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Vineyards and Wineries in Michigan

A STATUS AND ECONOMIC CONTRIBUTION REPORT WITH FOCUS ON MICHIGAN WINE GRAPES

Authored by: Brigid Tuck, Extension Center for Community Vitality, and William Gartner, Department of Applied Economics



IN PARTNERSHIP WITH: NORTHERN GRAPES PROJECT



Department of
**APPLIED
ECONOMICS**

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August 2013

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NORTHERN GRAPES PROJECT

The emergence of cold hardy wine grape cultivars (i.e. primarily classified as *vitis riparia*) in the 1990s created a new and rapidly expanding industry of small vineyard and winery enterprises in states across New England, northern New York, and the Upper Midwest. While the North American ancestry of these cultivars confers exceptional climatic adaptation and disease resistance, other challenges to production, processing, and marketing have slowed their successful commercialization in regional and national markets. Because their growth habit and fruit composition differ from traditional grape hybrids (i.e. *vitis vinifera*), new viticulture and enological practices are needed. Marketing tools are also required to educate consumers unfamiliar with the grapes and the wine styles they produce. Consequently, the long-term viability of these new businesses requires coordinated research and extension to optimize viticulture, enological (winemaking), business management, and marketing practices. To meet the needs articulated by industry stakeholders, the United States Department of Agriculture funded the Northern Grapes Project.

The Northern Grapes Project brings together researchers, Extension specialists, and industry professionals from 13 states to address viticulture, enological, business management, and marketing issues related to growing cold hardy grapes. After five years, the project teams intend to have accomplished the following goals: 1) production and sales of wines made from cold climate cultivars will have doubled, 2) improved quality resulting from better growing and winemaking practices will have improved customer retention and driven repeat sales, 3) enhanced breeding and cultivar evaluation will have resulted in an accelerated pace of cultivar release, 4) cold climate cultivars will establish unique regional marketing identities in their area, 5) wineries will have understood and applied business and tasting room management practices that drive sales and profitability, and 6) wineries and vineyards will have successfully transitioned from “startup” to “sustainably profitable.”

To measure progress on these goals, one of the first tasks of the project team was to conduct a baseline survey. This survey, sent to grape growers and wineries in the participating states, gathered data on the current status of the grape and wine industries in general and on cold-hardy grape and wine production, specifically. Questions were asked pertaining to sales and production (wineries and vineyards), growing practices (vineyards), and operating practices (wineries).

This document reports the results of the baseline survey for vineyards and wineries in Michigan. It also quantifies the economic contribution of the industry. The focus of this report is on wine grape growers and on wineries with the designation of “producer of Michigan wines” under the Michigan Grape and Wine Industry Council’s definition. Under that definition, more than 50 percent of all fruit used in the wine production must be grown in Michigan.

VINEYARDS AND WINERIES IN MICHIGAN: EXECUTIVE SUMMARY

In spring 2012, grape growers and winery owners in 13 states were surveyed as part of the Northern Grapes Project. Questions asked pertained to sales and production (wineries and vineyards), growing practices (vineyards), and operating practices (wineries). This report presents the results for Michigan. The focus of this study is on wine grape growers and on wineries in Michigan designated “producers of Michigan wines” by the Michigan Grape and Wine Industry Council.

- The baseline study results reflect Michigan’s heritage as a wine producing state able to grow traditional wine grape varieties.. Cold-hardy grapes, which have been rapidly adopted in colder weather states, have not been as quickly adopted in Michigan.
- Michigan wine grape vineyards and “producer of Michigan wine” wineries tend to be more established and mature than in other participating states. Growth does continue in the industry; new vineyards and wineries are being established and existing vineyards and wineries continue to expand.
- Michigan wine grape vineyards are larger and more focused than their counterparts in other northern grape states. Planted acreage of the vineyards is larger. Vineyards rely more on paid labor and less on volunteer labor than similar vineyards in other northern grape states. Labor (cost and availability) constitutes two of Michigan’s wine grape growers’ biggest concerns.
- In 2011, wine grape vineyards in Michigan contributed \$11.6 million to the state economy, including 880 jobs paying \$5.5 million in labor income. Cold-hardy grape cultivars accounted for \$440,000 in Michigan’s economy with 30 jobs and \$210,000 in payments to labor.
- Wineries designated as “producers of Michigan wine” also show signs of maturity and size relative to wineries in the other project states. The wineries have diversified in their sales and marketing strategies. Wineries share the wine grape vineyard growers’ concerns about the cost and availability of labor. They rate government policies and regulations as their biggest challenge. Designated wineries in Michigan are more integrated into the tourism industry.
- In 2011, wineries with the designation of “producer of Michigan wine” contributed \$69.5 million in activity to the state’s economy. The wineries created 2,500 jobs which provided \$30.5 million in wages, salaries, and benefits. Cold-hardy grape cultivars were responsible for \$5.6 million of that value, 200 jobs and \$2.4 million in labor income.
- Wineries designated as “producers of Michigan wine” rely on visitors to their tasting rooms to drive sales. As a result of winery tourism, there was an additional \$70.8 million of spending in Michigan’s economy in 2011. This led to the creation of 930 jobs and \$21.6 million in wages, salaries, and benefits. Cold-hardy grapes contributed \$5.6 million to winery tourism in 2011.
- In total, wine grape growing and wineries producing Michigan wine contributed \$151.9 million to Michigan’s economy in 2011. The industry created 4,310 jobs which paid a total of \$57.6 million in wages, salaries, and benefits.



SURVEY METHODOLOGY AND RESPONSE RATES

In early 2012, project researchers at the University of Minnesota sent a survey to grape growers and wineries in the participating states. Grower and winery lists were provided to the University of Minnesota by industry associations in each state (see appendix 1 for a list of participating associations). An email was sent to all members of these lists, resulting in 2,746 invitations to participate in the survey. Of these, 501 responded, for an overall response rate of 18 percent. In addition, links to the survey were available allowing individual growers and wineries not directly associated with an industry group, and thus not receiving a direct email invitation, to participate in the survey. These links were also announced during the Northern Grapes Project webinars. The survey links generated 110 responses. Therefore 611 total responses to the survey were recorded.

Table 1-1 lists the participating states, the number of wineries and growers invited based on the industry association lists, the number of respondents using the open links, and the response rate. Minnesota has the highest membership totals.¹ South Dakota had the highest response rate.

The Michigan Grape and Wine Industry Council provided e-mail addresses for its membership. In total, 164 invitations to participate in the survey were sent to potential Michigan growers and wineries. Of those, 36 individuals responded, for a response rate of 22 percent. Throughout this report, these respondents will be used to represent the wine grape vineyard and “producer of Michigan wine” winery industries, as part of the Northern Grapes Project. Ideally, we would like a higher response rate. Future research should focus on increasing the number of responses.

State	Total Number of Contacts from Industry Associations	Number of Responses	Response Rates
Connecticut	32	5	16%
Illinois	272	52	19%
Iowa	222	66	30%
Massachusetts	28	10	36%
Michigan	164	36	22%
Minnesota	1,012	167	17%
North Dakota	54	14	26%
Nebraska	172	46	27%
New Hampshire	51	14	27%
New York	202	32	16%
South Dakota	14	11	79%
Vermont	47	18	38%

¹ Responses were categorized by state the grower or winery owner indicated as the state in which their operation is located.

Wisconsin	476	97	20%
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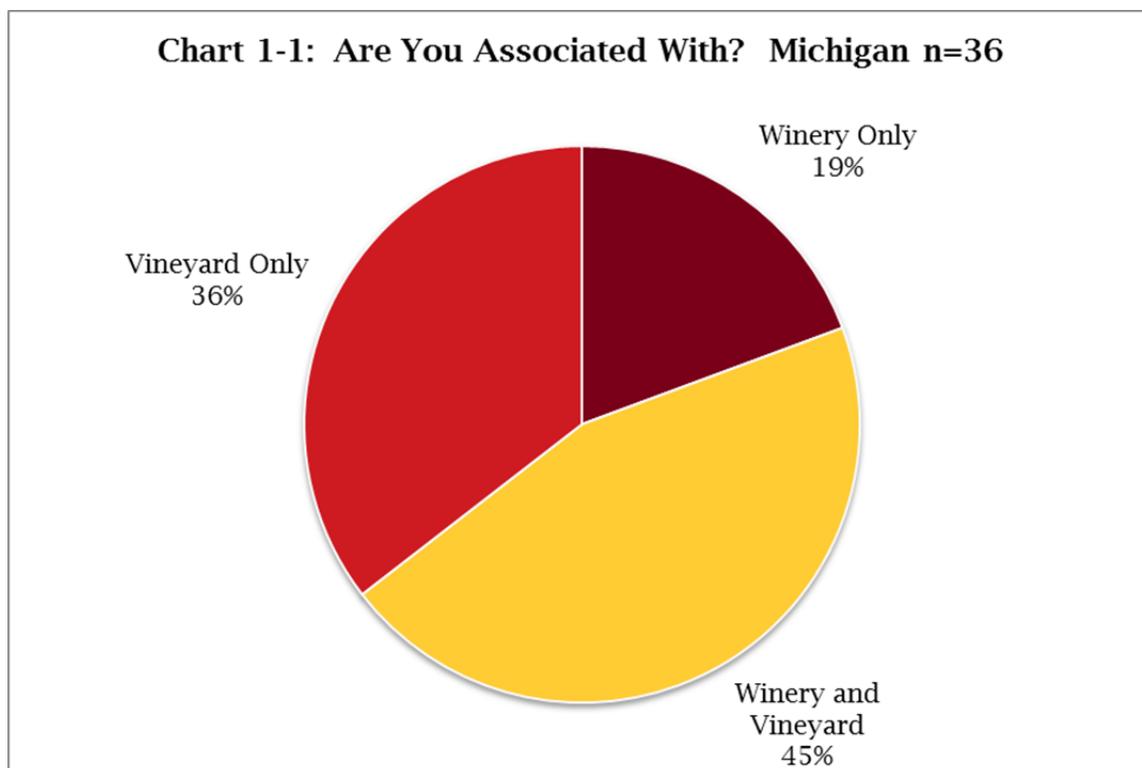
Not all of the survey responses were applicable to the baseline survey. Association memberships are generally open to all interested parties and therefore membership lists include individuals who may be considering growing or producing wine, or individuals who previously grew grapes or produced wines. The lists may also contain people associated with the industry in other capacities than growing and wine-making. Knowing this, the survey was designed to capture basic information on these individuals, even if they did not complete the full survey.

The first survey question asked “Are you associated with...1) a vineyard (past, present, or future), 2) a winery, 3) both, or 4) other. Those responding “other” were directed to the end of the survey.

Those responding “vineyard (past, present, or future)” were asked a follow-up question. Survey takers who indicated they grew grapes in the past or planned to grow grapes in the future were directed to the end of the survey.

The focus of the Northern Grapes Project is on commercial scale grape growers and wineries. Thus, grape growers were asked “Do you grow grapes for commercial sale or use? If you grow grapes exclusively for use in your own winery, answer yes”. Those responding “no” were directed to answer a series of questions about the size of their vineyard and then directed to the end of the survey.

Survey participants could be vineyard operators, winery operators, or operators of a joint vineyard-winery business (see chart 1-1). Approximately one-third (36 percent) of survey respondents in Michigan operate a vineyard only. Among winery owners, it is more common to operate a combination of a winery-vineyard operation, with approximately half (45 percent) of survey respondents reporting this arrangement. Twenty percent of respondents operated a winery independently of a vineyard. In total, the survey includes 20 wineries and 35 vineyards.

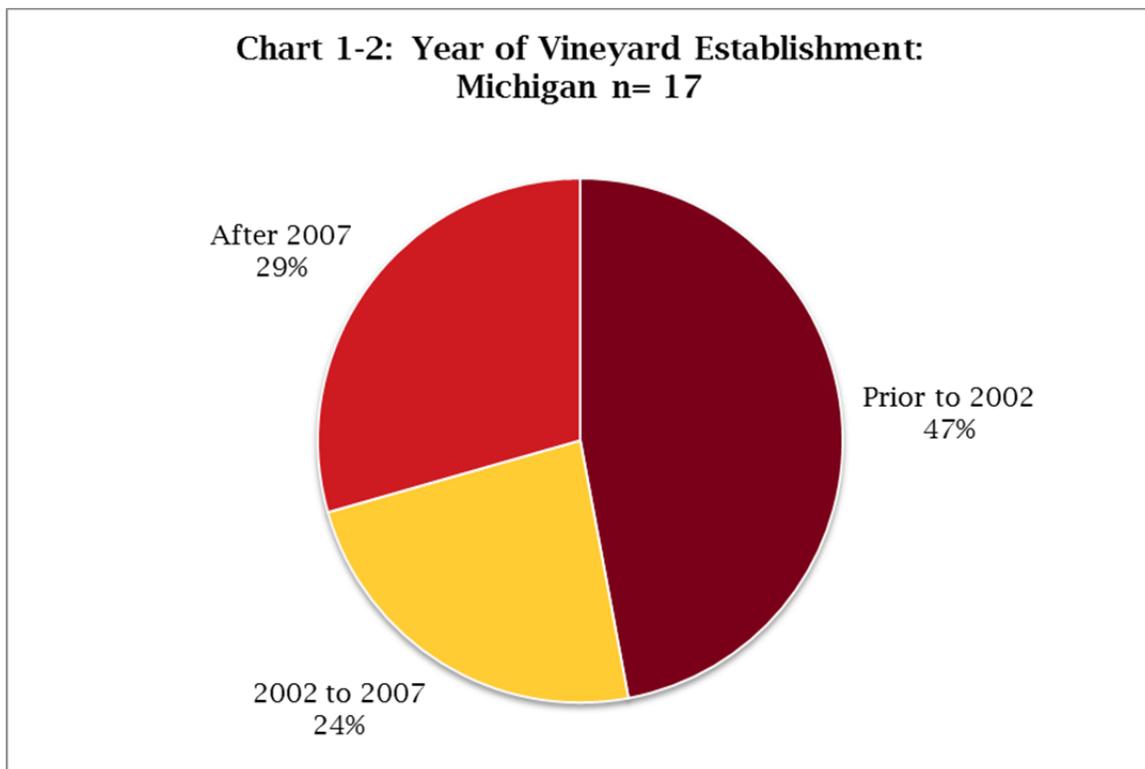


VINEYARD CHARACTERISTICS

Of the survey respondents, 35 indicated they owned and operated a vineyard in Michigan. Of those, 17 provided full and complete responses. Based on statistics from the Michigan Grape and Wine Industry Council there are 250 wine grape vineyards in Michigan. Therefore, the response rate for this study is 7 percent. Our focus of this study is on wine grape vineyards.

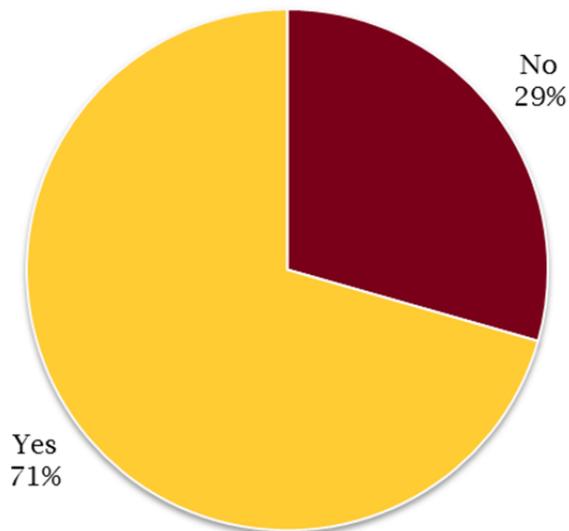
On balance, vineyards in Michigan are more mature than vineyards in other Northern Grape Project states. Across the 13 participating states, only 1 in 5 vineyards were established prior to 2002. In Michigan, nearly half the vineyards were established in that timeframe. Growth does continue in the Michigan vineyard industry, as nearly one-third of vineyards have been started since 2007, see chart 1-2.

Michigan varies significantly from other states in the Northern Grapes Project in that its history includes a long-tradition of grape growing. Michigan's climate and soils have allowed for vineyards to grow traditional wine grapes (i.e. vitis vinifera), while other participating states were limited in their ability to grow wine grapes until the cold-hardy varieties were developed.



In addition to new vineyards being established, current vineyards continue to expand their planted acreage. Three-fourths of responding vineyards indicated they had planted additional acreage since the original founding of their vineyard, chart 1-3.

Chart 1-3: Have You Added Acreage Since Your Vineyard Was Established? Michigan n= 17

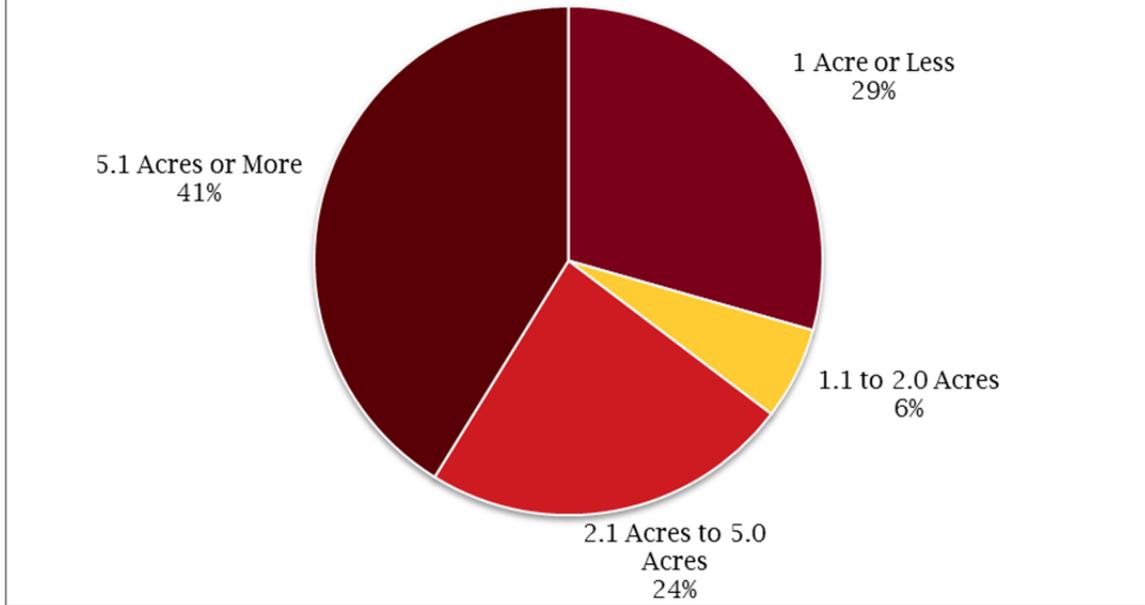


Michigan vineyards are, on average, larger than vineyards in the rest of the Northern Grapes Project states. Just over 40 percent of the vineyards are larger than 5 acres in size. Roughly one-third (29 percent) are 1 acre or smaller.

Our survey results, extrapolated out to the entire population of wine grape vineyards, indicate there are 3,100 acres planted in wine grape vines in Michigan. The Michigan Agricultural Statistics Service estimates there were 2,650 acres planted in wine grapes in 2011.

Information from the Michigan Agricultural Statistics Service indicates that only 4 percent of those vines are of the cold-hardy varieties defined in this study. (See appendix two for the definition of cold-hardy grapes).

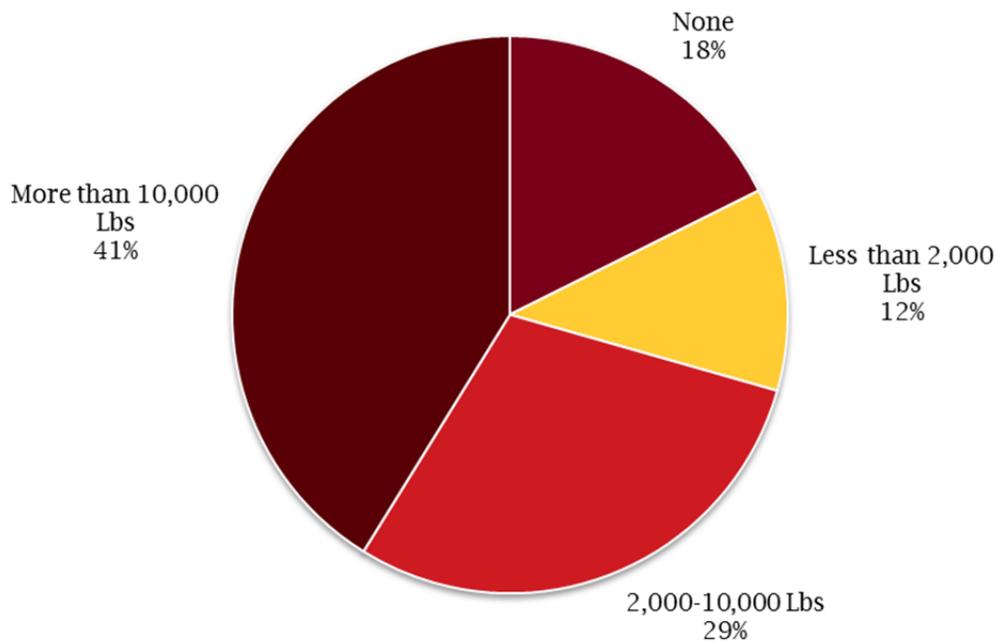
Chart 1-4: What is the Total Planted Acreage of Your Vineyard? Michigan n= 17



Vineyard production reflects the age of vineyards and the size of vineyards in the survey population (see chart 1-5). Eighteen percent of the vineyards surveyed indicated they did not produce any fruit in 2011. As depicted in chart 1-2, 29 percent of vineyards were planted after 2007, which means they likely have not reached maturity yet. Therefore, it is not surprising they have not produced harvestable fruit. Survey respondents also indicated a lack of fruit production due to weather conditions (drought, early frost, etc.), insects, or other pests.

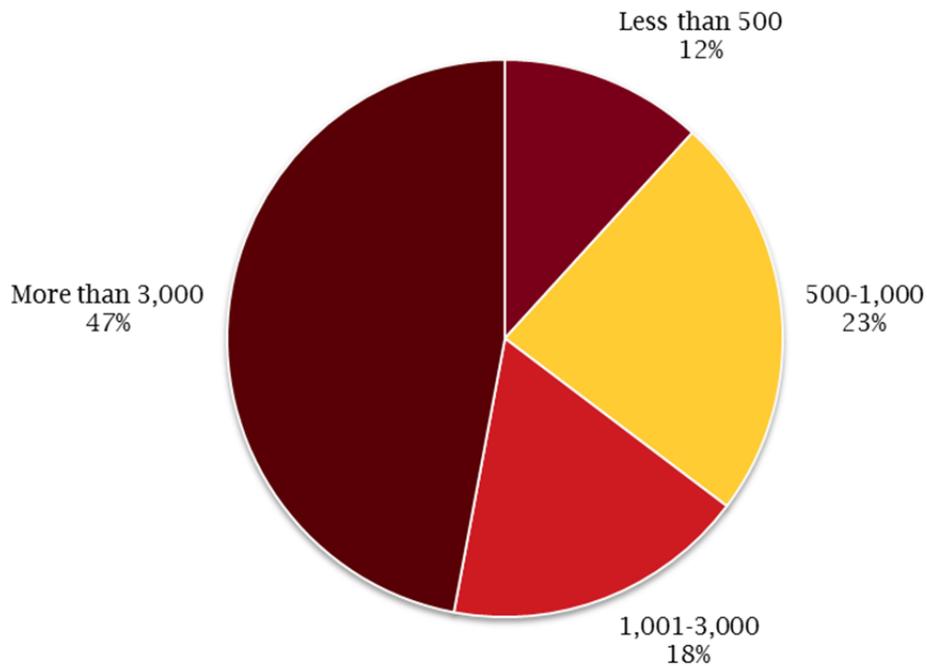
Survey results, extrapolated to represent all growers in the state, reveal Michigan wine grape growers produced approximately 7,300 tons of fruit in 2011. Average yield on producing acreage was 3.3 tons per acre.

Chart 1-5: Vineyard Production: Michigan n= 17



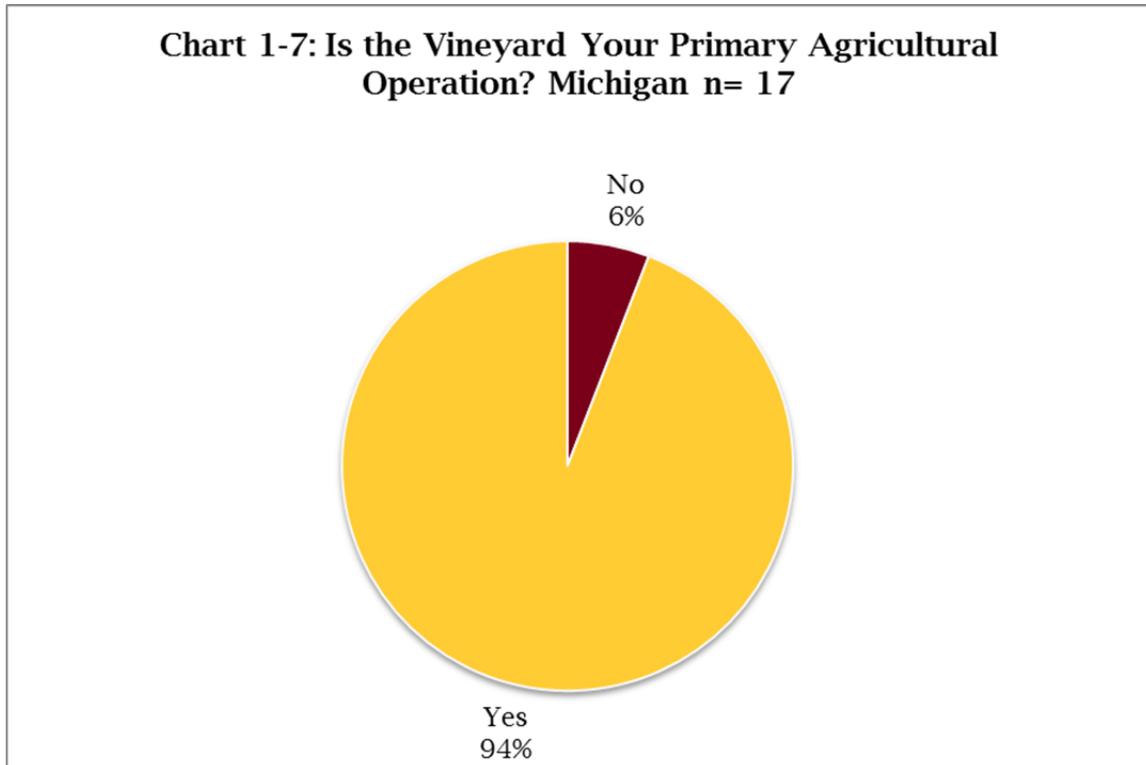
The average participating vineyard has 16,000 planted vines. Reflecting the relatively large size of wine grape vineyards in Michigan, nearly half of all wine grape vineyards have over 3,000 planted vines.

Chart 1-6: Total Vines in Vineyard: Michigan n= 17



Vineyard Operations

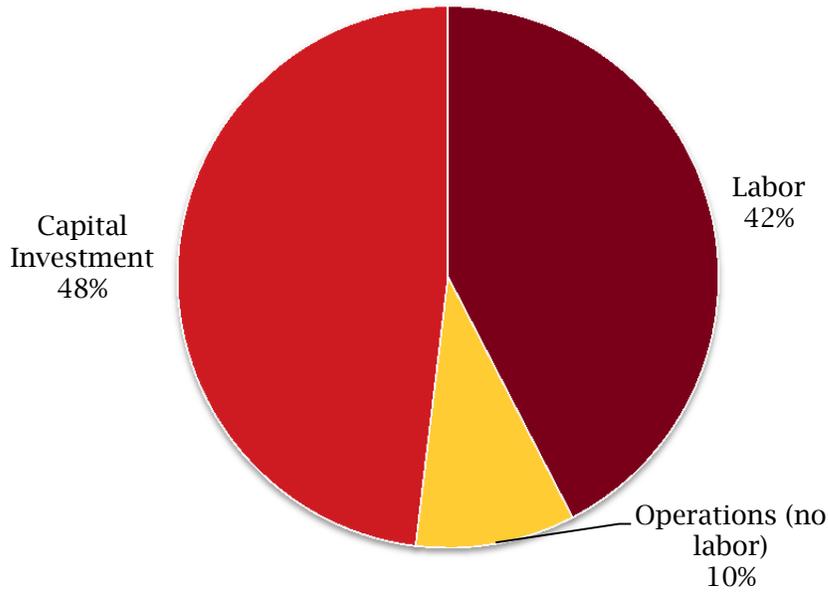
Michigan vineyards are overwhelming the primary agricultural operation for their owners (see chart 1-7). While in other states, nearly one-quarter of vineyards are a secondary operation for a fruit or commercial farmer, this does not hold true in Michigan. None of the responding vineyards operate a commercial nursery in conjunction with their vineyard.



The average responding vineyard spent \$13,100 on operations (including \$10,700 in labor payments) in 2011. Operating expenses include fertilizers, fungicides, cover crops, water, fuel, overhead costs, marketing, and taxes. Responding vineyards also spent an average of \$12,200 on capital investments, including trellis systems, tractors, crushers, pick-ups, ATV's, and other equipment.

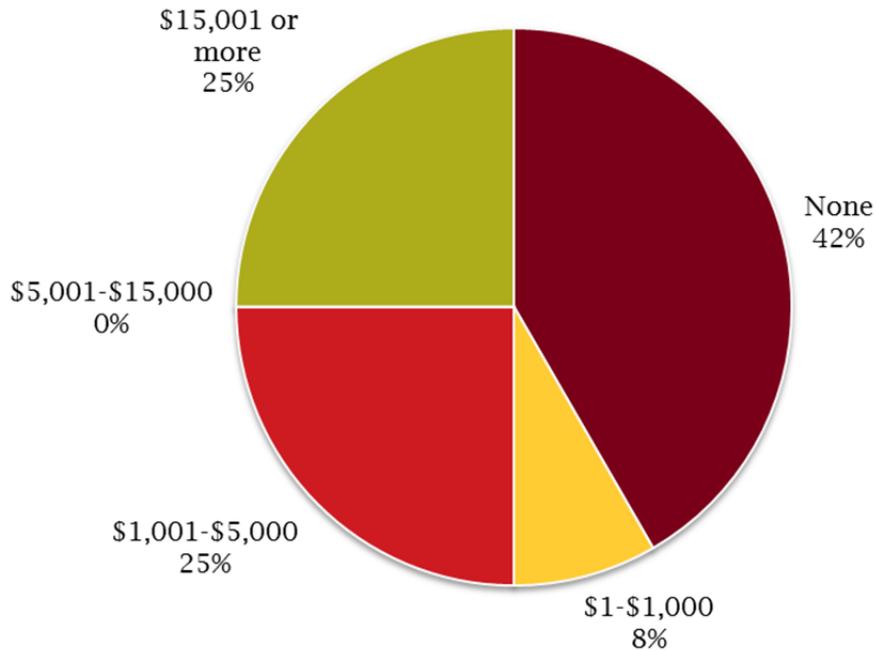
In total, wine grape vineyards in the state of Michigan spent \$6.3 million to operate in 2011. Operating expenses totaled \$3.3 million, including \$2.7 million in labor expenditures. Capital expenses in Michigan totaled \$3.1 million, see chart 1-8.

**Chart 1-8: Expenditures by Category:
Michigan n=17**

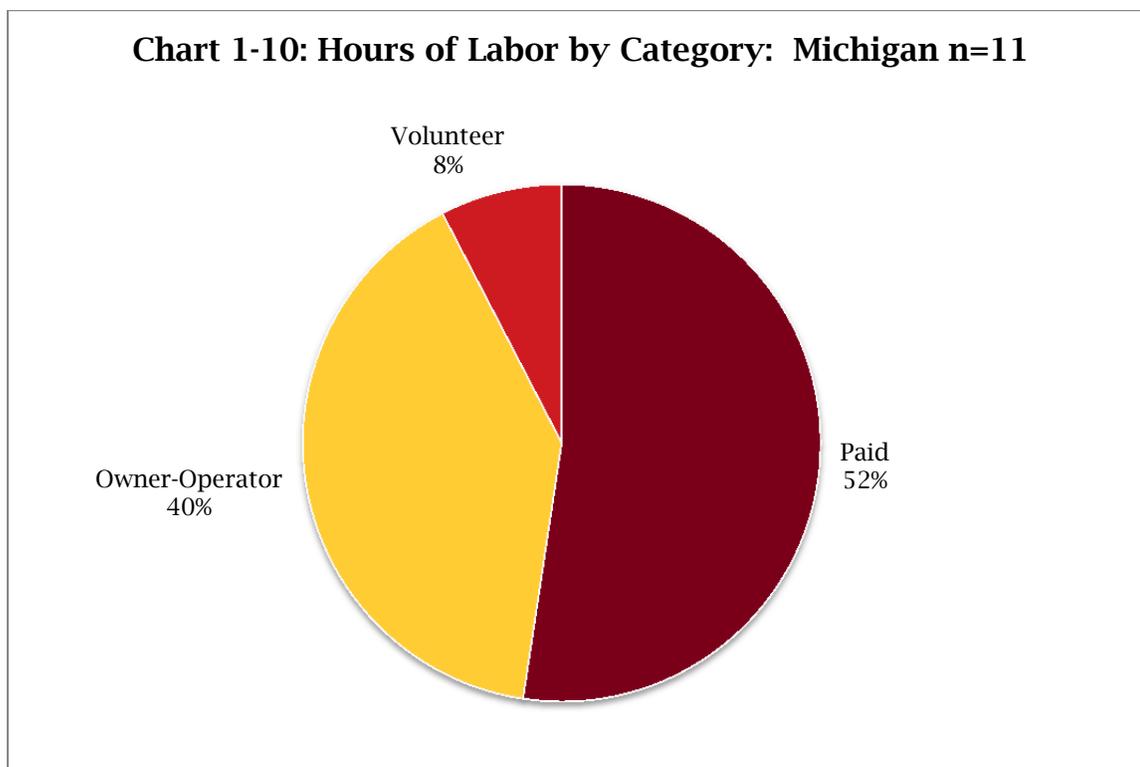


Of the 12 vineyards that responded to the question regarding labor expenditures, 42 percent reported no expenditures for labor, in chart 1-9. This is primarily because the owner/operator did all the labor or the vineyard or used volunteer or family labor to complete the vineyard tasks.

Chart 1-9: Vineyard Labor Expenditures: Michigan n= 12

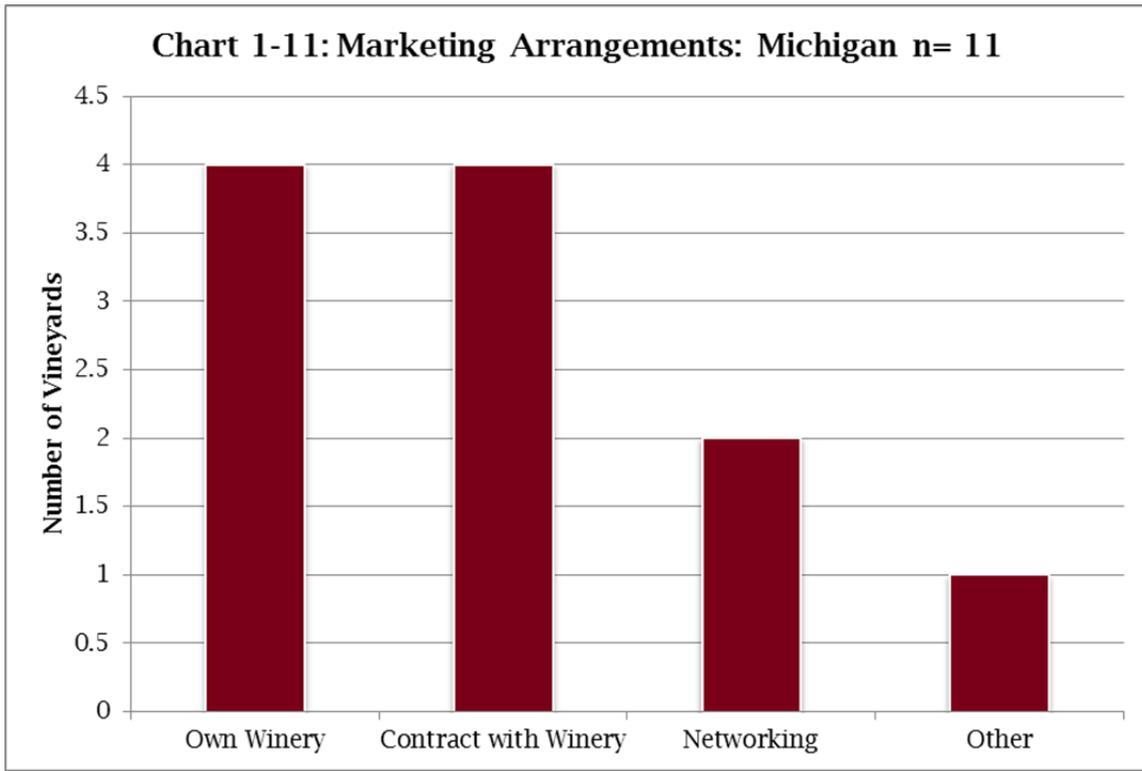


As shown in Chart 1-10, the majority of labor for the responding wine grape vineyards was provided by paid labor (52 percent). Forty percent of labor was supplied by the owner operator and 8 percent by volunteer laborers. These statistics further highlight the maturity of Michigan's vineyard industry. In Northern Grapes Project states, on average, just over one-quarter of labor is from paid labor and nearly two-thirds from the owner operator.

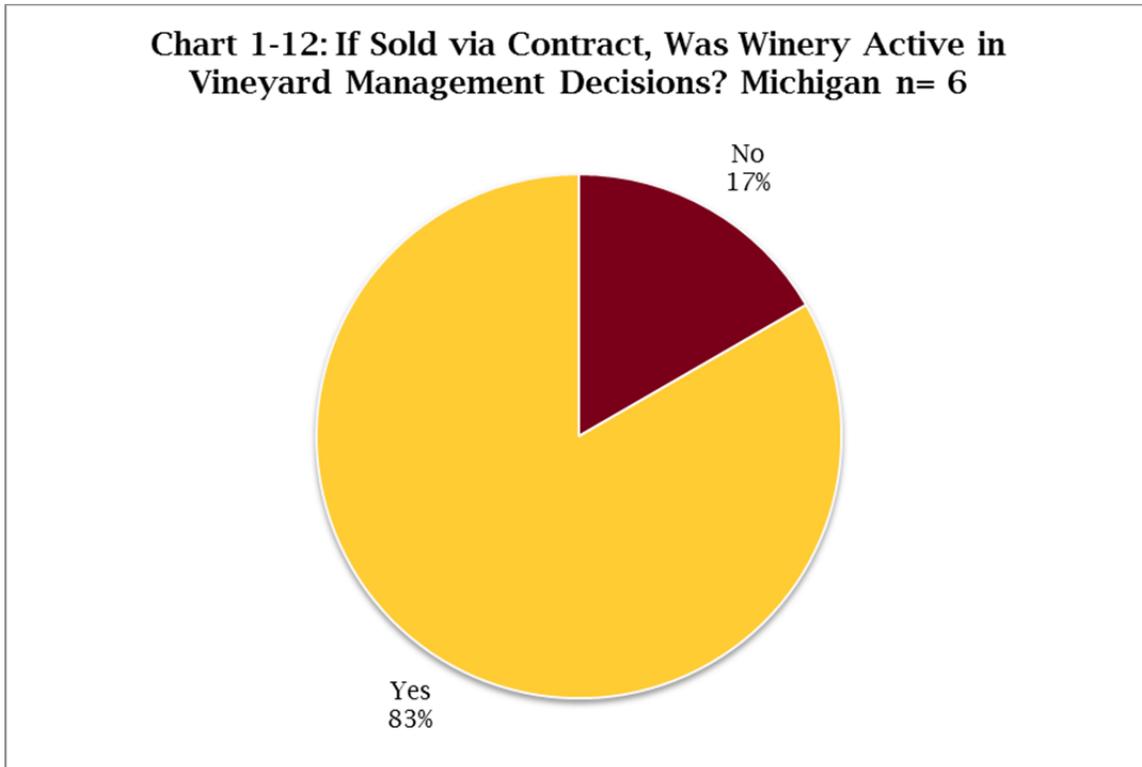


Marketing and Grape Utilization

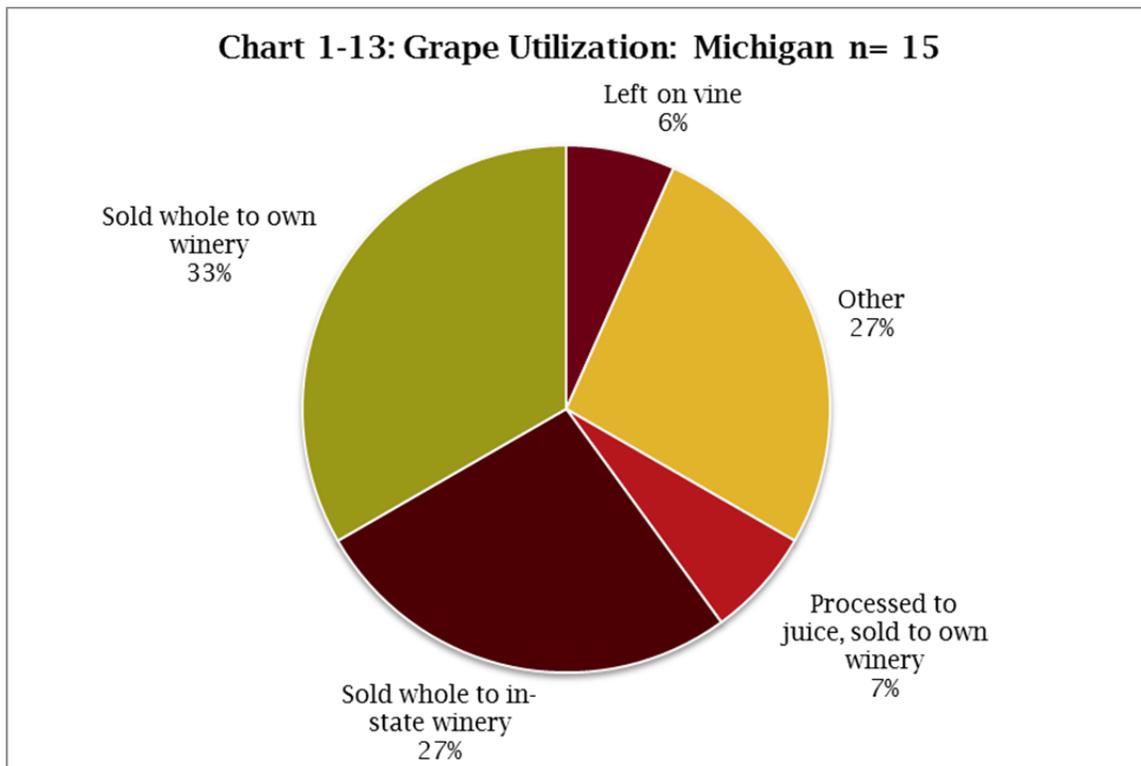
Wine grape growers in the survey favor contracts as the best method for marketing their grapes (chart 1-11). Growers were asked which market arrangements they used to sell their grapes. They could select more than one choice. The most commonly used methods, each selected by 4 growers, was to sell via a contract with a winery or through their own winery. No growers indicated using a broker to sell their grapes.



Growers that contract with wineries to market their grapes are interacting with the winery to make management decisions. Over eighty percent of growers indicated that the winery to which they sold grapes was active in management decisions in the vineyard, as shown in chart 1-12.



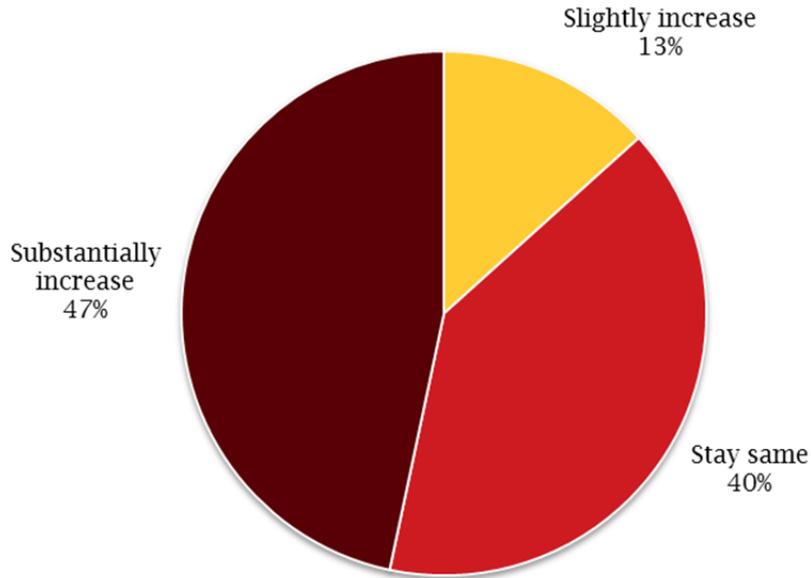
The most common arrangement for responding wine grape vineyards is to sell their grapes in a whole berry format (see chart 1-13). Thirty-three percent sold their berries whole to their own winery. Another 27 percent sold their grapes whole to an in-state winery. This reinforces the knowledge that grape growing and wineries are often local operations, working and contributing to the communities in which they are located. Twenty-seven percent of wineries reported their grapes went to “other” purposes. When asked to specify, responses included no production and donations.



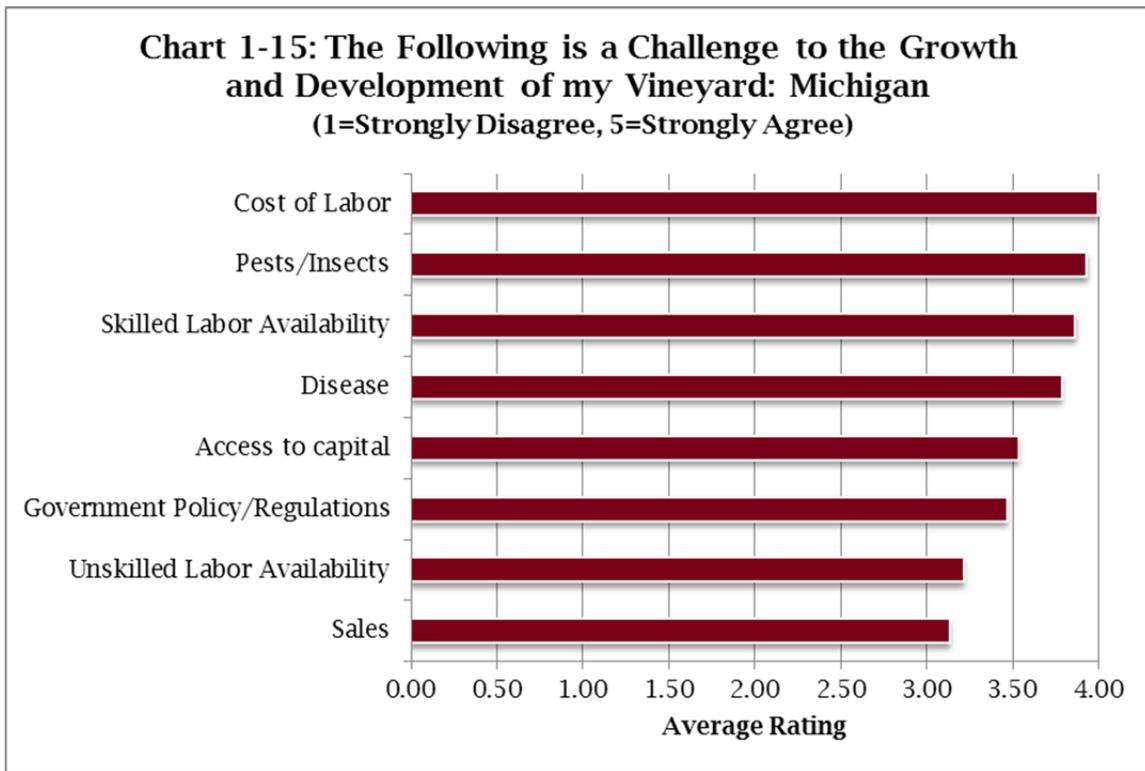
Future Plans

Current wine grape growers appear to be optimistic about the future of their operations. Over half (60 percent) of the responding growers plan to increase their acreage in the next two years. Another forty percent plan to maintain their current size over the next two years. No vineyards reported plans to decrease in size, chart 1-14.

Chart 1-14: Over the Next Two Years, My Vineyard Will... Michigan n= 15



Wine grape growers responding to the survey indicate that the biggest challenges to their vineyard operations are the cost of labor and pests/insects, as depicted in chart 1-15. When asked to answer the question “the following is a challenge to the growth and development of my vineyard”, using a scale where 1 equals “strongly disagree” and 5 equals “strongly agree”, grape growers gave cost of labor an average score of 4.0 and pests/insects an average score of 3.93. Availability of labor and sales do not seem to be significant issues for the responding growers in Michigan.



Grape Varieties

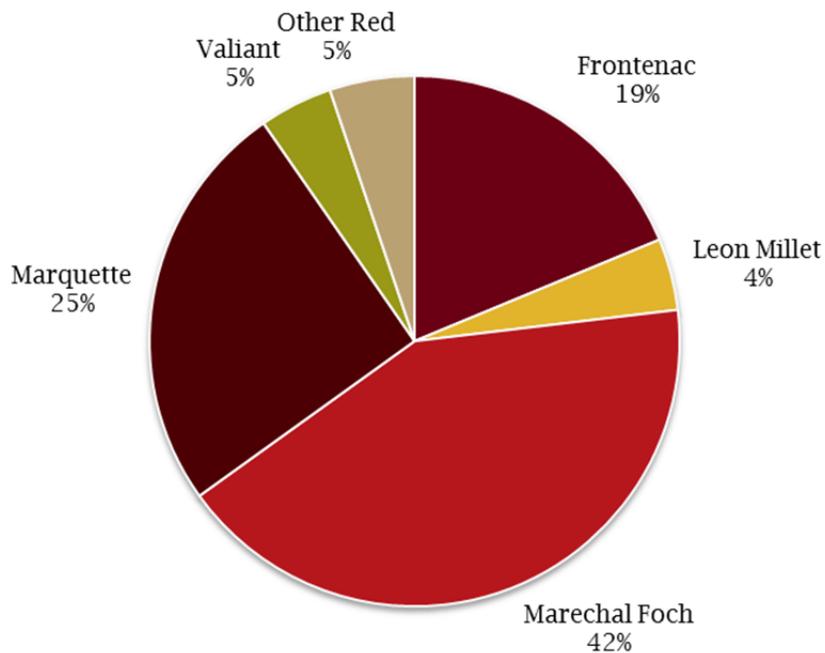
Survey participants reported 107,000 planted vines in their vineyards. Of these, the majority (86 percent) are planted in traditional (non-cold hardy) varieties. Recent research by the Michigan Agricultural Statistics Service (MASS) indicates 4 percent of wine grape varieties are cold-hardy by the definition of this report. The difference between this research and the MASS figures may be due to oversampling of cold-hardy growers in our population. The survey itself was promoted by the Northern Grapes Project and may have drawn more growers of cold-hardy grapes. To learn more about the MASS report containing published acres of cold-hardy varieties in Michigan, readers can visit this website:

http://www.nass.usda.gov/Statistics_by_State/Michigan/Publications/Michigan_Rotational_Surveys/mi_fruit12/grapes.pdf .

Of the 15,100 cold-hardy wine grape vines reported by responding vineyards, the majority (9,600) are red cultivars. The remaining vines, 5,500, are white cultivars. Chart 1-16 depicts total reported planted vines of red varieties. Marechal Foch grapes comprise 42 percent of the total planted red varieties. Marquette and Frontenac comprise 25 percent and 19 percent respectively. It appears Michigan growers have planted the more popular of the cold-hardy varieties. Their plantings, on balance, are less diverse than other project states.

Table 1-2 reports the number of reported planted cold-hardy red cultivar vines by age. These figures represent only what the vineyards who answered the survey reported. Responding vineyards reported 2,430 red cultivar vines are older than 10 years of age, 4,370 are between 4 years and 10 years of age, and 2,786 are younger than 4 years old. It appears the cold-hardy vines were more rapidly adopted in the period of 4 to 10 years ago. Growth in the number of plantings has declined since then.

Chart 1-16: Total Planted Cold-Hardy Vines, Red Varietals: Michigan



The table reflects changes occurring in the types of cold-hardy red cultivars being planted. Frontenac vines and Marechal Foch were the most commonly planted vines in the period of more than 4, but less than 10 years prior to the survey. Both have declined in plantings since. The Marquette grape, released in 2006, has grown in popularity.

Table 1-2: Planted Vines of Cold-Hardy Red Varieties by Responding Vineyards, by Age, Michigan

Variety	Vines, Younger than 4	Vines, Between 4 and 10 Years	Vines, Older than 10	Total
Baltica	12	0	0	12
Beta	2	0	0	2
Frontenac	315	1,240	250	1,805
GR-7	0	0	0	0
King of the North	10	110	20	140
Leon Millot	300	50	70	420
Marechal Foch	0	2,050	1,990	4,040

Marquette	1,832	600	0	2,432
Other red Swenson	0	0	0	0
Petite Pearl	50	0	0	50
Sabrevois	5	100	0	105
St. Croix	50	0	100	150
Valiant	210	220	0	430
Total	2,786	4,370	2,430	9,586
The totals in this table are for responding vineyards only and do not represent the total industry in Michigan.				

Table 1-3 lists the estimated number of planted acres of cold-hardy red cultivars in Michigan. These numbers have been extrapolated to represent all wine grape vineyards in Michigan. In Michigan, there are an estimated 230 acres of grapes planted in cold-hardy red varieties. The Marechal Foch grape is planted on 98 of those acres.

Table 1-3: <u>Estimated</u> Planted Acres of Red Varieties for <u>All</u> Vineyards in Michigan	
Variety	Total
Baltica	0.3
Beta	0.0
Frontenac	43.9
GR-7	0.0
King of the North	3.4
Leon Millot	10.2
Marechal Foch	98.2
Marquette	59.1
Other red Swenson	0.0
Petite Pearl	1.2
Sabrevois	2.6
St. Croix	3.6
Valiant	10.5
Total	233.0
The totals in this table have been extrapolated to represent all vineyards in Michigan.	

Chart 1-17 illustrates the total planted vines of white varieties. Edelweiss (19 percent), La Crescent (17 percent) and Frontenac Gris (17 percent) are the most commonly planted white cold-hardy vines by the reporting vineyards. Within the white cold-hardy cultivars, there is no clear favorite cultivar.

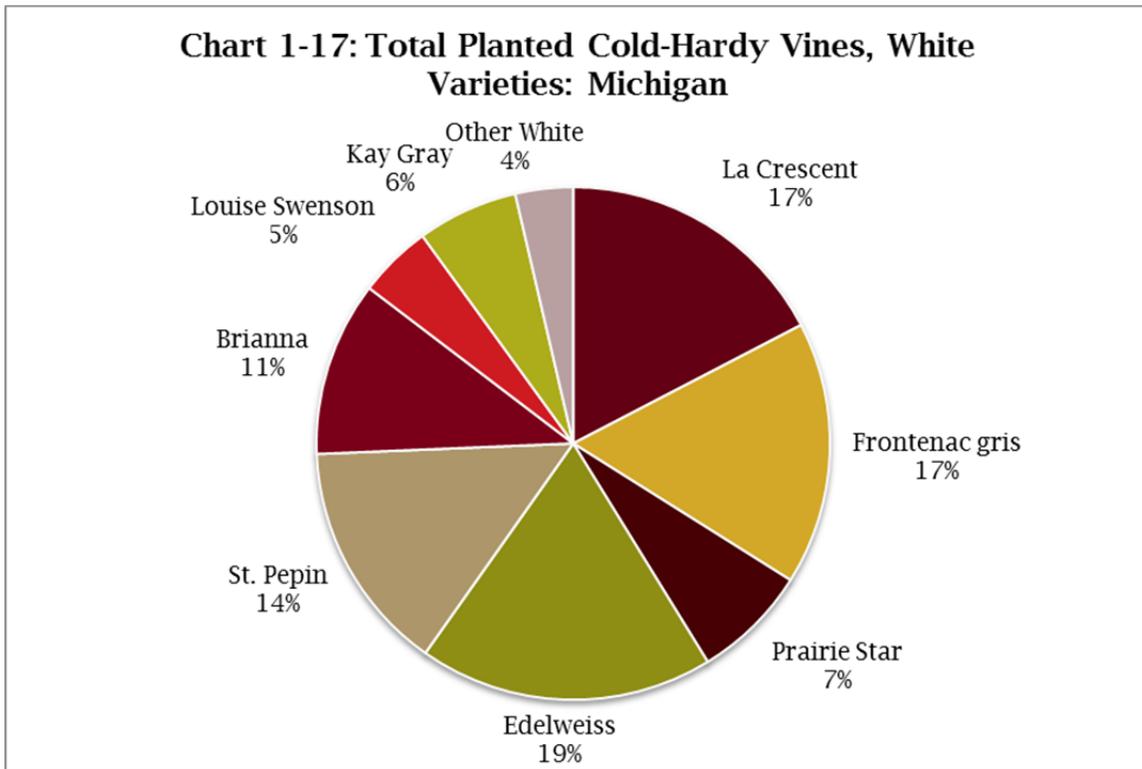


Table 1-4 reports the total reported planted vines of cold-hardy white cultivars. These figures represent only what the vineyards who answered the survey reported. Responding vineyards report 1,150 vines older than 10 years in the ground, 1,806 vines of age between 4 and 10 years, and nearly 2,540 vines younger than 4 years. Whereas plantings of cold-hardy red cultivars have declined in recent years plantings of cold-hardy white cultivars continues to grow in Michigan.

Variety	Vines, Younger than 4	Vines, Between 4 and 10 Years	Vines, Older than 10	Total
Brianna	405	200	0	605
Edelweiss	15	756	250	1,021
Espirit	0	0	0	0
Frontenac Blanc	0	0	0	0
Frontenac Gris	810	100	0	910
Kay Gray	200	0	150	350
La Crescent	405	450	100	955
La Crosse	0	0	0	0
Louise Swenson	205	50	0	255
Other White Swenson	200	0	0	200
Petite Amie	0	0	0	0
Prairie Star	100	50	250	400
St. Pepin	200	200	400	800
Total	2,540	1,806	1,150	5,496

The totals in this table are for responding vineyards only and do not represent the total industry in Michigan.

Table 1-5 lists the estimated number of planted acres of cold-hardy white cultivars in Michigan. These numbers have been extrapolated to represent all vineyards in Michigan. In Michigan, there are an estimated 134 acres of grapes planted in white varieties. The Edelweiss grape is planted on 25 acres and the La Crescent grape is planted on 23 acres.

Variety	Total
Brianna	14.7
Edelweiss	24.8
Espirit	0
Frontenac Blanc	0

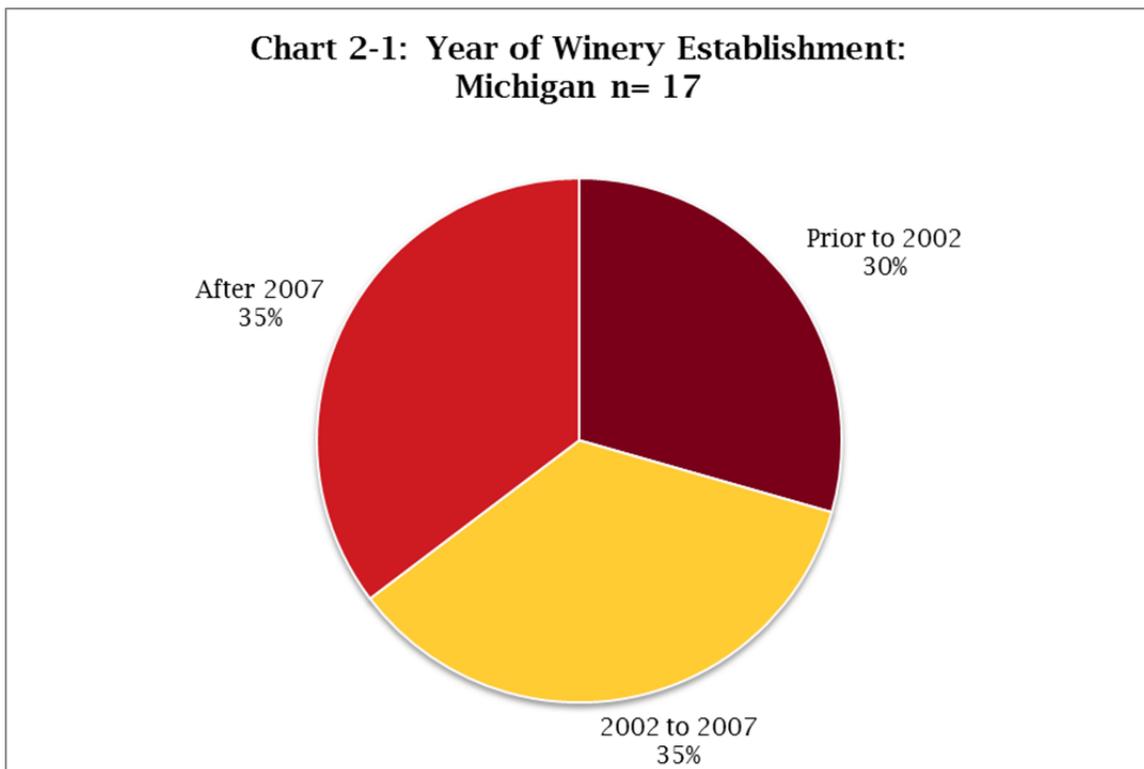
Frontenac Gris	22.1
Kay Gray	8.5
La Crescent	23.2
La Crosse	0
Louise Swenson	6.2
Other White Swenson	4.9
Petite Amie	0
Prairie Star	9.7
St. Pepin	19.4
Total	133.6
The totals in this table have been extrapolated to represent all vineyards in Michigan.	

WINERY CHARACTERISTICS

Twenty Michigan wineries responded to the Northern Grapes Project survey. According to Michigan State University, there are 83 wineries licensed and operating with the Michigan Grape and Wine Industry designation of “producer of Michigan wine”. To have that designation, a winery must produce at least 50 percent of its wine from Michigan fruit. Based on these statistics, the response rate for this survey was 24 percent.

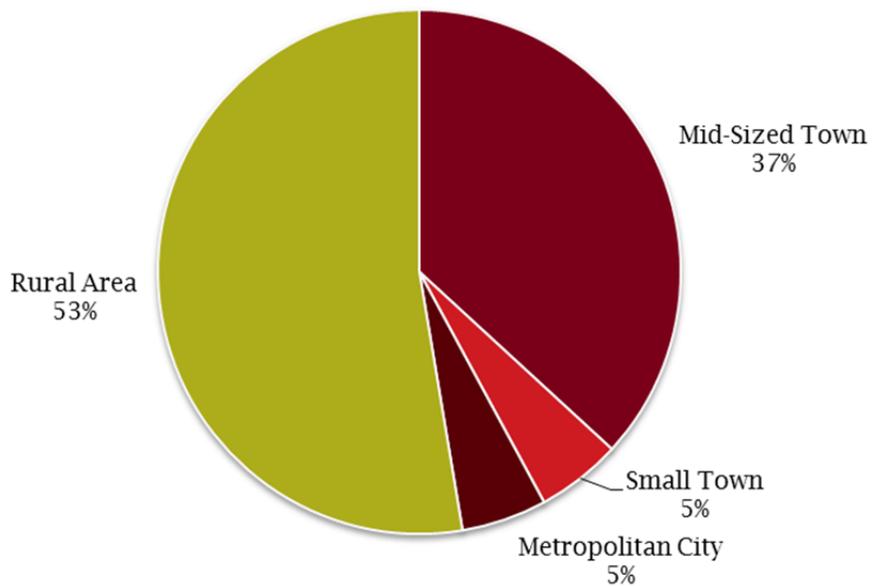
In this report, when survey results are extrapolated, they represent all wineries designated as producers of Michigan wines. They do not represent all wineries in Michigan.

As shown in chart 2-1, growth in the number of wineries in Michigan continues. Nearly one-third of all wineries have been established since 2007. Michigan also has a higher percentage of more established wineries as opposed to the rest of the Northern Grapes Project states.

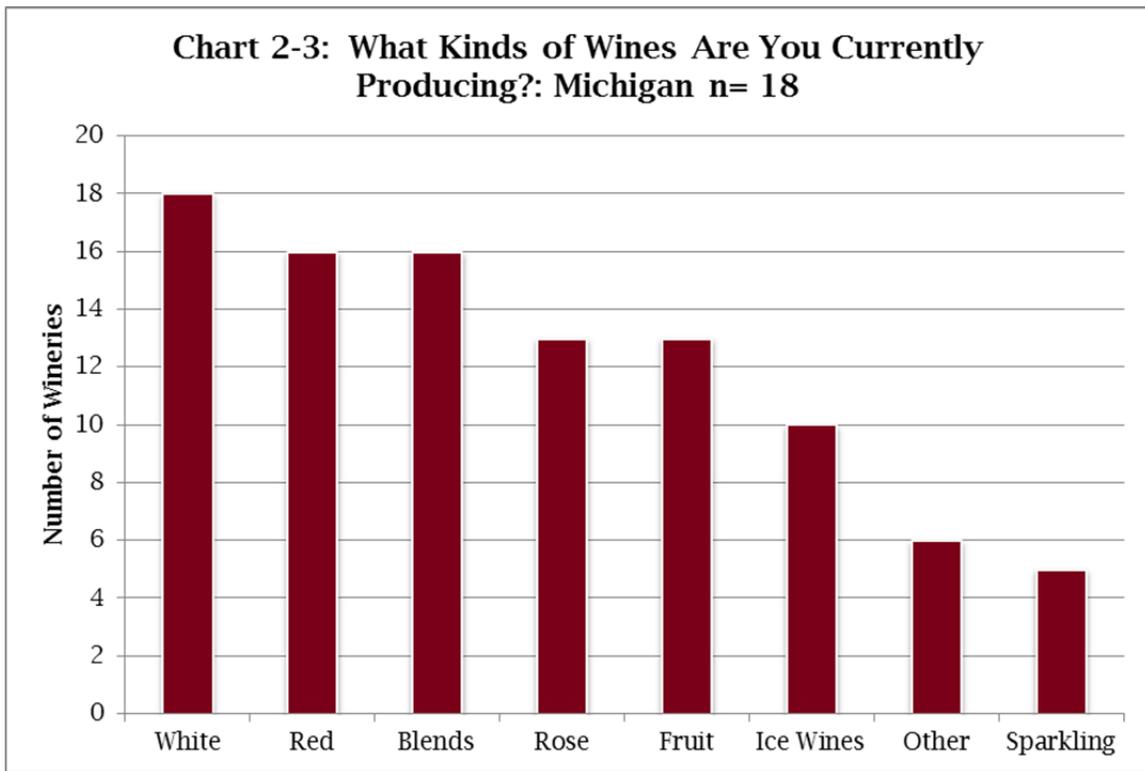


The majority of Michigan’s wineries designated as “producers of Michigan wines” (53 percent) are located in rural areas, outside of cities and urban centers, see chart 2-2. Over one-third (37 percent) are located in mid-sized towns (population of 2,500 to 19,999). Only 5 percent of these wineries are located in metropolitan areas.

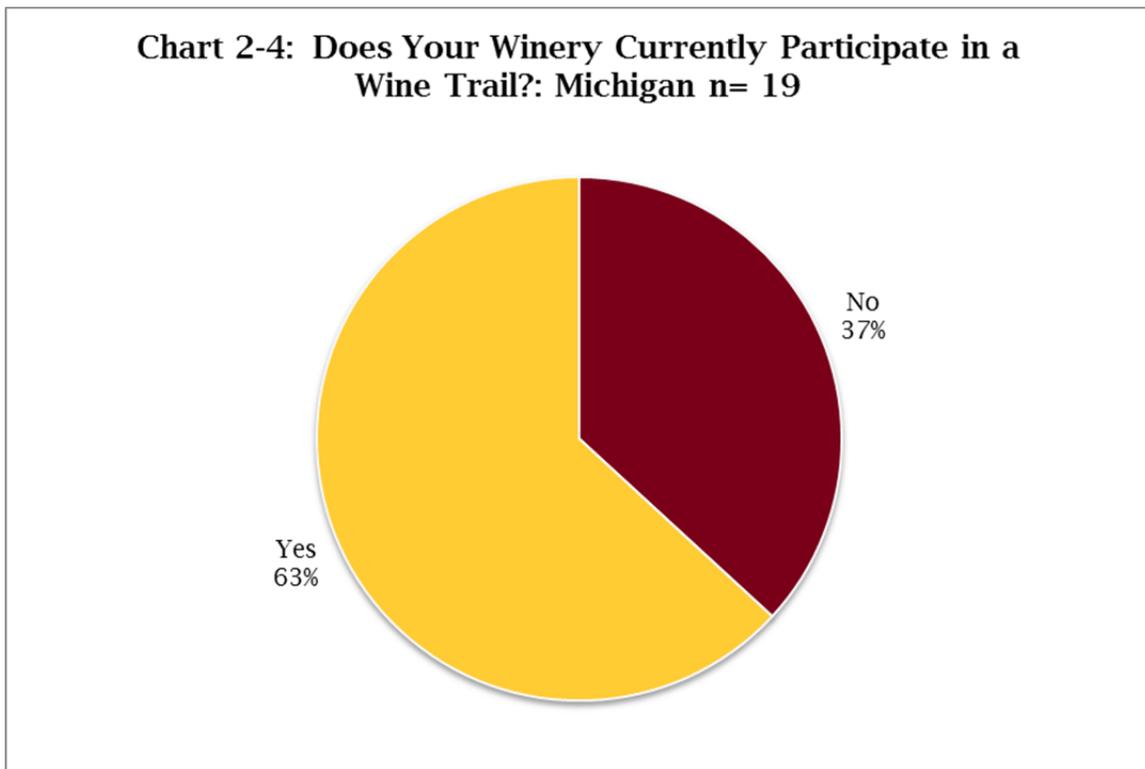
**Chart 2-2: Which Setting Best Describes Your Winery
Location: Michigan n= 19**



Nearly all Michigan wineries are producing white and red varietal wines along with blends, see chart 2-3. Wineries are also commonly producing rose, and fruit wines. Interestingly, 10 of the responding wineries are producing ice wines. This does seem high and may reflect the types of wineries who responded to the survey. Study results show designated wineries in Michigan produced 1.5 million gallons of wine in 2011 or an average of 18,500 gallons per winery. Published data from the Michigan Liquor Control Commission indicate wineries in Michigan produced 1.4 million gallons of wine in 2012. These figures are statistically the same. On a per winery basis, Michigan wineries produce more than the average winery in the Northern Grapes Project states.

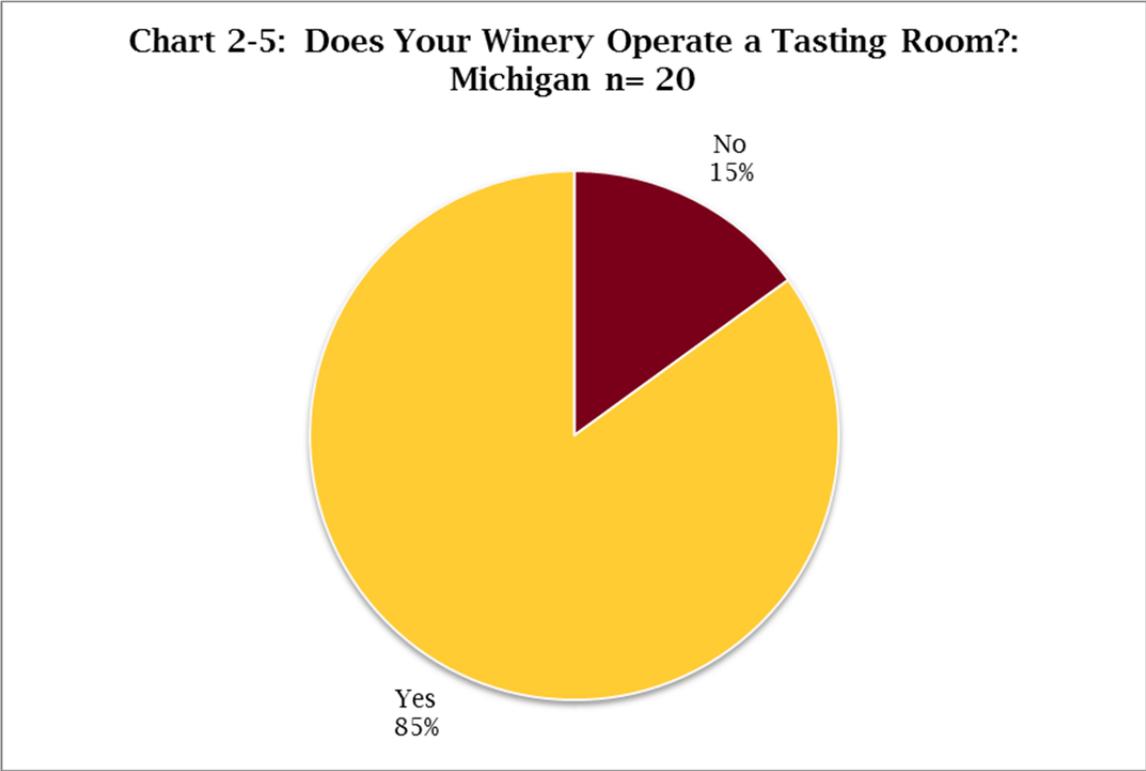


The majority (63 percent) of Michigan wineries participate in a wine trail. See chart 2-4. This is well above the percentage of wineries participating in wine trails for other Northern Grapes Project states. Michigan may be a good model for other states to study as they look at establishing wine trails. Wine trails are one method wineries use to attract visitors to their winery to drive sales.



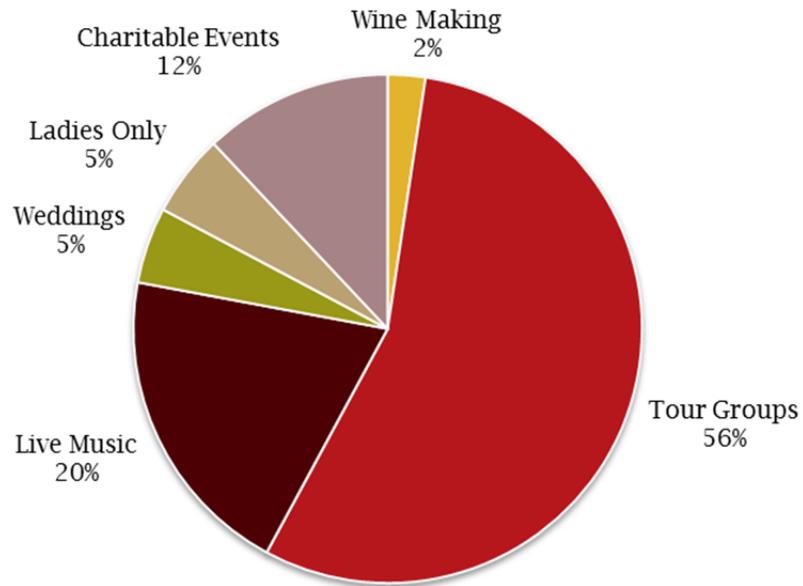
Eighty-five percent of wineries designated as “producers of Michigan wine” operate a tasting room, see chart 2-5. Half of wineries (50 percent) charge for tastings. Thirty percent of the wineries offer food with their wine service. At the time of the survey, legislation allowing wineries to charge for tastings was relatively new in Michigan. Therefore, it is reasonable to assume this number will have increased.

On average, each winery served 14,300 tasting room customers. Wineries estimate that 60 percent of their tasting room visitors are repeat customers. Wineries in Michigan report a much higher percentage of their visitors being repeat customers as compared to wineries in other Northern Grapes Project states (60 percent in Michigan versus 40 percent).



Wineries also reported on events held at their winery in 2011. Specifically, wineries were asked to report how many people attended the following types of events: grape stomps, wine-making classes, tour groups, live music, weddings, ladies-only events, charitable events, and other events. In total, the responding wineries (20) reported 40,000 guests at their winery events. The breakdown of which events these guests attended is shown in chart 2-6. Tour groups and live music drew the most people to the responding wineries in 2011.

**Chart 2-6: Percent of Winery Visitors Per Event:
Michigan n= 20**

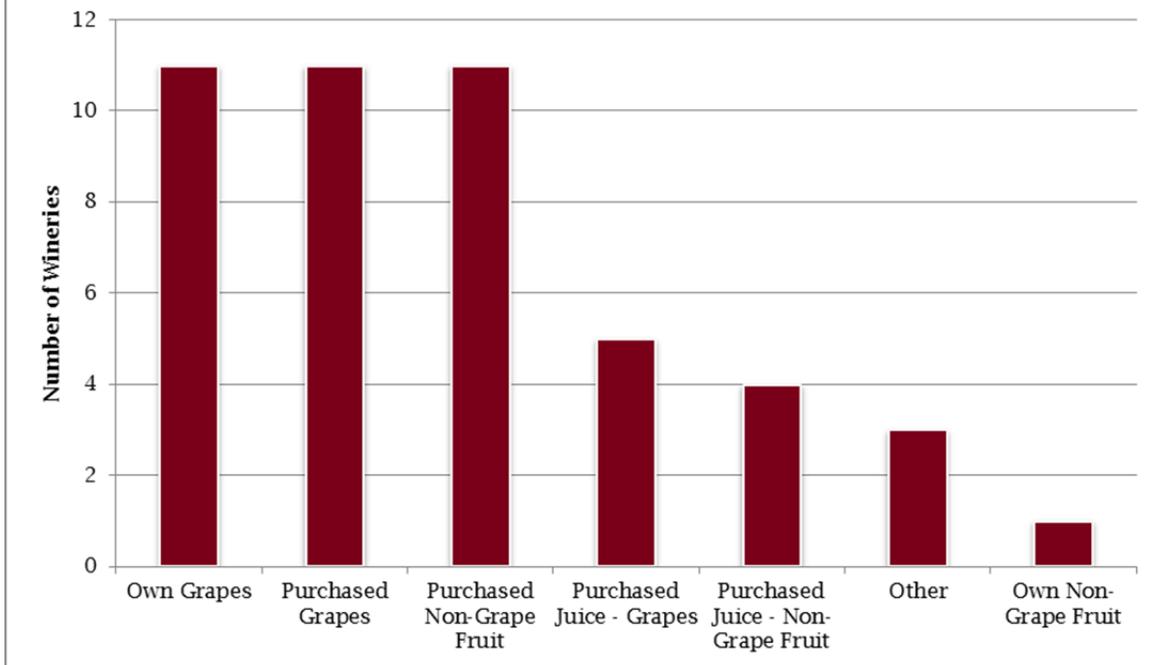


Grape Acquisition

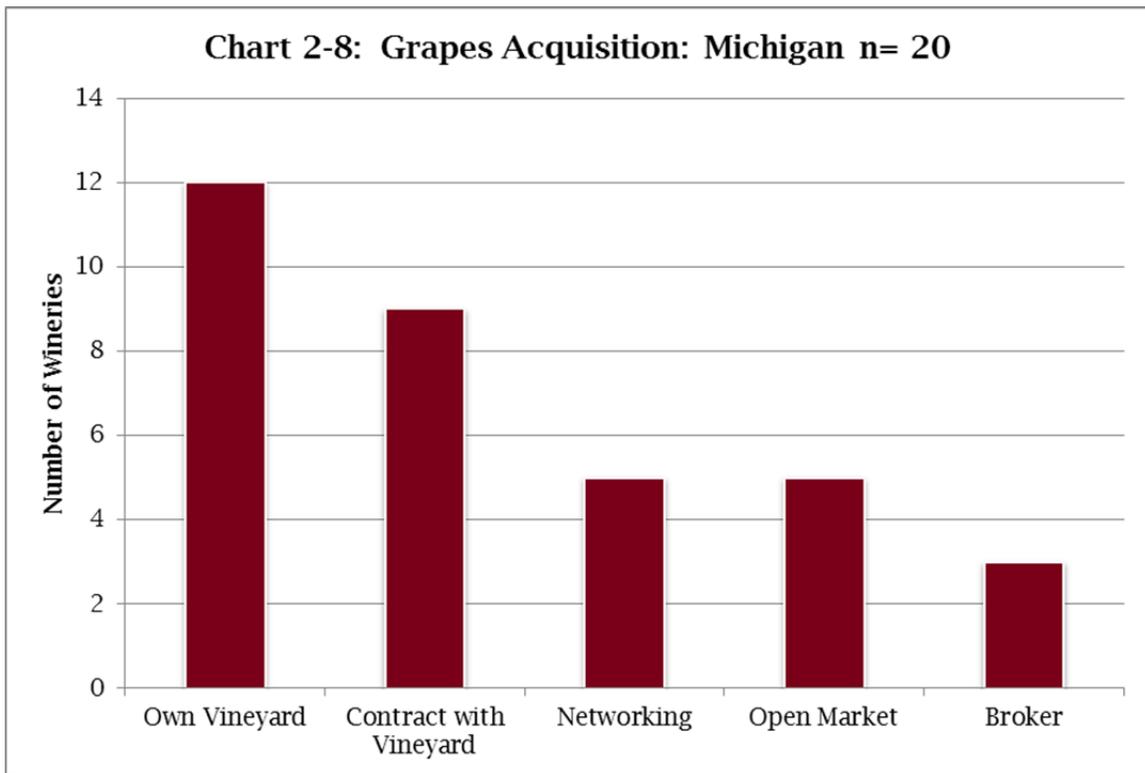
Wineries in Michigan purchased \$7.8 million of grapes in 2011, from their own vineyards and from other vineyards. On average, each winery spent \$92,500 to buy grapes. Eight percent of the grapes used by these wineries were cold-hardy varieties.

Wineries participating in the survey report the most common methods for acquiring grapes and fruits are by purchasing grapes from their own vineyard and purchasing whole grapes from another source. Use of non-grape fruits is rather limited among the surveyed wineries, as shown in chart 2-7.

**Chart 2-7: Grapes and Wines Used in Wine Production:
Michigan n= 20**



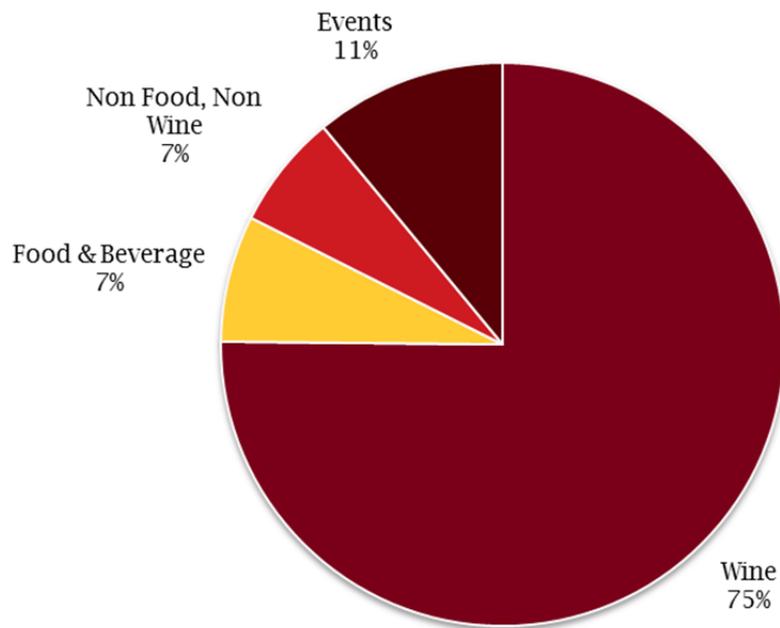
As depicted in chart 2-8, wineries primarily acquire their grapes from their own vineyards. Those who purchase grapes use a combination of contracts with vineyards, the open market, and networking. Purchasing grapes via a broker is not widely used as an acquisition tool by these wineries.



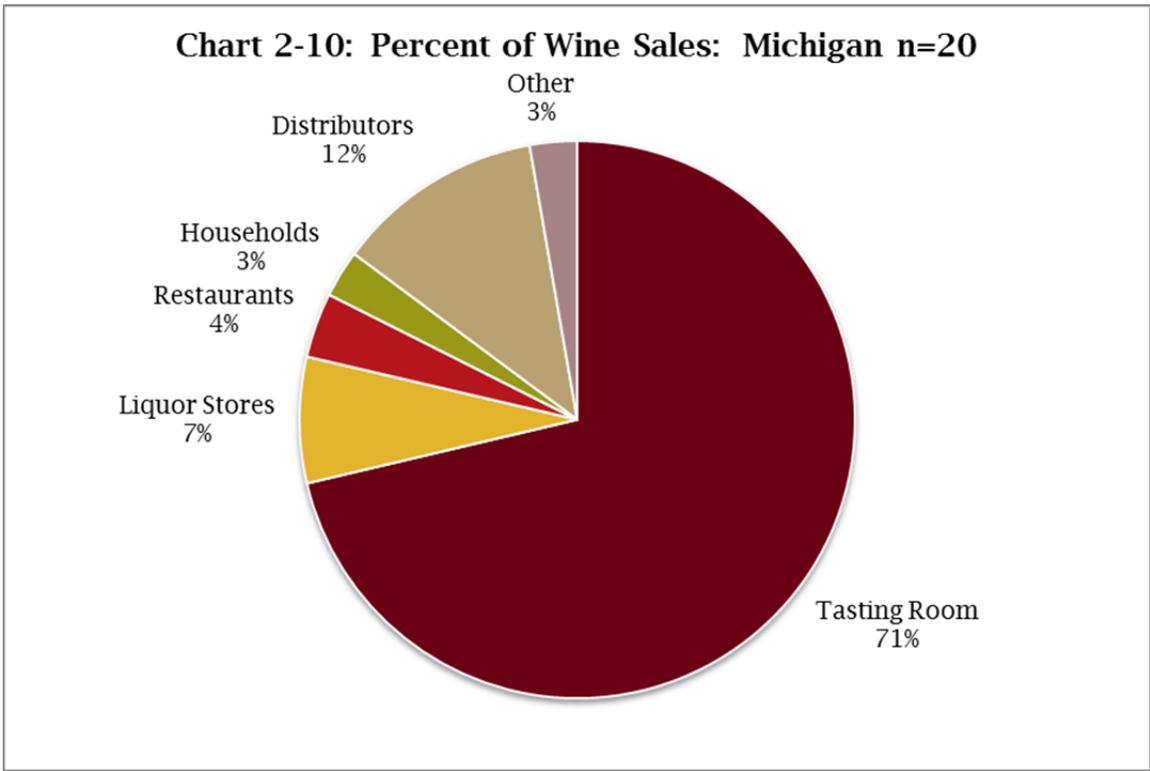
Winery Sales and Production

In total, wineries in Michigan had sales of \$41.2 million in 2011, an average of \$497,000 per winery. Of total sales, \$3.3 million were generated from wines crafted from cold-hardy grapes. Wine sales, including bottles sold and tasting room fees, are the primary source of revenue for wineries, accounting for 75 percent of all sales (see chart 2-9). Wineries produced, on average, 18,500 gallons of wine.

Chart 2-9: Winery Sales by Category: Michigan n= 20

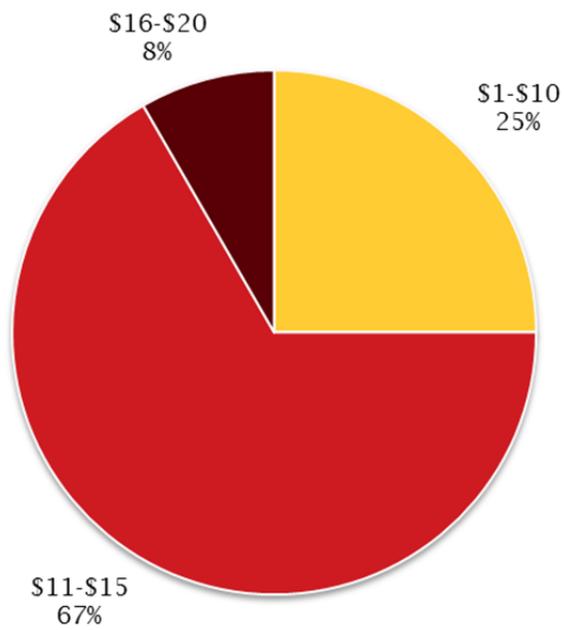


Wineries designated as “producers of Michigan wine” sold an estimated 11.3 million bottles of wine in 2011 or an average of 136,500 bottles per winery. Eighty-five percent of wineries operate a tasting room and 70 percent of an average winery’s sales are through the tasting room, as shown in chart 2-10. Approximately twenty percent of sales are via distributors and liquor stores. Sales to restaurants, and direct-to-households, account for only a minor portion of sales.

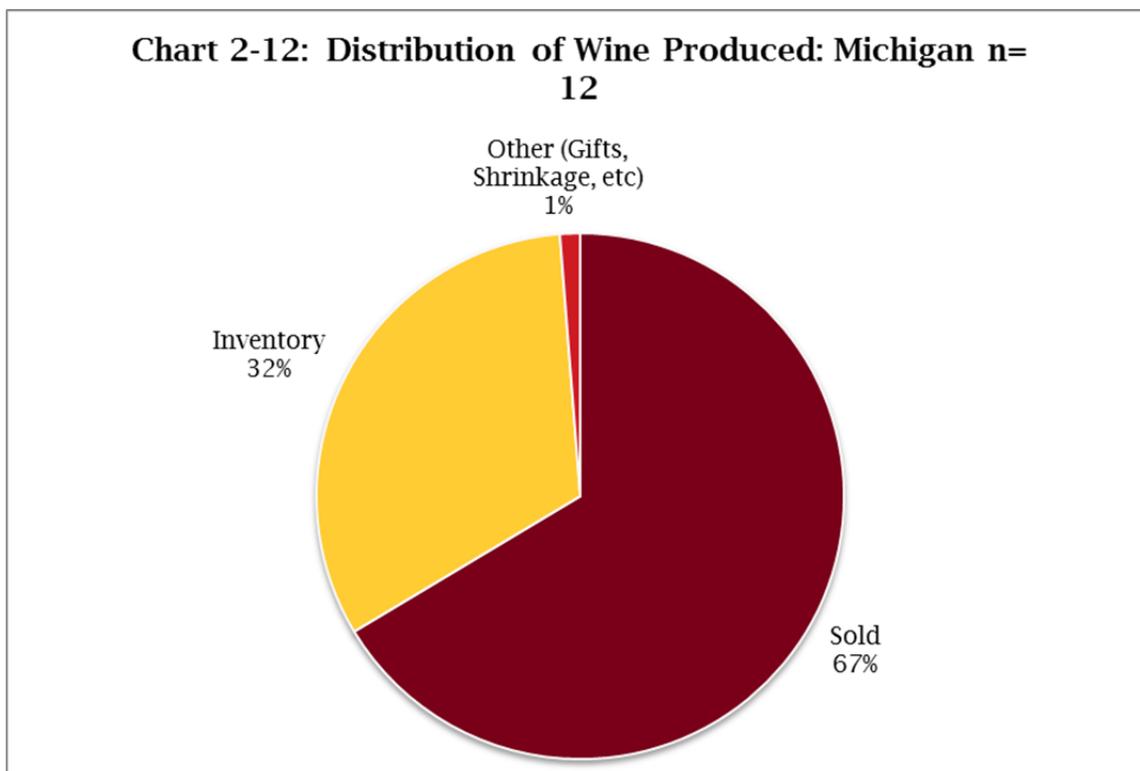


Wineries designated as “producers of Michigan wine” reported the average price per bottle of wine sold was \$13 in 2011. Chart 2-11 shows the distribution of average wine sale prices. Two-thirds of the wineries, 67 percent, sold their wine for a price of \$11-\$15 per bottle.

Chart 2-11: Average Price Per Bottle of Wine: Michigan
n= 12



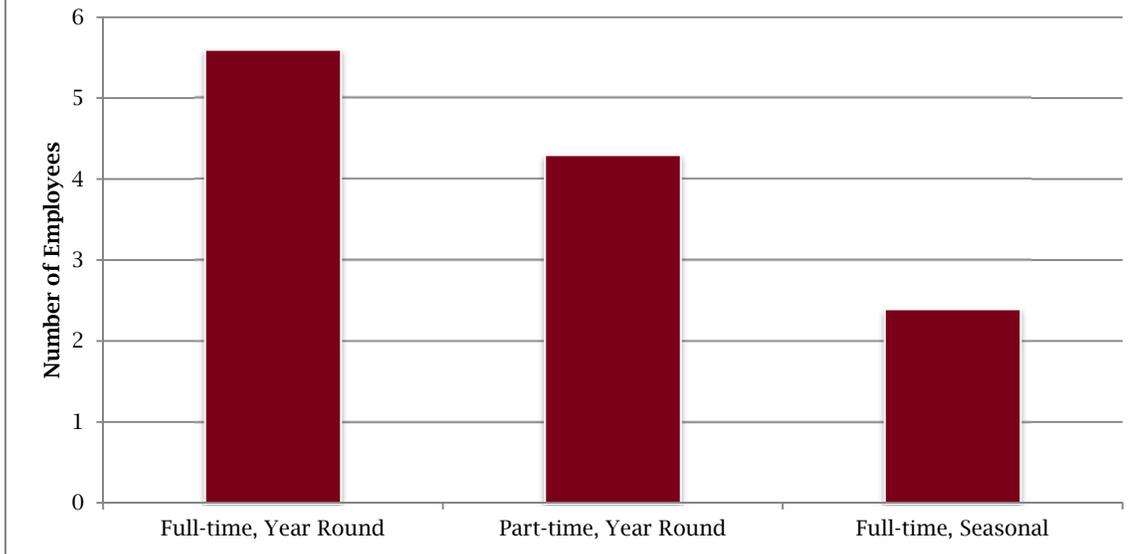
As mentioned, the average responding winery produced 18,500 gallons of wine. The majority of the wine (67 percent) produced was sold, see chart 2-12. Wineries put one-third of the gallons of wine produced into inventory. A small percent (1 percent) of wine produced was utilized in other ways (e.g. gifts, donations, shrinkage, etc.).



Wineries designated as “producers of Michigan wine” employ 1,025 individuals. On average, each winery employs 12 individuals. On average, each winery employs 6 full-time year-round people, 4 part-time, year round people, and 2 part-time, seasonal people, see chart 2-13.

In 2011, wineries paid \$9.2 million in labor income or an average of \$111,000 per winery. Volunteer labor is an important component of winery operations in the Northern Grapes Project states. In 2011, wineries designated in Michigan used 300 hours of volunteer labor per winery which is less than half that used in other states.

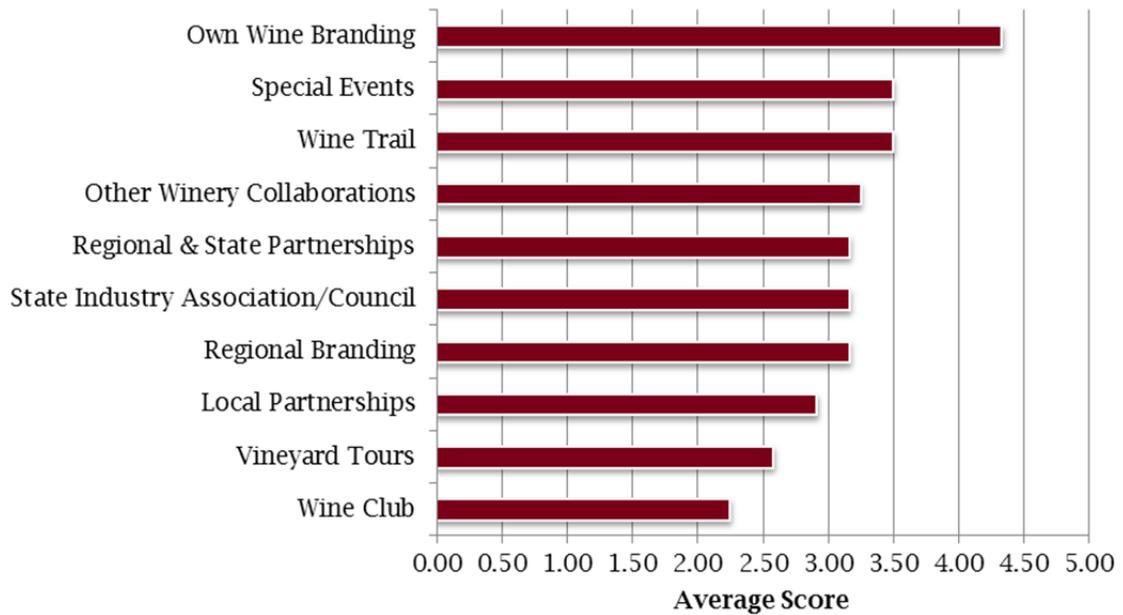
**Chart 2-13: Average Employment Per Winery 2011:
Michigan n=12**



Winery Marketing and Collaboration

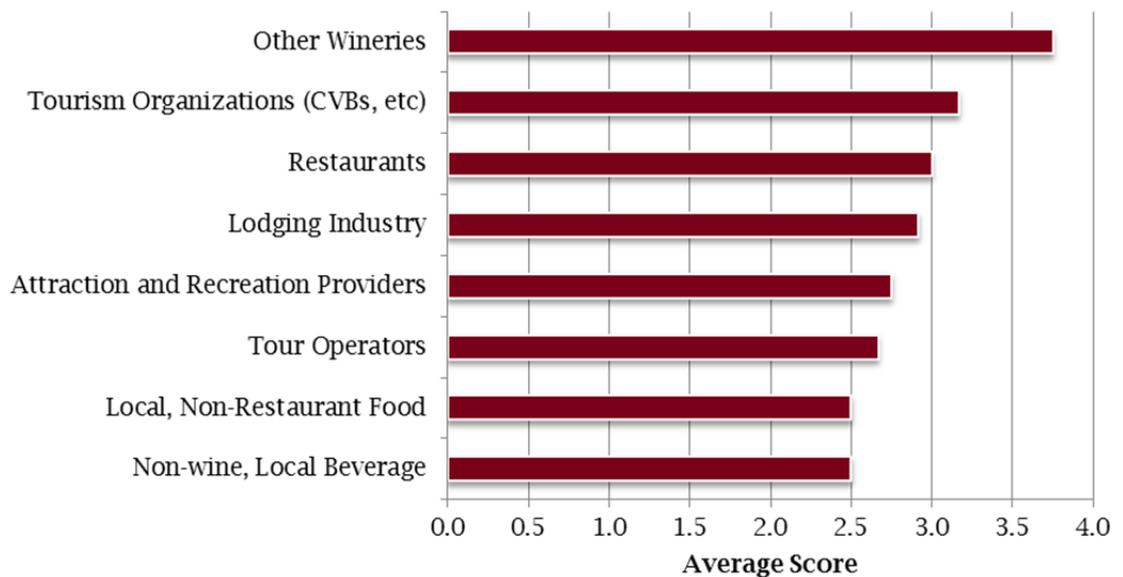
Wineries were asked to rate a list of marketing strategies on a scale where 1 indicated the strategy was “unimportant” for their marketing and 5 indicated it was “very important”. As shown in Chart 2-14, winery owners (producing Michigan wines) believe that branding their own wine is the most important marketing strategy they can employ, assigning it an average score of 4. Special events and wine trails were also assigned relatively high scores. Winery owners assigned the lowest average scores to wine clubs, vineyard tours, and local partnerships. Sixty-five percent of wineries offer vineyard tours.

**Chart 2-14: Importance in Overall Marketing Strategy:
(1=Unimportant, 5=Very Important) Michigan n= 12**

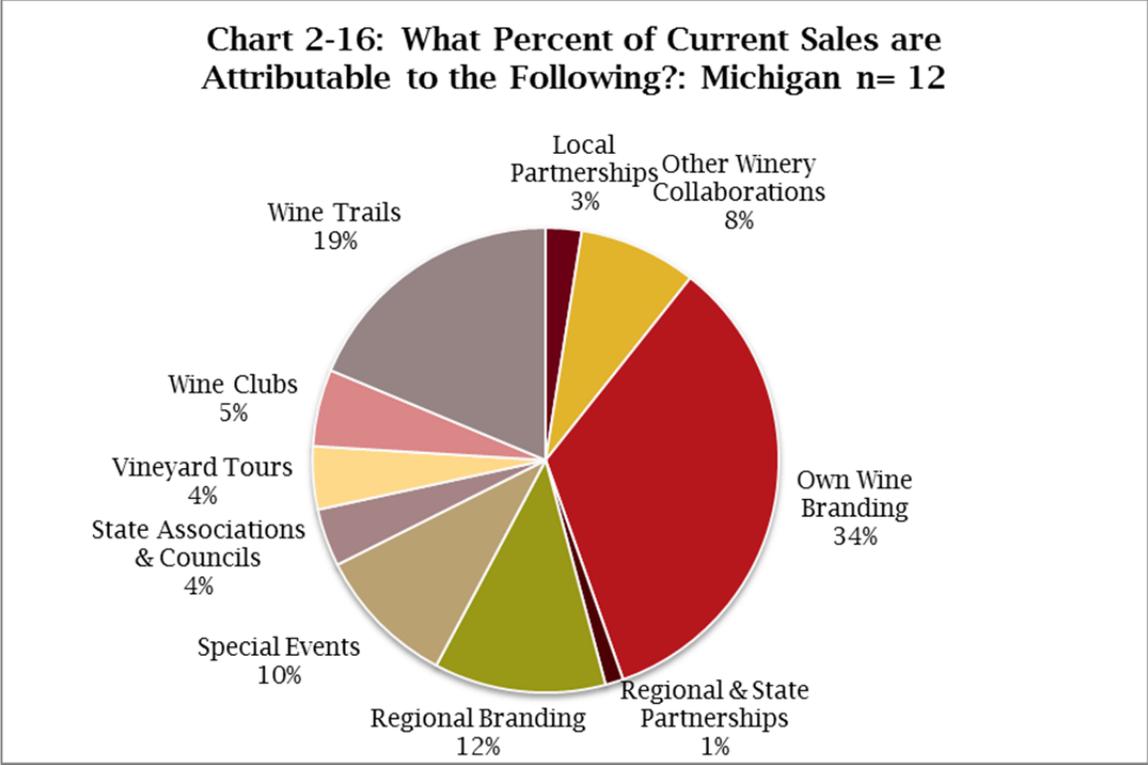


Wineries were also asked about their current collaboration efforts. They were asked, on a scale where 1 equals “none” and 5 equals “a great deal”, “to what extent do you currently collaborate with the following entities?” The highest level of collaboration is among wineries and with tourism organizations, as shown in chart 2-15.

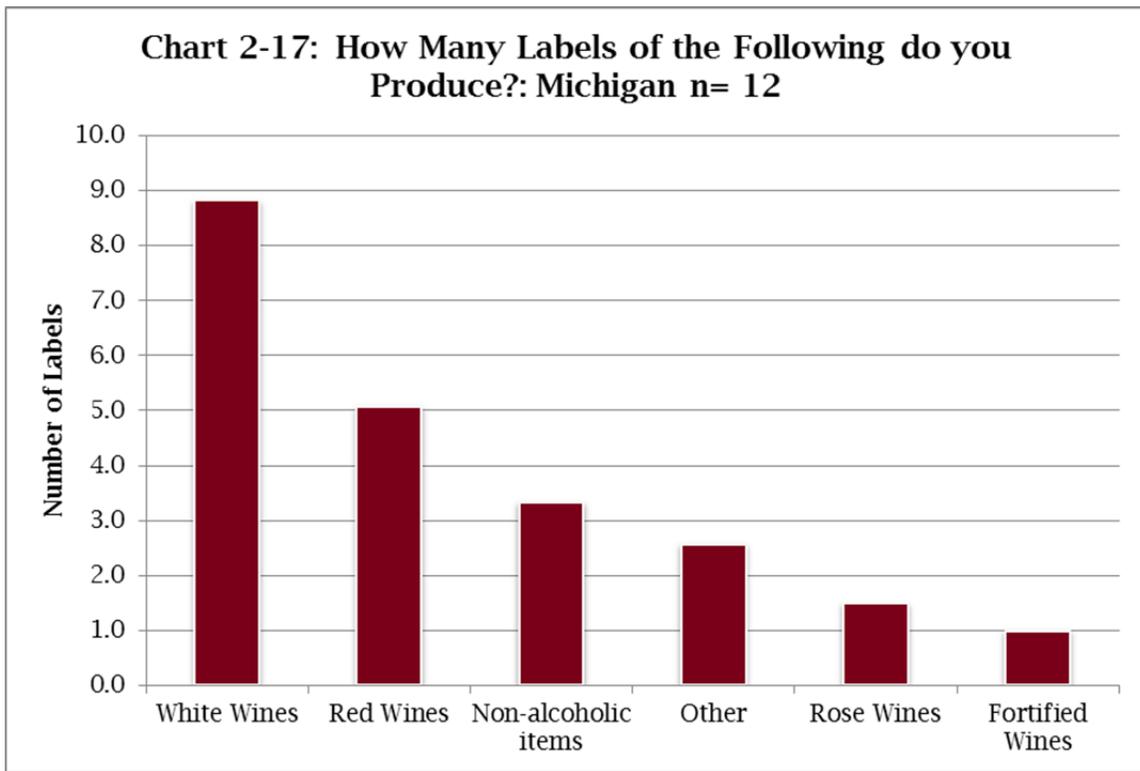
**Chart 2-15: Extent of Collaboration
(1=None, 5=A Great Deal)
Michigan n= 12**



Wineries were then asked how various marketing arrangements influenced their sales. Wineries indicated that their own wine branding efforts drove over one-third (34 percent) of their sales. Wine trails drive an estimated 19 percent of sales and regional branding 12 percent of sales. Michigan, with its older wine industry, was more likely to credit regional branding efforts than states with a younger industry. Chart 2-16 illustrates this point.

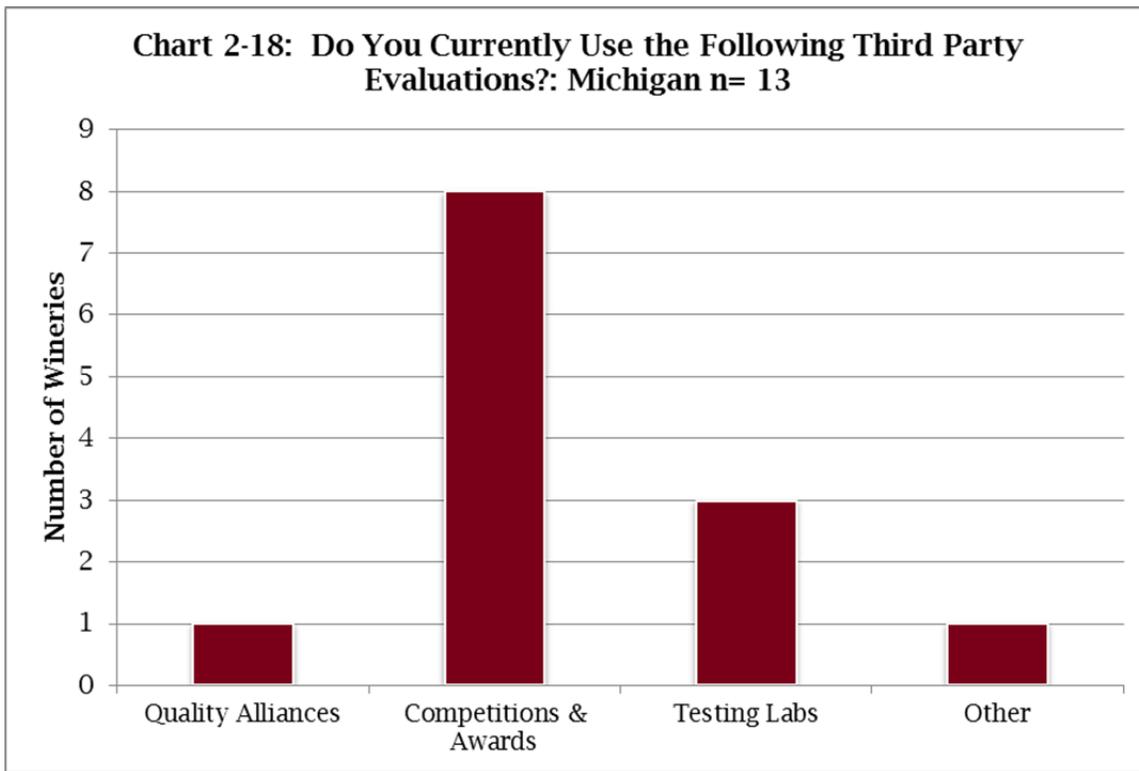


As mentioned earlier, the most commonly produced wines are red and white varietal wines. On average, each winery is bottling 8 white labels and 5 red labels, as shown in chart 2-17. Wineries also report an average of 2.5 “other” labels. The survey instrument did not ask wineries to indicate what other types of labels are being produced.



Competitions and awards are the most commonly used type of third party evaluations, as reported by the responding wineries. Wineries are also using testing labs for third party evaluations. See chart 2-18.

Chart 2-18: Do You Currently Use the Following Third Party Evaluations?: Michigan n= 13



Future Plans

Winery owners were asked directly about future plans for their establishment. The results, shown in chart 2-19, indicate the potential for continued growth in the industry, as 75 percent of wineries plan to expand in the next five years. A few wineries are considering selling or transferring the winery to a family member.

Chart 2-19: Which Best Describes Your Plans for the Next Five Years?: Michigan n= 12

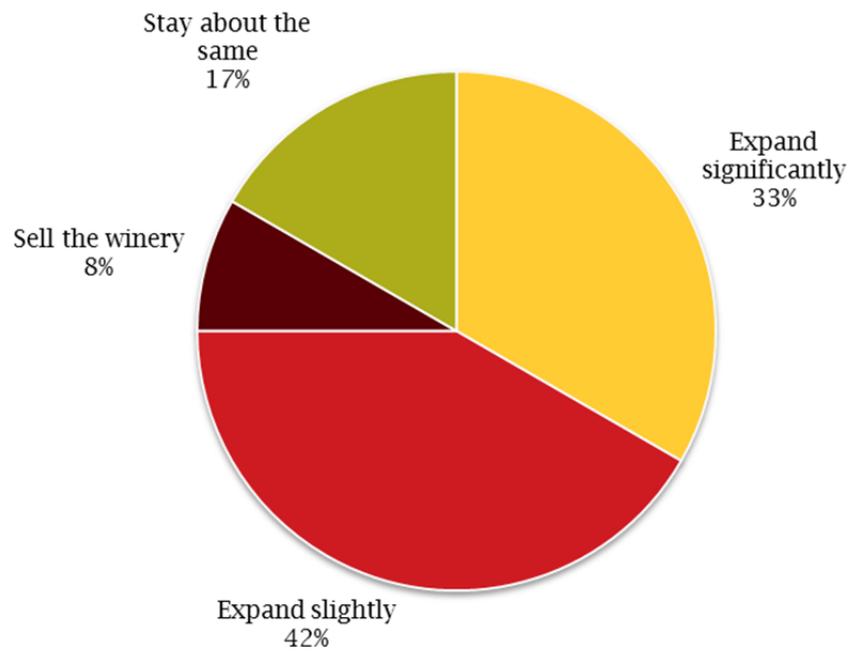
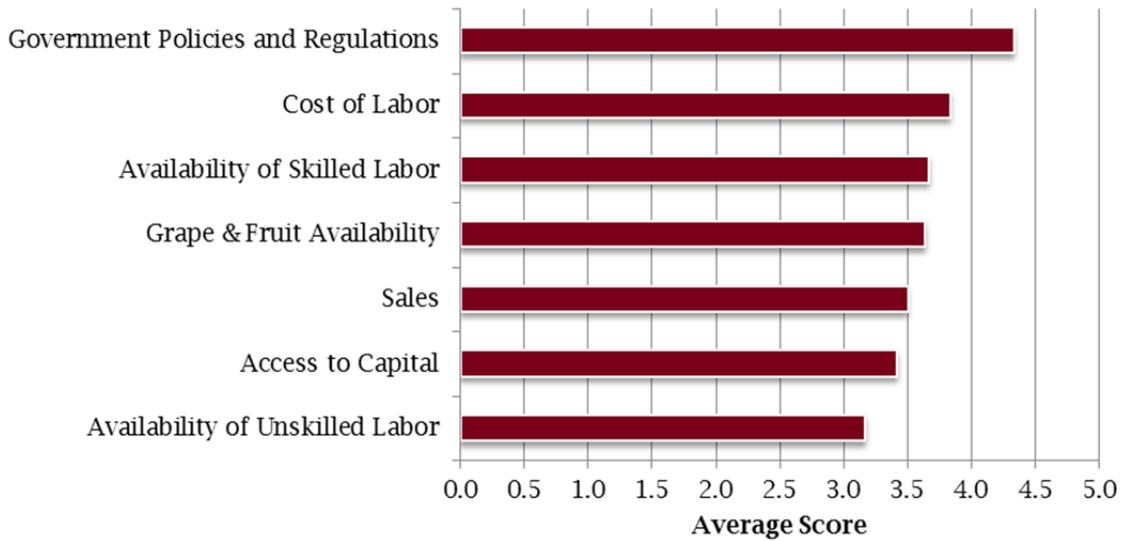


Chart 2-20 depicts winery owners' responses to a question about the challenges to the growth and development of their winery. On a scale where 1 equals "strongly disagree" and 5 equals "strongly agree", wineries were asked to rate a list of issues in relation to each as a challenge to the growth and development of their winery. Wineries rated government policies and regulations, cost of labor, and availability of skilled labor as the biggest threats to their wineries. Availability of unskilled labor and access to capital received the lowest average ratings.

**Chart 2-20: The Following is a Challenge to the Growth and Development of my Winery
(1=Strongly Disagree, 5=Strongly Agree):
Michigan n= 12**



ECONOMIC CONTRIBUTION OF VINEYARDS AND WINERIES IN MICHIGAN

The economic contribution of an industry is comprised of direct and secondary effects. Direct effects are economic activities generated by the industry itself. For example, spending by grape growers to purchase trellising supplies is a direct effect. Spending by wineries to purchase bottles is also a direct effect. Secondary effects are economic activities triggered by the initial spending. When a grape grower purchases trellising supplies, the manufacturer of the supplies must produce more, creating additional economic activity. When a winery buys bottles, the glass manufacturer must produce more, thus increasing output (sales).

Direct Effects

In measuring the economic contribution of the grape growing and winery industries in Michigan, the first step is to measure the direct effects of the industries. In other words, producers were asked to report how much they spent in 2011. Researchers used data gathered in the Northern Grapes Project baseline study for this purpose. The data collected in the study were used to derive averages per winery and per vineyard. These averages were extrapolated to the total population of wineries (83 designated as “producers of Michigan wine”) and vineyards (250 in Michigan) in each state to determine the total direct effect for the state.

Wineries and vineyards contribute to Michigan’s economy through three primary methods. One, vineyards make purchases for inputs and for labor. Two, wineries make purchases for inputs and for labor. Three, wineries attract visitors, typically through tasting rooms. These tourists make off site winery purchases (e.g. gas) during their visit which stimulate economic activity in the state. The direct contributions of each of these components are shown in table 3-1. These are the direct effects of the wine grape and winery industries in Michigan.

Michigan wine grape vineyards, as detailed earlier in this report, spent \$6.3 million within the state to operate. This included \$2.7 million of payments to their 556 employees, or an average of \$4,900 per employee. For purposes of this analysis, one job is considered one job, regardless of the status of the job as full-time, part-time, or seasonal. Vineyards rely heavily on part-time, seasonal employment, particularly at harvest time. The average responding vineyard reports 5 of their 7 employees are part-time, seasonal. The wages may appear low on average but adjusting for the number of hours worked, the average wage is \$17.60 an hour.

Wineries designated as producers of Michigan wine spent \$33.6 million in 2011 within the state for their operations. Of this, \$9.2 million went to their 1,025 employees, or \$9,000 per employee. Wineries also rely on part-time and seasonal workers which affects average wages per employee. Of the 12 employees per winery, 6 are full-time, year round.

Tourists at wineries designated as producers of Michigan wines spent \$35.1 million during their visit. These expenditures supported 600 jobs in Michigan which paid in total \$12.1 million in labor income. Direct expenditures by winery tourists were derived from tasting room visitors. In the survey, wineries were asked to estimate the number of tasting room customers they received in 2011. The average per winery was extrapolated to account for all wineries. From there, adjustments were made for the percent of tasting room customers who were tourists. A tourist was defined as a person travelling more than 50 miles to reach the destination or a person who spent the night away from home as part of the visit. Further adjustments were made to account for the role of the winery in the purpose of the trip. Only tourists reporting the winery played a role in their decision to make the trip were included as winery tourists. Finally, an average daily spending profile was applied to

the number of winery tourists to arrive at total spending. See appendix three for more information on the sources and methodology.

Table 3-1: Direct Effects of Vineyards, Wineries*, and Winery Tourists, Michigan, 2011

	Vineyards	Wineries	Winery Tourists
Output	\$6,300,000	\$33,600,000	\$35,100,000
Employment	556	1,025	600
Labor Income	\$2,700,000	\$9,200,000	\$12,100,000

*Wineries included in this study are those with the designation of “producer of Michigan wine”.
Estimates by University of Minnesota

Indirect and Induced Effects

Now that the direct impacts of vineyards, wineries, and wine tourists are quantified, the data can be entered into an input-output model. Input-output models trace the flow of dollars throughout a local economy and can capture the indirect and induced, or ripple effects, of an economic activity. The input-output modeling software and data from RIMS II (Bureau of Economic Analysis) was used in this report.

Indirect effects are those associated with a change in economic activity due to spending for goods and services. In this case, these are the changes in the local economy occurring because vineyards and wineries need to purchase inputs (trellises, bottles, etc.) and related services (viticulture support, label design, etc.). These are business-to-business impacts.

Induced effects are those associated with a change in economic activity due to spending by the employees of businesses (labor) and by households. Primarily, in this study, these are economic changes related to spending by vineyard and winery workers hired to perform the vineyard and winery tasks. These are business-to-consumer impacts.

Total Economic Effects

The total economic contribution of an industry is calculated by adding the direct, indirect, and induced effects. In 2011, the total economic contribution of the wine grape growing and producer of Michigan winery industries in Michigan was \$151.9 million. This includes 4,310 jobs and \$57.6 million in labor income, as shown in table 3-2.

Table 3-2: Total Effects of Wine Grape Vineyards, Wineries*, and Winery Tourists, Michigan, 2011

	Vineyards	Wineries	Winery Tourists	Total
Output	\$11,600,000	\$69,500,000	\$70,800,000	\$151,900,000
Employment	880	2,500	930	4,310
Labor Income	\$5,500,000	\$30,500,000	\$21,600,000	\$57,600,000

*Wineries included in this study are those with the designation of “producer of Michigan wine”.
Estimates by University of Minnesota

Cold-Hardy Related Economic Effects

An estimated 4 percent of the grapes grown in Michigan are of cold-hardy varieties (see appendix 1 for a definition of cold-hardy) and an estimated 8 percent of the grapes used in the production of Michigan wines are from the cold-hardy varieties. In 2011, cold-hardy grapes contributed \$11.6 million to the economy of Michigan including \$4.3 million in labor income. They contributed 300 jobs, as shown in table 3-3.

Table 3-3: Total Effects of Wine Grape Vineyards, Wineries*, and Winery Tourists Derived from Cold-Hardy Grapes, Michigan, 2011				
	Vineyards	Wineries	Winery Tourists	Total
Output	\$440,000	\$5,600,000	\$5,600,000	\$11,640,000
Employment	30	200	75	305
Labor Income	\$210,000	\$2,400,000	\$1,700,000	\$4,310,000
*Wineries included in this study are those with the designation of “producer of Michigan wine”. Estimates by University of Minnesota				

SUMMARY AND CONCLUSIONS

In spring 2012, grape growers and winery owners in 13 states were surveyed as part of the Northern Grapes Project. Questions asked pertained to sales and production (wineries and vineyards), growing practices (vineyards), and operating practices (wineries). The goal was to establish an industry baseline and quantify the economic contribution of the industry. This report presents the results for Michigan. The focus of this study is on wine grape growers and on wineries in Michigan designated as “producers of Michigan wines” by the Michigan Grape and Wine Industry Council.

The baseline study results reflect Michigan’s heritage as a wine producing state. Climate and soils in Michigan have allowed vineyards to efficiently grow traditional (i.e. *vitis vinifera*) wine grapes. Thus, cold-hardy grapes, which have been rapidly adopted in colder weather states, have not been as quickly adopted in Michigan. While some Northern Grapes project states report as much as 98 percent of planted grapes as being of cold-hardy varieties, Michigan reports 4 percent of planted wine grape acreage in cold-hardy cultivars and 8 percent of wine being produced as sourced from cold-hardy grapes.

Michigan wine grape vineyards and “producer of Michigan wine” wineries tend to be more established and mature than in other participating states. Nearly half of Michigan’s wine grape vineyards are more than 10 years old. One-third of the designated wineries were established prior to 2002. Growth does continue in the industry; new vineyards and wineries are being established and existing businesses continue to expand.

Michigan wine grape vineyards are larger and more focused than their counterparts in other states. Planted acreage of the vineyards is larger. Vineyards rely more on paid labor and less on volunteer labor than similar vineyards in other states. Labor (cost and availability) constitutes two of Michigan’s wine grape growers’ biggest concerns. Finally, Michigan grape producers appear to be less willing to plant new cold-hardy varieties. The number of different cold-hardy varieties being planted is lower in Michigan and the adoption rates for popular cold-hardy cultivars (such as the Marquette grape) are lower. Climate is the most likely explanation for this trend. Since growers in Michigan can grow traditional *vitis vinifera* vines, they have less incentive to plant cold-hardy (i.e. primarily *vitis riparia*) grapes. Future research may wish to explore the differences in the types of vines being grown by region of the state. In areas where the climate is less conducive to growing traditional grape varieties, one would expect to see a higher rate of adoption of cold-hardy grapes and this may indeed be where the potential exists for the cold-hardy industry in Michigan.

In 2011, wine grape vineyards in Michigan contributed \$11.6 million to the state economy, including 880 jobs paying \$5.5 million in labor income. Cold-hardy grape cultivars accounted for \$440,000 in Michigan’s economy with 30 jobs and \$210,000 in payments to labor.

Wineries designated as “producers of Michigan wine” also show signs of maturity as compared to wineries in the other project states. A majority of wineries operate a tasting room and participate in a wine trail. The wineries have also diversified, with a lower percent of total winery sales based on wine itself than wineries in other states and a higher percentage of wine sales through a distributor or liquor store. Wineries further view multiple sources as being important to their wine sales, including their own branding initiatives, but also wine trails and regional branding efforts.

Designated wineries in Michigan are more integrated into the tourism industry. Wineries reported over half of their event visitors come via tour groups. Wineries in Michigan also report a higher level of collaboration with tourism organizations (such as Convention and Visitor’s Bureaus).

Wineries share the wine grape vineyard growers' concerns about the cost and availability of labor. They rate government policies and regulations as their biggest challenge.

In 2011, wineries with the designation of "producer of Michigan wine" contributed \$69.5 million in activity to the state's economy. The wineries created 2,500 jobs which provided \$30.5 million in wages, salaries, and benefits. Cold-hardy grape cultivars added \$5.6 million of that value, 200 jobs and \$2.4 million in labor income.

Wineries designated as "producers of Michigan wine" rely on visitors to their tasting rooms to drive sales. As a result of winery tourism, there was an additional \$70.8 million of spending in Michigan's economy in 2011. This led to the creation of 930 jobs and \$21.6 million in wages, salaries, and benefits. Cold-hardy grapes contributed \$5.6 million to winery tourism in 2011.

In total, the wine grape growing and wineries producing Michigan wine contributed \$151.9 million to Michigan's economy in 2011. The industry created 4,310 jobs which paid a total of \$57.6 million in wages, salaries, and benefits.

APPENDIX ONE: PARTICIPATING INDUSTRY ASSOCIATIONS

The following industry associations/councils provided membership lists for the baseline and economic impact survey of the Northern Grapes Project.

- Connecticut Vineyard and Winery Association
- Illinois Grape Growers and Vinters Association
- Iowa Wine Growers Association
- Lake Champlain Wines
- Massachusetts Farm Wineries and Growers Association
- Michigan Grape and Wine Industry Council**
- Minnesota Grape Growers Association
- Nebraska Winery and Grape Growers Association
- New Hampshire Winery Association
- New York Wine and Grape Foundation
- Northern Illinois Wine Growers
- Scenic Rivers Grape and Wine Association
- South Dakota Specialty Producers Association
- South Dakota Winegrowers Association
- Upper Hudson Valley Wine and Grape Association
- Vermont Grape and Wine Council
- Western Iowa Grape Growers Association
- Wisconsin Grape Growers Association

APPENDIX TWO: DEFINITION OF COLD-HARDY GRAPES

Defining a cold-hardy grape is not as straight-forward as one might imagine. What is considered cold-hardy in one region may not be considered cold-hardy in another. For purposes of this study, researchers classified the following cultivars as cold-hardy. This was done in consultation with the Northern Grapes project advisory team which is comprised of growers in each of the states. Many of the cold hardy grapes are classified as vitis riparia although this is not always the case.

Table A-1: Cold-Hardy Red Varieties

Baltica
Beta
Frontenac
GR-7
King of the North
Leon Millot
Marechal Foch
Marquette
Other red Swenson
Petite Pearl
Sabrevois
St. Croix
Valiant

Table A-2: Cold-Hardy White Varieties

Brianna
Edelweiss
Esprit
Frontenac blanc
Frontenac gris
Kay Gray
La Crescent
La Crosse
Louise Swenson
Other white Swenson
Petite Amie
Prairie Star

APPENDIX THREE: WINERY TOURIST AND EXPENDITURE CALCULATIONS

Three critical pieces of information are necessary to calculate the economic impact of winery tourists. First, researchers need an estimate of the number of winery visitors in a certain time period. Second, researchers need to know the motivations of these winery visitors and the number of visitors from outside the region (local area). Third, researchers need an average spending profile for each tourist.

For purposes of this study, the total number of winery visitors in each state was extrapolated from the winery survey. Winery owners were asked to estimate the number of customers their tasting rooms entertained in 2011. Event attendees (e.g. weddings, new release parties, etc.) are assumed to be a subset of the total number of tasting room customers. The average number of customers was then extrapolated to represent all wineries.

Economic impact theory stipulates that impact is driven by dollars from outside the region. Local residents may visit a winery and spend money, but theoretically, they would have spent those dollars in the local economy on another leisure activity if the winery were not located in their community. The number of tasting room customers, therefore, has to be adjusted to represent only those from outside the community who have traveled to the area specifically to visit a winery. These visitors are hereafter referred to as winery tourists. Research on tasting room customers in Michigan (conducted by Michigan State researchers Don Holecek and Dan McCole as part of the Northern Grapes Project) indicates that approximately two-thirds (67 percent) of tasting room visitors are tourists.

Since economic impact theory further instructs that economic impact is only attributable to a business or an event if the business or event is the primary purpose for the tourism activity, the final number of winery tourists was calculated by estimating the number of tourists to the area due to the presence of the winery. If a tourist visits a winery while in town celebrating a wedding, the wedding is the primary purpose of the visit and should be credited with economic impact and not the winery. Tasting room research, conducted by Michigan State researchers, determined the winery itself was a driving factor in 49 percent of visits to a winery.

With the number of winery tourists quantified, researchers need to apply an average spending profile to determine total spending by winery tourists. In Michigan, the spending profiles from a 2011 study by D.K. Shifflet and Associates were applied. Total per person spending was estimated at a conservative \$90 per day.

APPENDIX FOUR: A NOTE ON COMPARING TO PREVIOUS STUDIES OF MICHIGAN'S WINE AND GRAPE INDUSTRIES

Given Michigan's long tradition of growing grapes and producing wine, it is not surprising that other studies have been completed studying the economic impact of the industries. Due to different methodological approaches, results of this study at first glance differ from other studies. However, when direct comparisons are made between the applicable sections of the studies, the results do align.

The primary difference between this study and other studies stems from the focus of the studies. This study is focused on wine grape growers and producers of Michigan wines. The juice grape industry contributes significantly to the economy of Michigan and is not studied here. Wineries who produce wine from grapes grown in other states also contribute to Michigan's economy.

Finally, this study focuses on three primary sources of economic activity: vineyard production, winery production, and winery-related tourism. Other studies may use a more broad definition of the industries.

The differences between methodologies should be considered when interpreting results.