

Specialty Crop Block Grant Program-Farm Bill (FY14)

Final Performance Report

**Grant Title: Michigan Nursery & Floriculture
Product Mix, Sales, Energy, and Labor Survey**

Grant #: 791N5500119

Grantee: Michigan Nursery & Landscape Association

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Title of Project:**Michigan Nursery & Floriculture Product Mix, Sales, Energy, and Labor Survey****Project Summary:**

This project was a survey conducted by USDA NASS of nursery and floriculture growers in Michigan to support maintaining and improving the competitiveness of Michigan's nursery and floriculture industry. It is critical that the industry and other agricultural interest groups have current information to enable them to effectively plan economic development, promotion, and public policy activities. This information is also important to establish the future needs of the industry as it faces the challenge of remaining competitive in the marketplace. There hasn't been a survey of nursery production since 2004 and floriculture production has never had a State survey completed. With changes in inputs, not having accurate data puts us at a competitive disadvantage when remediating current issues.

Project Approach:

The project partners met to review project plans and responsibilities. The industry partners then met with their respective producers to determine what should be included in the questionnaire, based on information that would be most useful for future growth. In addition, the sample lists of producers were identified, generated, and tested by NASS to qualify. Based on the information identified, project partner NASS then designed, planned, and conducted a comprehensive survey for nursery and floriculture growers. This included questionnaire design, sample design, planning and oversight of data collection, editing and analysis of data, summary of data, and concluded with the design and generation of a final report.

Goals and Outcomes Achieved:

The questionnaire was sent out to 1,140 qualifying nursery, floriculture, and greenhouse producers. With an overall response rate of 75%, information was collected and compiled from 696 respondents and other sources including the Census of Horticulture, which ran concurrent with this survey. Our goal for responses was 82.5% of producers.

The survey consisted of three parts—nurseries, floriculture, and greenhouses and contained specific questions for each industry.

For nurseries the questions asked and information collected includes:

- the number of field and container grown operations and total acres,
- number of operations and sales, by sales categories,
- sales of nursery stock and propagative materials,
- number of operations and acres in production of woody plants and herbaceous plants by size group and MDARD region,
- number of operations and area in production of propagative materials,
- number of operations and acres by county and MDARD region.

For floriculture the questions asked and information collected includes:

- number of operations and sales by sales category,
- wholesale sales by market type and sales class,
- top five states by percentage of sales,
- percent of production not sold by sales class,
- number of operations which were asked by customers if plants were treated with neonicotinoids by sales class,
- percent of operations planning to use neonicotinoids in 2015 by sales class,
- type of control utilized for pest/disease management by sales class,
- irrigation water sources by sales class,

- maximum daily water withdrawal/use by sales class
 - water draw reduction method, present of operations using them, by sales class
 - current or future production problems
 - sources of information for business decision making
 - communication and research methods
 - operations that use MI Floriculture Growers Council as primary legislative contact by sales class
 - social media used for business
 - year firm was established
 - year operator was born
 - establishment of business succession plan by sales class
 - intentions to expand within the next year by sales class
- For greenhouses the questions asked and information collected includes:
- operations and area by size class
 - production area by type
 - principal type of heater by size class
 - average heating costs by fuel type and size class
 - lighting used to control plant grower/flowering size by size class
 - average electricity expenditures for lighting to control plant growth and flowering by size class
 - energy conservation strategies in effect during 2014
 - alternative energy sources used
 - number of operations and acres by county and MDARD region

The final report provides reliable data to allow for good decision-making by growers, handlers, input suppliers, the industry, governmental agencies, research and extension specialists, and policy makers at the local, regional, and national levels. Collection and distribution of this data may impact how our industry responds to and benefits from the more current and accurate economic production data.

Next steps are to distribute the results through our print and electronic publications and at our annual Expositions.

Beneficiaries:

The beneficiaries of this project are the 1,140 nursery and floriculture growers in the state of Michigan who will be impacted by having at their disposal this valuable information on the industry.

The final report provides reliable data on a variety of topics and areas (as listed in previous Goals and Outcomes achieved) to allow for good decision-making by growers, handlers, input suppliers, the industry, governmental agencies, research and extension specialists, and policy makers at the local, regional, and national levels.

Lessons Learned:

Overall the project went without complication and we were able to obtain good information. One insight we learned is that our industries are asked to complete national surveys on a regular basis. If we were to do this again we would plan it for a year that they weren't already filling out another survey. Also there is a hesitancy now to fill out these surveys for a variety of reasons that include time constraints and fear that competitors will see the information.

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Additional Information:

The following is the final report with results of the Michigan Nursery & Floriculture Product Mix, Sales, Energy, and Labor Survey.

Nursery

Nurseries: Number of operations and acres, by category, 2014

Category	Field grown		Container grown		Total	
	Operations	Acres	Operations	Acres	Operations	Acres
Deciduous trees	183	2,025	89	405	243	2,430
Deciduous shrubs	50	130	122	1,140	166	1,270
Narrow-leaved evergreens	213	4,215	74	245	260	4,460
Broad-leaved evergreens	21	80	60	75	75	155
Roses	0	0	66	55	67	55
Fruit trees	12	110	27	85	38	195
Small fruits	10	240	39	45	45	285
All woody plants	293	6,800	177	2,050	403	8,850
Daylillies	50	90	89	20	130	110
Hosta	36	50	143	50	171	100
Ornamental grasses	29	37	103	28	127	65
Other herbaceous perennials	58	570	200	185	242	755
Vines and ground covers	14	10	59	130	69	140
Bulbs, corms and rhizomes	23	460	26	15	47	475
Water garden (aquatic) plants	5	3	13	2	16	5
All herbaceous plants	124	1,220	252	430	341	1,650
Michigan	394	8,020	323	2,480	614	10,500

Nurseries: Number of operations and sales, by sales category, 2014

Sales category	Operations	Percent	Dollars	Percent
\$1,000 or less	87	13.8	50,000	0.0
\$1,001 to \$10,000	200	31.7	950,000	0.4
\$10,001 to \$100,000	190	30.2	8,000,000	3.5
\$100,001 to \$250,000	51	8.1	8,500,000	3.7
\$250,001 to \$1,000,000	71	11.3	33,500,000	14.5
\$1,000,001 or more	31	4.9	180,000,000	77.9
Michigan	¹ 630		231,000,000	

¹ Includes 18 operations which produced only propagative materials.

Nurseries: Sales of nursery stock and propagative materials, 2014

Category	Sales
	<i>1,000 dollars</i>
Woody Plants	
Wholesale	88,100
Retail	14,800
Through own landscaping business	3,400
Herbaceous Plants	
Wholesale	82,300
Retail	12,300
Through own landscaping business	800
Propagative Materials	
Wholesale	29,200
Retail	100
Michigan ¹	261,000

¹ Wholesales: Michigan - 45%, to other states - 54%, to other countries - 1%.

Nurseries: Number of operations and acres in production of woody plants, by size group, 1999-2014

Size group	Operations			Acres		
	1999	2004	2014	1999	2004	2014
1 acre or less	185	223	116	90	100	50
1.1 to 5 acres	272	308	110	830	940	340
5.1 to 10 acres	129	120	48	1,000	920	380
10.1 to 25 acres	119	144	68	2,050	2,390	1,180
25.1 to 50 acres	65	64	33	2,230	2,300	1,250
50 acres or more	57	52	28	10,150	10,980	5,650
Michigan	827	911	403	16,350	17,630	8,850

Nurseries: Number of operations and acres in production of woody plants, by Michigan Department of Agriculture and Rural Development Region, 2014

MDARD region	Field grown		Container grown		Total	
	Operations	Acres	Operations	Acres	Operations	Acres
1	105	2,555	51	45	136	2,600
2	88	2,540	67	1,910	134	4,450
3	100	1,705	59	95	133	1,800
Michigan	293	6,800	177	2,050	403	8,850

Nurseries: Number of operations and acres in production of herbaceous plants, by size group, 1999-2014

Size group	Operations			Acres		
	1999	2004	2014	1999	2004	2014
0.5 acre or less	274	314	200	75	65	40
0.6 to 1 acre	88	86	63	75	70	55
1.1 to 5 acres	113	109	59	250	235	145
5.1 acres or more	32	40	19	1,550	2,600	1,410
Michigan	507	549	341	1,950	2,970	1,650

Nurseries: Number of operations and acres in production of herbaceous plants, by Michigan Department of Agriculture and Rural Development region, 2014

MDARD region	Field grown		Container grown		Total	
	Operations	Acres	Operations	Acres	Operations	Acres
1	43	50	69	120	105	170
2	43	1,130	102	270	128	1,400
3	38	40	81	40	108	80
Michigan	124	1,220	252	430	341	1,650

Nurseries: Number of operations and area in production of propagative materials, 2014

Category	Operations	1,000 sq ft
Woody plants	82	7,970
Herbaceous plants	84	1,750
Michigan	112	9,720

Nurseries: Number of operations and acres, by county and Michigan Department of Agriculture and Rural Development region, 2014

County and MDARD region	Operations	Acres
Alcona	1	
Alger	4	
Alpena	1	
Antrim	9	
Arenac	1	
Baraga	1	
Bay	7	65
Benzie	3	5
Charlevoix	3	
Cheboygan	1	
Chippewa	2	
Clare	1	
Delta	1	
Emmet	12	100
Genesee	15	160
Gladwin	2	
Grand Traverse	7	
Houghton	1	
Huron	5	
Iosco	2	
Isabella	5	
Kalkaska	2	
Lapeer	14	185
Leelanau	12	25
Luce	1	
Mackinac	1	
Manistee	7	
Marquette	2	
Mason	6	195
Mecosta	1	
Midland	5	
Missaukee	4	
Montcalm	9	
Muskegon	9	
Newaygo	6	75
Oceana	2	
Ogemaw	2	
Osceola	2	
Otsego	2	
Saginaw	17	
Sanilac	6	
Schoolcraft	1	
Tuscola	3	
Wexford	4	10
Others ¹		1,950
Region 1	202	2,770

Nurseries: Number of operations and acres, by county and Michigan Department of Agriculture and Rural Development region, 2014

County and MDA region	Operations	Acres
Allegan	28	1,100
Barry	2	
Berrien	31	460
Branch	5	5
Calhoun	9	85
Cass	7	15
Ionia	5	
Kalamazoo	21	115
Kent	26	170
Ottawa	68	2,890
St. Joseph	6	
Van Buren	20	330
Others ¹		680
Region 2	228	5,850
Clinton	13	85
Eaton	10	80
Gratiot	3	
Hillsdale	5	
Ingham	16	
Jackson	10	155
Lenawee	12	110
Livingston	17	220
Macomb	12	
Monroe	22	
Oakland	26	170
St. Clair	8	
Shiawassee	6	
Washtenaw	23	280
Wayne	17	
Others ¹		780
Region 3	200	1,880
Michigan	² 630	10,500

¹ Not published separately to avoid disclosure of individual operations.

² Includes 16 operations which produced only propagative materials.

Floriculture

Floriculture: Number of operations and sales, by sales category, 2014

Sales Class	Operations	Total Sales	Wholesale Sales	Retail Sales
	<i>Number</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
\$1 - \$9,999	159	500	100	400
\$10,000 - \$99,999	210	9,300	1,700	7,600
\$100,000 - \$499,999	145	34,600	16,800	17,800
\$500,000+	137	428,000	370,700	57,300
Michigan	651	472,400	389,300	83,100

Floriculture: Wholesale sales, by market type and sales class, 2014

Market type	Sales class				
	\$1-\$9,999	\$10,000-\$99,999	\$100,000-\$499,999	\$500,000+	Michigan
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Mass merchandisers	3	2	12	28	27
Home centers	11	10	9	21	21
Single location gardens or retail florists	56	46	38	10	11
Multiple location garden stores (chains)	0	3	11	5	5
Landscape firms (in-house or external)	7	13	11	4	4
Re-wholesalers (brokers, other growers, etc.)	23	26	19	32	32

Floriculture: Top five destination states by percent of sales, 2014

State	Percent
Michigan	55
Illinois	20
Indiana	6
Wisconsin	5
Ohio	4
Others	10

Floriculture: Percent of production not sold by sales class, 2014

Class	Percent
\$1 - \$9,999	12
\$10,000 - \$99,999	6
\$100,000 - \$499,999	6
\$500,000 +	8
Michigan	7

**Floriculture: Percent of operations
which were asked by customers if
plants were treated with
neonicotinoids, by sales class,
2014**

Class	Percent
\$1 - \$9,999	8
\$10,000 - \$99,999	9
\$100,000 - \$499,999	19
\$500,000 +	33
Michigan	16

**Floriculture: Percent of operations
planning to use neonicotinoids in
2015, by sales class**

Class	Percent
\$1 - \$9,999	3
\$10,000 - \$99,999	11
\$100,000 - \$499,999	31
\$500,000 +	49
Michigan	20

**Floriculture: Pest/disease management - percent of production
by type and sales class, 2014**

Type of control	Sales class				
	\$1-\$9,999	\$10,000-\$99,999	\$100,000-\$499,000	\$500,000 +	Michigan
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Biological only	12	11	10	13	13
Chemical only	19	50	58	50	51
Biological & chemical	24	23	20	34	33
None	45	16	12	3	3

Floriculture: Irrigation water sources, by sales class, 2014

Source	Sales class				
	\$1-\$9,999	\$10,000-\$99,999	\$100,000-\$499,999	\$500,000+	Michigan
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Natural surface	9	10	12	3	4
City (potable)	12	25	19	34	33
Captured/reclaimed	5	1	4	11	10
Well	74	64	65	52	53

**Floriculture: Maximum
daily water
withdrawal/use by sales class, 2014**

Class	Gallons
	<i>Average</i>
\$1-9,999	750
\$10,000-99,999	2,550
\$100,000-499,999	4,900
\$500,000+	24,800
Michigan	7,300

**Floriculture: Water draw reduction methods, percent of operations using,
by sales class, 2014**

Method	Sales class				
	\$1-\$9,999	\$10,000-\$99,999	\$100,000-\$499,999	\$500,000+	Michigan
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Capture & use rain water	37	26	21	12	25
Reuse/recycle water	10	8	10	15	10
Smart irrigation ¹	42	44	52	73	51
Minimal leaching	42	59	68	76	60
Other	12	9	10	5	9

¹ Technology or practices that keep water from falling in non-crop areas.

Floriculture: Current or future production problems

Problem	First choice	Second choice	Third choice	Fourth choice	Fifth choice
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Availability of financing	4	3	3	5	4
Competition	16	10	12	10	9
Energy availability/costs	13	11	11	12	9
Excessive debt	1	3	4	2	3
Government regulations	11	9	6	8	9
Labor availability	15	8	7	11	7
Labor costs	8	18	14	9	7
Loss of chemical registration	1	1	3	4	4
Market demand	9	12	11	11	13
Marketing	2	5	7	8	6
Non-native pest information	1	2	2	4	5
Profitability	16	16	16	12	17
Water withdraw/use/availability	1	1	3	3	4
Other	2	1	1	1	3

Floriculture: Sources of information for business decision making, 2014

Source	First choice	Second choice	Third choice	Fourth choice
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Other growers	41	17	19	14
Michigan State University	26	18	20	17
Extension service	9	22	20	18
Commercial tech. reps	8	22	17	13
Greenhouse association	3	7	11	18
Private consultant	4	7	4	9
Other college/university	1	2	4	8
Other	8	5	5	3

Floriculture: Business communication and research methods, 2014

Medium	Percent
Face-to-face contact	79
Internet	62
Magazines/journals	65
Podcast	4
Seminars/trade shows	43
Social media	10
Telephone/fax	32
Webinars	9
Other	2

Floriculture: Operations using Michigan Floriculture Growers Council as primary legislative contact, by sales class, 2014

Class	Percent
\$1 - \$9,999	10
\$10,000 - \$99,999	25
\$100,000 - \$499,999	45
\$500,000+	64
Michigan	34

Floriculture: To represent business social media used, 2014

Medium	Percent
Blog	4
Facebook	46
LinkedIn	5
Pinterest	7
QR Codes	3
Twitter	5
Website	46
Other	4
None	34

**Floriculture: Year
firm established,
2014**

Year established	Percent
1975 or earlier	26
1976 - 1990	28
1991 - 2000	21
2001 or later	25

**Floriculture: Year operator
born, 2014**

Year born	Percent
1945 or earlier	17
1946 - 1955	31
1956 - 1965	32
1966 or later	20

**Floriculture: Establishment
of business
succession plan, by sales class, 2014**

Class	Percent
\$1 - \$9,999	20
\$10,000 - \$99,999	26
\$100,000 - \$499,999	38
\$500,000+	52
Michigan	33

**Floriculture: Intentions to
expand within
the next year, by sales class, 2014**

Class	Percent
\$1 - \$9,999	21
\$10,000 - \$99,999	8
\$100,000 - \$499,999	14
\$500,000+	20
Michigan	15

Greenhouses

Greenhouses: Operations and area by size class, 2014

Size class	Operations	Area
	<i>Number</i>	<i>1,000 sq. feet</i>
Less than 4,000 sq. feet	172	295
4,000 - 24,999 sq. feet	254	2,920
25,000 - 99,999 sq. feet	162	8,920
100,000 or more sq. feet	117	38,265
Michigan	705	50,400

Greenhouses: Greenhouse production area by type

Type	Operations	Area
	<i>Number</i>	<i>1,000 sq. feet</i>
Glass	74	4,000
Rigid plastic	131	3,470
Double layer poly	551	41,165
Single layer poly	152	1,680
Other	5	85
Michigan	705	50,400

Greenhouses: Principal type of heater by size class, 2014

Type	Size class				Michigan
	LT 4,000 SF	4,000-24,999 SF	25,000-99,999 SF	100,000+ SF	
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Vented unit heater	46	73	85	84	71
Direct fire unit heater	12	4	5	4	6
Condensing boiler	4	6	2	6	5
Non-condensing boiler	2	4	5	6	4
Biomass burner/wood stove	12	6	1	0	5
None	24	7	2	0	9

Greenhouses: Average heating costs by fuel type and size class, 2014 ¹

Type	Size class				
	LT 4,000 SF	4,000-24,999 SF	25,000-99,999 SF	100,000+ SF	Michigan
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Natural gas	1,200	3,150	24,900	177,000	36,500
Fuel oil-heating oil, kerosene	180	570	270	100	350
Propane	850	1,900	2,350	6,200	2,450
Electricity	30	70	410	6,800	1,250
Biomass & wood logs	40	110	70	2,200	450
Total	2,300	5,800	28,000	192,300	41,000

¹ Mean of total greenhouses.

Greenhouses: Lighting used to control plant growth/flowering by size class, 2014

Type	Size class				
	LT 4,000 SF	4,000-24,999 SF	25,000-99,999 SF	100,000+ SF	Michigan
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Fluorescent	14	18	22	37	21
Incandescent	6	12	15	47	17
MH (metal halide)	1	1	6	14	4
HPS (high pressure sodium)	0	3	28	72	19
LED (light emitting diodes)	0	3	1	8	3
Other	1	1	1	4	1
None	81	72	66	23	65

Greenhouses: Average electricity expenditures for lighting to control plant growth and flowering, by size class, 2014 ¹

Size class	Dollars
Less than 4,000 sq. feet	180
4,000-24,999 sq. feet	460
25,000-99,999 sq. feet	3,360
100,000 or more sq. feet	32,650
Michigan	6,400

¹ Mean of total greenhouses.

Greenhouses: Energy conservation strategies in effect during 2014, by size class

Strategy	Size class				Michigan
	LT 4,000 SF	4,000-24,999 SF	25,000-99,999 SF	100,000+ SF	
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Used photoperiodic lighting for long day plants	2	5	22	61	17
Used high intensity lighting for young plants	2	4	22	56	16
Purchased more efficient growing lights	2	4	8	31	9
Purchased more efficient heaters/heating system	6	21	32	52	25
Managed temperatures based on crop & finish date	20	42	62	83	48
Used temperature integration	7	9	18	34	15
Reduced air leaks	35	60	73	76	60
Transplanted larger plugs & liners	11	26	31	54	28
Installed and/or used retractable curtains	6	9	18	42	16
Installed and/or used horizontal air flow fans	21	34	49	70	40
Installed/used infrared anti-condensate poly film	8	18	34	63	27
Insulated side, knee, and/or end walls	15	22	28	46	24
Other	5	3	0	6	5
None	42	22	9	3	21

Greenhouses: Alternative energy sources used, 2014

Source	Percent
Solar	4
Biomass	10
Wind or other	1
None	86

**Greenhouses: Number of operations and area,
by county and Michigan Department of
Agriculture and Rural Development region, 2014**

County and MDARD Region	Operations	Area
	<i>Number</i>	<i>1,000 sq. ft.</i>
Alcona	2	
Alger	5	30
Alpena	2	
Antrim	6	87
Arenac	2	
Baraga	1	
Bay	9	
Benzie	2	
Charlevoix	5	38
Cheboygan	4	
Chippewa	1	
Clare	1	
Delta	4	
Dickinson	2	
Emmet	8	46
Genesee	20	
Gladwin	3	11
Gogebic	1	
Grand Traverse	5	
Houghton	4	
Huron	2	
Iosco	1	
Isabella	1	
Kalkaska	1	
Lake	2	
Lapeer	11	218
Leelanau	9	
Luce	2	
Manistee	3	
Marquette	2	
Mason	1	
Mecosta	5	18
Menominee	3	
Midland	4	
Missaukee	4	
Montcalm	10	46
Muskegon	15	867
Newaygo	4	36
Oceana	2	
Ogemaw	1	
Osceola	3	
Otsego	1	
Presque Isle	2	
Saginaw	8	361
Sanilac	6	65
Tuscola	4	21
Wexford	4	11
Others ¹		2,890
Region 1	198	4,745

**Greenhouses: Number of operations and area,
by county and Michigan Department of
Agriculture and Rural Development region, 2014**

County and MDARD Region	Operations	Area
	<i>Number</i>	<i>1,000 sq. ft.</i>
Allegan	19	1,235
Barry	6	264
Berrien	27	1,735
Branch	5	46
Calhoun	7	
Cass	6	
Ionia	3	
Kalamazoo	50	12,550
Kent	34	3,780
Ottawa	97	11,700
St. Joseph	4	42
Van Buren	18	818
Others ¹		1,260
Region 2	276	33,430
Clinton	8	
Eaton	3	
Gratiot	2	
Hillsdale	7	
Ingham	12	530
Jackson	13	206
Lenawee	11	257
Livingston	13	215
Macomb	30	2,265
Monroe	31	2,655
Oakland	25	785
St. Clair	12	
Shiawassee	4	47
Washtenaw	27	1,035
Wayne	33	3,040
Others ¹		1,190
Region 3	231	12,225
Michigan	705	50,400

¹ Not published separately to avoid disclosure of individual operations.