sup>1</sup>**

Type	Amount
	<i>Number</i>
Landscape contractor	210
Landscape management	220
Lawn care	775
Mowing maintenance	460
Sprinkler installation and service	20
Other <sup>1</sup>	190
<b>Total</b>	<b>1,875</b>

<sup>1</sup> The majority of this category fit more than one of the five types listed.

**Lawn service companies:  
Lawn varieties maintained**

Variety	Acres	Percent
Kentucky Bluegrass	243,000	38.0
Bluegrass/Fescue	214,500	33.5
Unknown	69,900	10.9
Ryegrass	43,500	6.8
Fine Fescue	19,400	3.0
Other Mix	16,800	2.6
Bentgrass	16,500	2.6
Improved Turf Type Tall Fescue	12,400	1.9
Kentucky 31 Tall Fescue	1,900	0.3
Poa-Annua	1,100	0.2
Other	600	0.1
Poa/Bentgrass	400	0.1
<b>Total</b>	<b>640,000</b>	<b>100</b>

**Lawn service companies: Services performed**

Service	Percent of acres
Mowing/trim	63
Fertilization	61
Weed control	58
Fall clean-up	41
Spring clean-up	40
Edging	39
Insect control	18
Mulching	16
Coring aeration	12
Sprinkler service	11
Disease control	10
Installation (seed/sod)	5
Renovation/overseed	5
Dethatching/power rake	4
Sprinkler installation	3
Mole/rodent control	3
Soil testing	2

**Lawn service companies: Highest educational level completed**

Level	Owner	Division manager	Crew leader
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Elementary	2	0	2
High School	42	52	67
2 Year College	27	25	20
4 Year College	25	21	11
Masters	4	2	0

**Lawn service companies: Acres maintained by type of client**

Client	Amount	
	Acres	Percent
Private homes	295,000	46.1
Office buildings	115,000	18.0
Condominiums	40,200	6.3
Apartments	34,500	5.4
Schools/churches	23,200	3.6
Parks	12,400	1.9
Cemeteries	3,800	0.6
Airports	1,800	0.3
Golf courses	1,600	0.3
Others <sup>1</sup>	112,500	17.6
<b>Total</b>	<b>640,000</b>	<b>100</b>

<sup>1</sup> Includes highway and utility right-of-ways, factories, and commercial areas.

**Lawn service companies:  
Employees and payroll**

Item	Amount
	<i>Number</i>
Year-round employees	4,100
Seasonal employees	7,500
	<i>Dollars</i>
Payroll	140,000,000

**Lawn service companies:  
Sources of lawn care information**

Source	Percent reporting
Magazines	46
Peers	42
Commercial tech reps	27
Technical journals	27
County extension	25
Garden center/nursery	24
University specialists	19
Other	17
State green industry	9
Local green industry	8
Private consultant	8
Newspapers	7
Community college	2
TV/radio	2

**Lawn service companies:  
Major lawn care problems**

Problem	Percent reporting
Drought	74
Insects/grubs	32
Weeds	30
Labor costs	25
Equipment maintenance	21
Water availability	17
Moles/voles	16
Disease	12
Poor drainage	9
Other	6
Traffic	5
Excessive shade	5
Thatch	3
Erosion	2
Nematodes	1

**Lawn service companies:  
Input costs for lawns**

Item	Amount
<i>Dollars</i>	
Fertilizer	22,100,000
Herbicides	7,600,000
Insecticides/fungicides	3,700,000
Lime	250,000
Mulch	5,000,000
Seed	4,200,000
Sod	4,500,000
Topsoil	4,800,000
Other	250,000
Total	52,400,000

**Lawn service companies:  
Equipment costs and value**

Item	Amount
<i>Dollars</i>	
Leasing/renting	2,300,000
Purchases	31,700,000
Repair/maintenance	16,200,000
Supplies	17,900,000
Market value	139,700,000

---

## INTERNET ACCESS

Reports, data products, and services published by Michigan Agricultural Statistics Service, Michigan Department of Agriculture, and National Agricultural Statistics Service of the United States Department of Agriculture are available on the Worldwide Web. There is no charge for connecting to these Internet addresses:

- **Michigan Department of Agriculture (MDA)**

MDA home page at: <http://www.michigan.gov/mda>

- **Michigan Agricultural Statistics Service (MASS)**

MASS home page at: <http://www.nass.usda.gov/mi>

Under the **MASS** home page you will find up-to-date data such as Crop-Weather releases, press releases, *Agriculture Across Michigan*, and county estimates.

- **National Agricultural Statistics Service (NASS)**

NASS home page at: <http://www.usda.gov/nass>

You can access national releases, 1997 Census of Agriculture data, and home pages of **NASS** state offices including Michigan from this web site. *Michigan Crop Weather* and national releases by free e-mail subscription are available from this site.

---

## AUTOFAX ACCESS

NASSFax service is available for some reports from your fax machine. Please call 202-720-2000, using the handset attached to your fax. Respond to the voice prompts.

---

## PRINTED REPORTS OR DATA PRODUCTS

CALL OUR TOLL-FREE ORDER DESK: 1-800-999-6779 (U.S. and Canada)

Other areas, please call 1-703-834-0125 FAX: 1-703-834-0110

(Visa, MasterCard, check, or money order acceptable for payment).

---

## ASSISTANCE

For assistance or questions regarding Michigan agriculture, call 1-800-453-7501. Further information about NASS or its products or services can be obtained by contacting the Agricultural Statistics HOTLINE at 1-800-727-9540, 7:30 a.m. to 4:30 p.m. ET or e-mail: [nass@nass.usda.gov](mailto:nass@nass.usda.gov).

---

