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Vineyards and Wineries in New York

A STATUS AND ECONOMIC CONTRIBUTION REPORT WITH A FOCUS ON NEW YORK 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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December 2013

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NORTHERN GRAPES PROJECT

The emergence of cold hardy wine grape cultivars in the 1990s created new and rapidly expanding industries of small vineyards 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, 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 New York. It also quantifies the economic contribution of the wine grape and winery industries in the state. For purposes of this report, the baseline study results will focus on the cold-hardy grape industry being studied under the Northern Grapes Project. Economic contribution will be calculated for the all wine grape growers in New York and for all wines produced using New York grapes. By design, we are not including economic impact of wines produced from grapes imported into New York.

VINEYARDS AND WINERIES IN NEW YORK: EXECUTIVE SUMMARY

In spring 2012, grape growers and winery owners in 13 states were surveyed under 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 industry baselines and quantify the economic contribution of the wine grape and winery industries. This report presents the results for New York. The baseline study focuses on cold-hardy growers and wineries using cold-hardy grapes while the economic impact study focuses on all wine grape growers and wineries in the state.

- New York has a long tradition of growing grapes. With its varied climates and soils, regions in New York have been producing traditional wine grape varieties which demonstrate limited production in other Northern Grapes Project states and even within certain regions of New York. The release of cold-hardy grape cultivars has allowed for the expansion of the wine grape growing industry in New York into non-traditional areas outside of major production regions.
- Results of the Northern Grapes Project baseline in New York demonstrate the growth in the cold-hardy vineyard industry. Survey results indicate this growth will continue, as 70 percent of vineyards plan to expand.
- The popularity of the Marquette grape, a cold-hardy red cultivar, may drive some of the cold-hardy vineyard growth. Released in 2006, the Marquette grape now comprises more than half of all the red cold-hardy plantings in New York.
- Cold-hardy wine grape vineyard growth may be hampered by diseases and the cost of labor. Cold-hardy grape growing vineyard owners report those two items as the biggest challenges to the potential growth and development of their operation.
- Wineries experimenting with cold-hardy grapes, too, are showing growth. New York wineries that incorporate cold-hardy grapes are more likely to operate a tasting room than their peers in other states. Cold-hardy grape wineries in New York also demonstrate a higher willingness to collaborate. They put a higher emphasis on the importance of regional branding initiatives and on collaborations with local organizations and other wineries. Despite this, New York wineries still believe their own wine branding is their most critical marketing activity.
- In 2011, the wine grape growing and winery industries based on locally-sourced grapes contributed \$831.2 million to the New York State economy, including 6,700 jobs and \$172.2 million in labor income. Wine grape vineyards contributed \$54.1 million, locally-sourced wineries \$572.2 million, and winery tourists \$204.5 million. Wineries included in this report produced 8.3 million gallons of wine. *By design, this represents only a portion of wine produced in New York, as total production was 36.1 million gallons in 2008.* Total production includes wines produced from grapes imported into New York for wine, while this research focuses on wine produced from grapes grown in-state.
- Cold-hardy grapes contributed a fraction of the output and employment in New York's winery and grape growing industries, accounting for \$28.6 million in sales, 190 jobs, and \$5.0 million in labor income.



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, in total, there were 611 total responses to the survey.

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.

Lake Champlain Wines, the New York Wine and Grape Foundation, and the Upper Hudson Valley Wine and Grape Association provided e-mail addresses for their memberships. In total, 202 invitations to participate in the survey were sent to potential New York growers and wineries. Of those, 32 individuals responded, for a response rate of 16 percent.

Given the nature of the Northern Grapes Project and its focus on cold-hardy grapes, it is not surprising that those responding to the survey indicated a connection to the cold-hardy industry. Since the survey did not generate a response from vineyards growing only traditional grapes or from the larger, traditional wineries in New York, the focus of the baseline study report will be on the cold-hardy producers (of both wines and grapes). The economic contribution analysis will use secondary data sources to supplement the survey data and calculate the total economic contribution of the wine grape and locally-sourced winery industries in New York.

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%

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

Nebraska	172	46	27%
New Hampshire	51	14	27%
New York	202	32	16%*
South Dakota	14	11	79%
Vermont	47	18	38%
Wisconsin	476	97	20%
*The response rate of 16 percent in New York represents the number of respondents to the survey from the entire population of those surveyed. Since all respondents report growing or using cold-hardy grapes, this indicates a very high response rate from that subset which is the focus of this report.			

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 grapes 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.

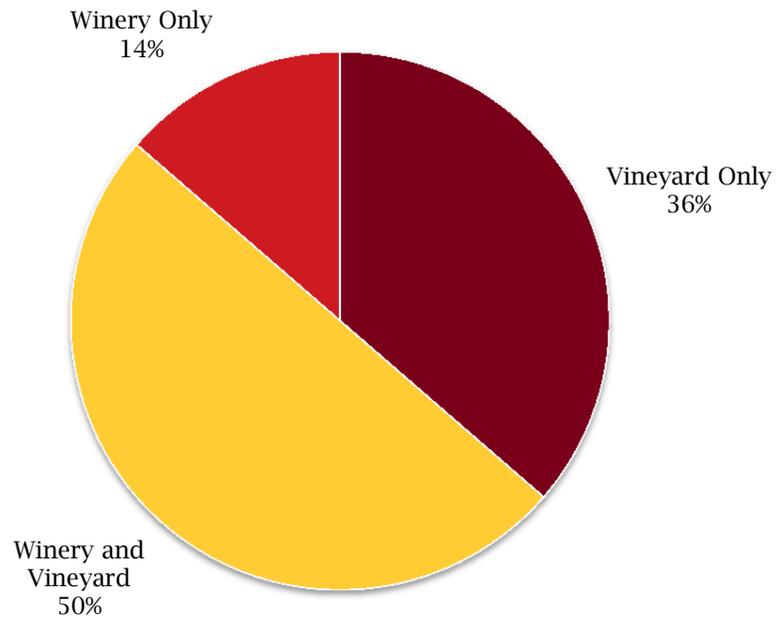
The first survey question asked “Are you associated with...1) a vineyard (past, present, or future), 2) a winery, 3) both, or 4) other. Those responding “other” were directed to the end of the survey.

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). Half of survey respondents in New York operate a winery-vineyard combination. One-third of respondents are stand-alone vineyards. In total, the survey includes 14 wineries and 18 vineyards. All of the respondents indicate they either grow cold-hardy grapes or use cold-hardy grapes in wine production. For some respondents, cold-hardy grapes are the focus of their operation while for others cold-hardy grapes are only a small portion of their winery or vineyard operation. Federal or state statistics reporting the number of cold-hardy grape growers and wineries is not available. However, since cold-hardy grapes tend to be grown in counties where traditional grapes cannot be grown due to weather conditions, one can estimate the number of cold-hardy wineries by counting wineries in counties that historically have not grown grapes. Indications are there are 28 wineries in those areas, which would result in a 50 percent response rate for this study.

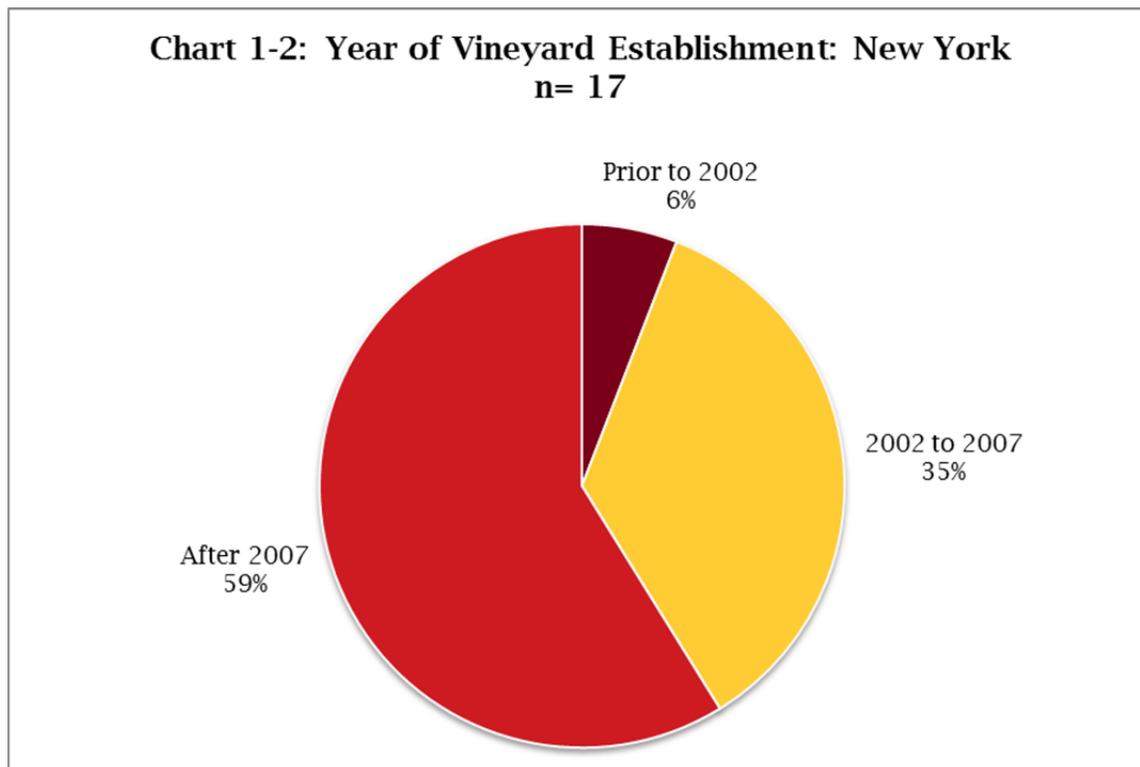
Chart 1-1: Are You Associated With? New York n=32



COLD-HARDY VINEYARD CHARACTERISTICS

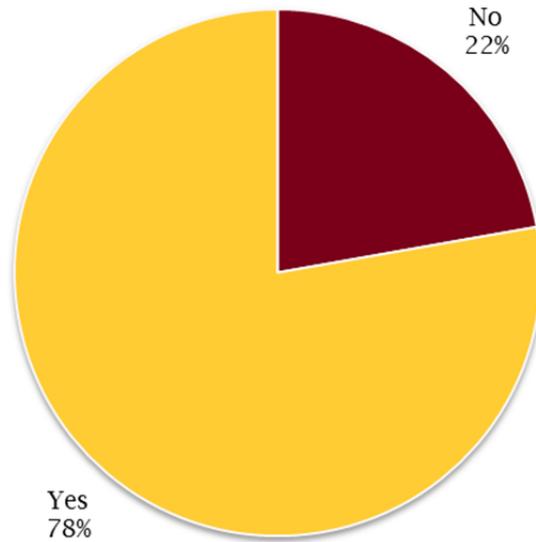
Of the 32 survey responses, 18 indicated they owned and operated a commercial vineyard in New York. According to the New York Agricultural Statistics Service (NASS), there are 894 vineyards in New York. Unlike other states in the Northern Grapes Project, New York vineyards produce grape juice, wine juice, and grapes for other uses. As of 2011, there were 31,800 acres of grapes planted in New York. Approximately 10,000 of those acres are dedicated to wine grapes. Determining the number of cold-hardy grapes acreage is difficult, as the majority of the cold-hardy grape cultivars are considered as other plantings in NASS surveys. Data is available by county, however, and the most recent NASS survey indicates 511 acres are planted in counties that have not traditionally grown grapes. Therefore, the best estimate is there are 511 acres of cold-hardy grapes in New York, or about 5 percent of total wine grape acreage.

The Northern Grapes Project baseline survey results indicate continued growth in the cold-hardy wine grape growing industry in New York (see chart 1-2). Nearly 60 percent of responding vineyards have been established since 2007. Typically, a vineyard does not reach full production capacity until year 4. Vines planted after 2007 are just now or have yet to reach maturity and yield to their full potential.



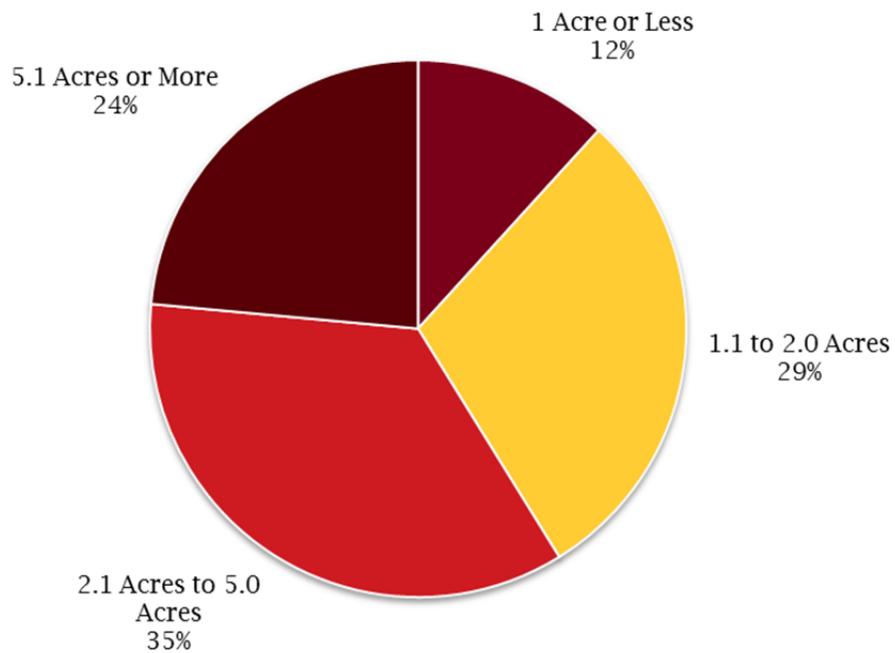
In addition to new cold-hardy wine grape vineyards being established, current vineyards continue to expand their planted acreage. Seventy-eight percent of responding vineyards indicated they had planted additional acreage since the original founding of their vineyard, chart 1-3.

Chart 1-3: Have You Added Acreage Since Your Vineyard Was Established? New York n= 18



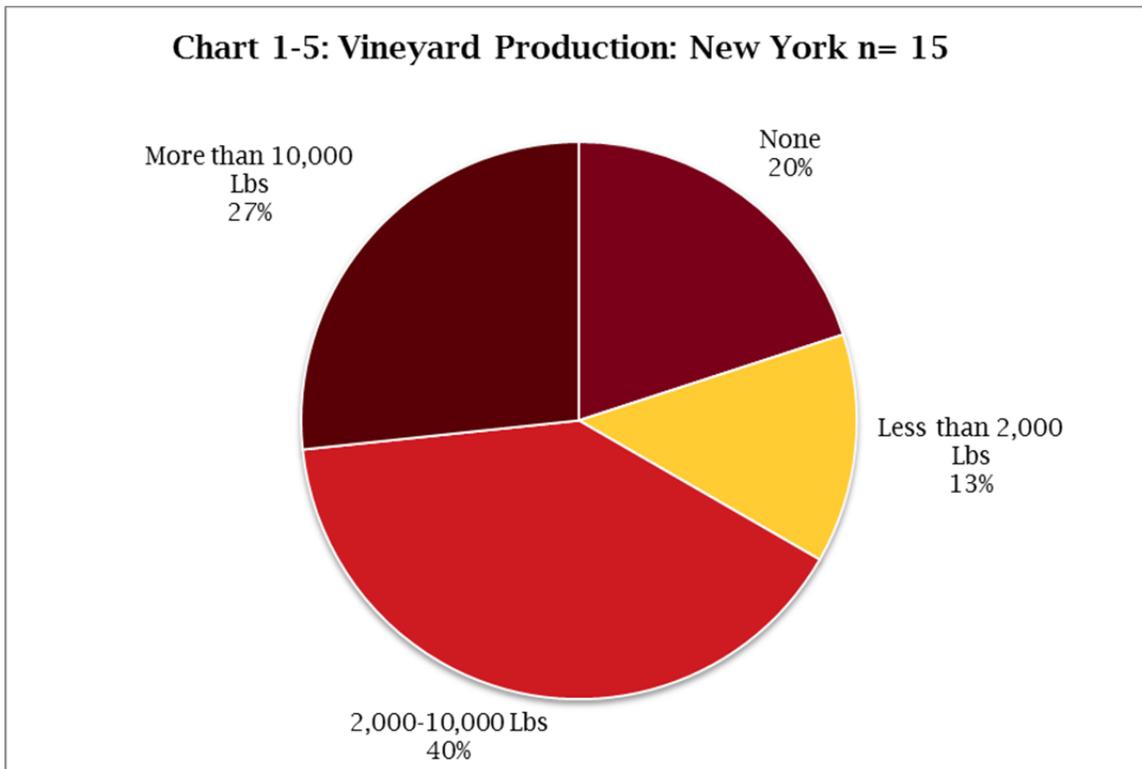
The majority of responding cold-hardy grape vineyards (59 percent) are more than 2.0 acres in size, as shown in chart 1-4. Nearly one-quarter of the vineyards reported having more than 5 acres planted in grapes.

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



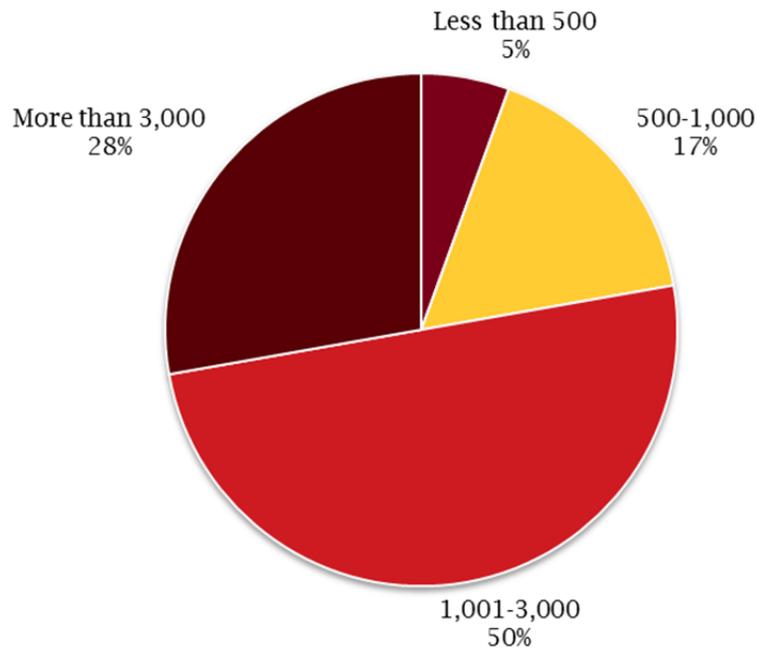
Cold-hardy wine grape vineyard production reflects the age of vineyards and the size of vineyards in the survey population (see chart 1-5). Twenty percent of the vineyards surveyed indicated they did not produce any fruit in 2011. As depicted in chart 1-2, 59 percent of vineyards were planted after 2007, which means they likely have not all reached maturity yet. Therefore, it is not surprising some have not produced harvestable fruit.

According to the survey results, cold-hardy vineyards in New York produced a total of 454 tons of grapes in 2011. According to NASS, there were 54,000 tons of wine grapes grown in New York. Therefore, cold-hardy grape growers account for less than 1 percent of total production. Average yield per acre was 3.2 tons. This is below the state average (just over 5 tons per acre), which is not surprising since many cold-hardy vineyards are relatively young and just beginning to reach maturity. Further, the 5 tons per acre includes juice grapes which have higher yields than wine grapes.



The average participating cold-hardy wine grape vineyard has 2,200 planted vines. Half of vineyards have 1,001 to 3,000 vines in the ground, as shown in chart 1-6.

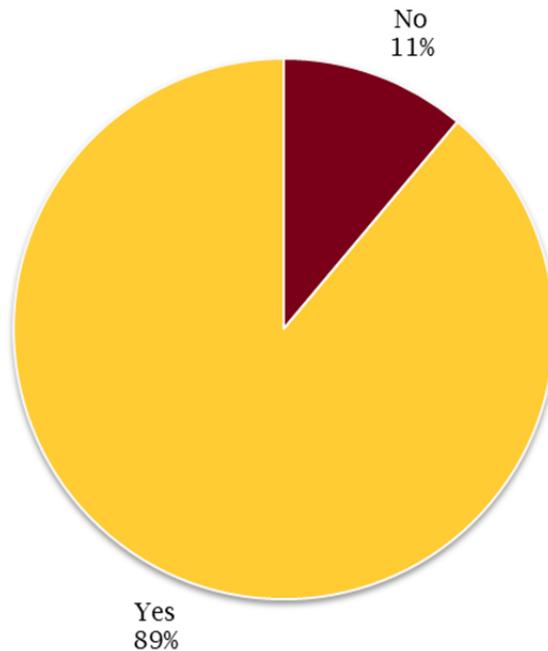
Chart 1-6: Total Vines in Vineyard: New York n= 18



Vineyard Operations

The majority (89 percent) of cold-hardy wine grape vineyards operate as stand-alone agriculture enterprises (see chart 1-7). Eleven percent of vineyards participating in the survey operate as a secondary agricultural operation. Those who reported the vineyard was a secondary operation frequently cited an apple orchard as their primary operation. None of the responding vineyards operate as a commercial nursery.

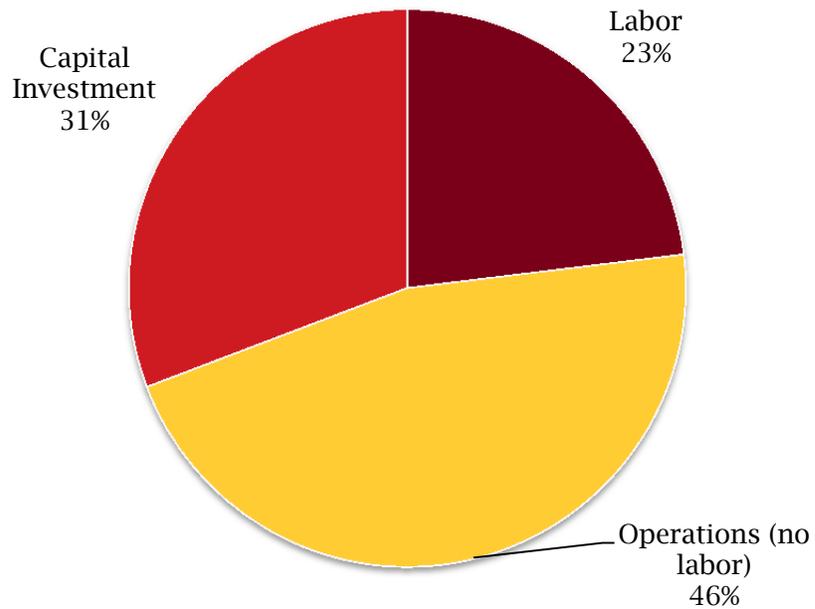
Chart 1-7: Is the Vineyard Your Primary Agricultural Operation? New York n= 18



The average responding cold-hardy vineyard spent \$4,748 on operations (including \$2,445 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 \$3,230 on capital investments, including trellis systems, tractors, crushers, pick-ups, ATV's, and other equipment.

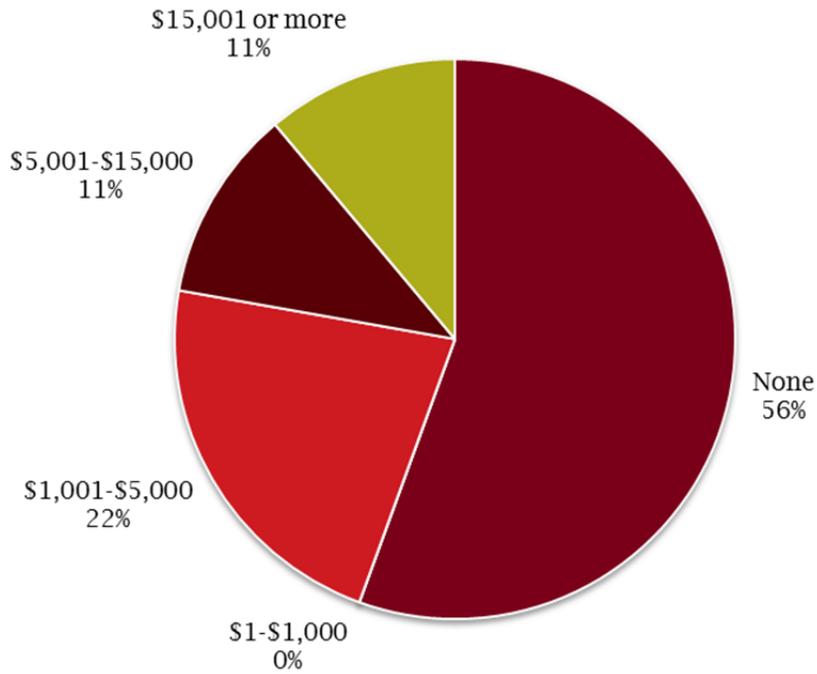
In total, cold-hardy wine grape vineyards in the state of New York spent \$4.1 million to operate in 2011. Operating expenses totaled \$2.4 million, including \$1.2 million in labor expenditures. Capital expenses in New York totaled \$1.6 million, see chart 1-8.

Chart 1-8: Expenditures by Category: New York n=17



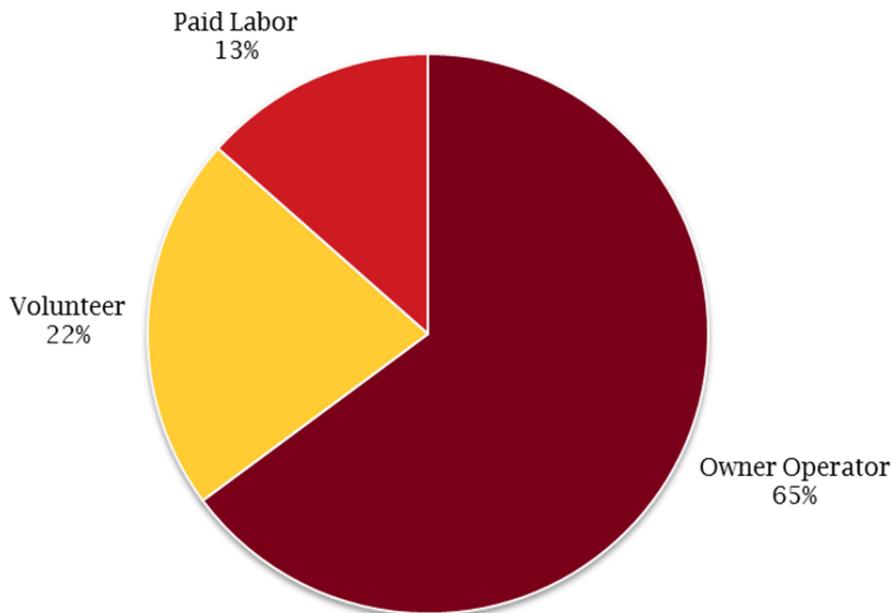
Of the 9 vineyards that responded to the question regarding labor expenditures, 56 percent reported no expenditures for labor (chart 1-9). This is primarily because the owner/operator did all the labor or the vineyard used volunteer or family labor to complete the vineyard tasks. As one vineyard operator commented “I am retired, there are no labor costs”.

Chart 1-9: Vineyard Labor Expenditures: New York n= 9



As shown in Chart 1-10, the majority of labor for the responding vineyards was provided by the owner/operator (65 percent). Just under a quarter (22 percent) of labor was supplied by paid employees and 13 percent by volunteer laborers.

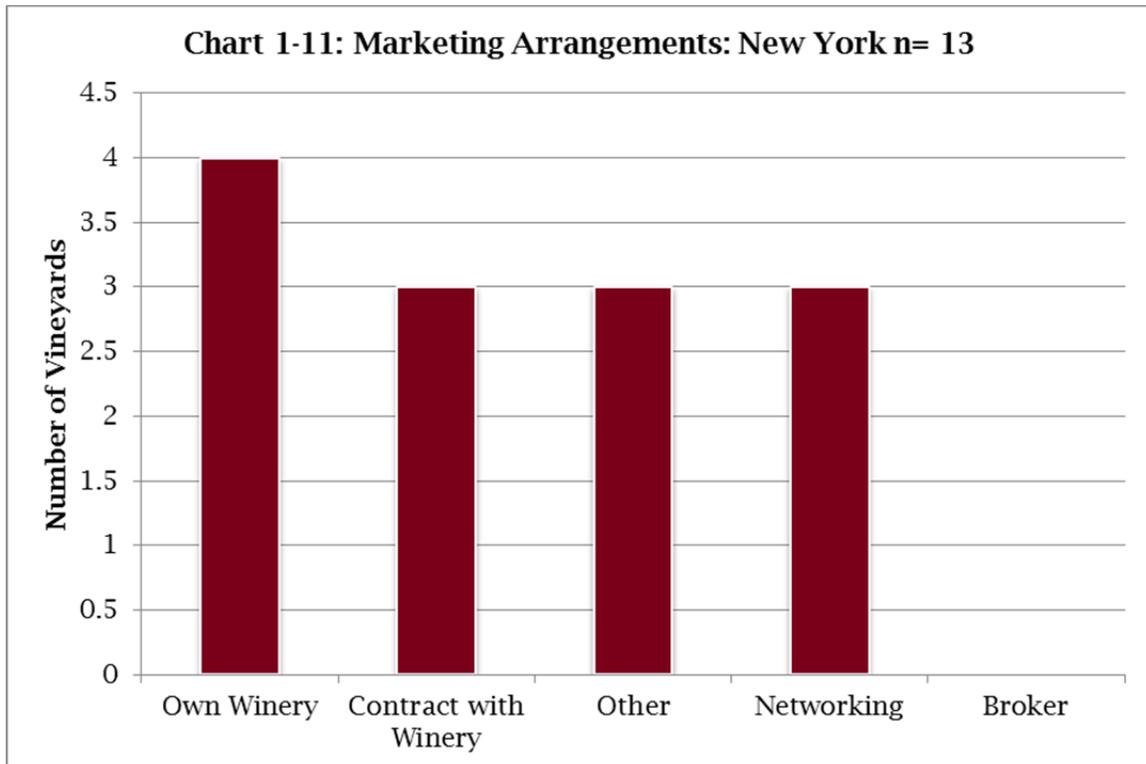
Chart 1-10: Hours of Labor by Category: New York n= 11



Marketing and Grape Utilization

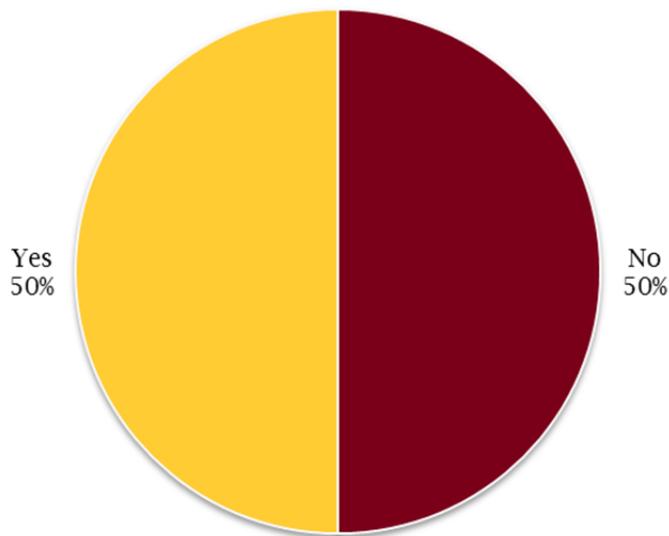
Cold-hardy grape growers in the survey favor contracts as the best method for marketing their grapes (chart 1-11). Growers were asked which market arrangements they used to sell their grapes. They could select more than one choice. The most commonly used method was to sell through their own winery. Also commonly used were sales via contract with a winery and sales via networking. No growers indicated using a broker to sell their grapes.

There were several growers that indicated they used “other” methods to market their grapes. Not unexpectedly, given the percent of new vineyards that have not yet reached maturity, many of those “other” responses indicated they made no sales in 2011.



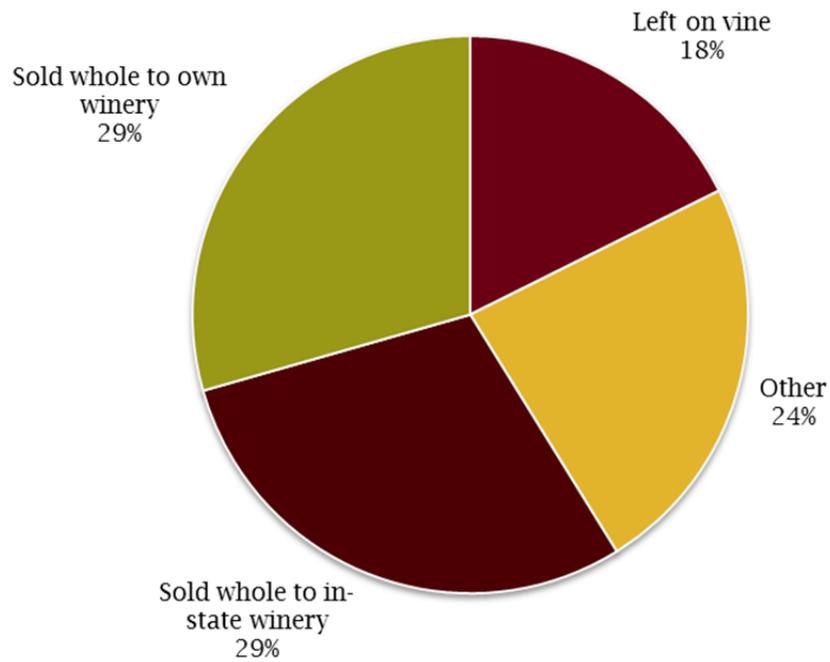
Growers that contract with wineries to market their grapes are interacting with the winery to make management decisions. Half of growers indicated that the winery to which they sold grapes was active in management decisions in the vineyard, as shown in chart 1-12.

Chart 1-12: If Sold via Contract, Was Winery Active in Vineyard Management Decisions? New York n= 4



The majority of grapes produced by cold-hardy vineyards are sold to a winery (see chart 1-13). Twenty-nine percent sold their grapes to an in-state winery. Another 29 percent sold their grapes to their own 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. None of the responding grape growers reported selling out of state. For those reporting “other” uses for their grapes, responses included crops destroyed by pests, disease, or insects or that the grapes were used for personal use.

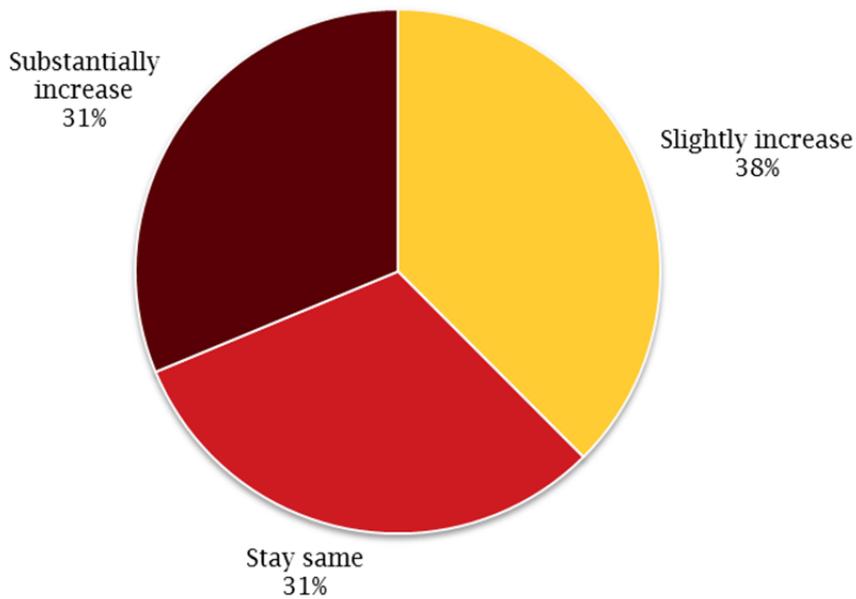
Chart 1-13: Grape Utilization: New York n= 16



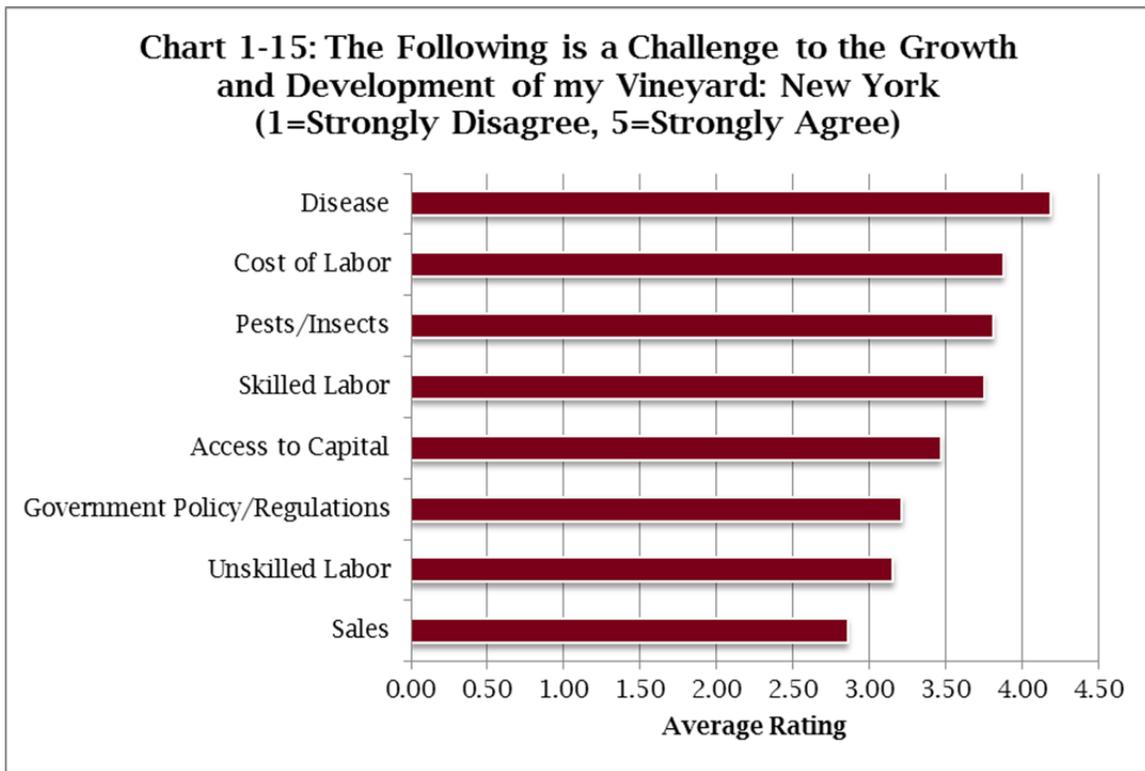
Future Plans

Current grape growers appear to be optimistic about the future of their operations. Nearly 70 percent of the responding growers plan to increase their acreage in the next two years. The remainder plan to maintain their current size over the next two years, chart 1-14.

Chart 1-14: Over the Next Two Years, My Vineyard Will... New York n= 16



Grape growers responding to the survey indicate that the biggest challenges to their vineyard operations are disease and the cost of labor, 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 disease an average score of 4.2 and cost of labor an average score of 3.9. Sales and availability of unskilled labor do not seem to be significant issues for the responding growers in New York.

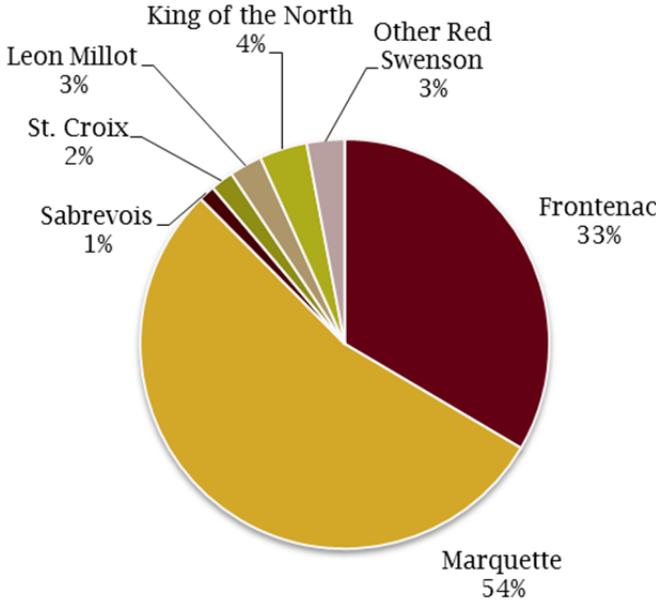


Grape Varieties

Survey participants reported 27,400 planted cold-hardy vines in their vineyards. The majority of these (17,200) are red cultivars. The remaining vines (10,200) are white cultivars. Chart 1-16 depicts total reported planted vines of red varieties. Marquette grapes comprise 54 percent of the total planted red varieties. Frontenac comprises 33 percent. This chart illustrates the sheer popularity of the Marquette grape. This cultivar is relatively new (released in 2006), so the fact that it is now more than half of all planted red varieties is remarkable.

Table 1-2 reports the number and age of vines of red cultivar reported planted. These figures represent only what the vineyards who answered the survey reported. Responding vineyards reported 200 red cultivar vines older than 10 years of age, 3,800 between 4 years and 10 years of age, and 13,200 younger than 4 years old. These figures show an increased pace of adoption of cold-hardy varieties in New York. Non-bearing vines (less than 4 years of age) comprise 76 percent of planted acreage and will not reach full production until their fifth season. The reported results indicate that red cultivar grape production will quadruple in the next four years as those vines mature.

Chart 1-16: Total Planted Cold-Hardy Vines, Red Varieties: New York



Further, the table reflects the rapid growth of the Marquette grape variety. Ten years ago, there were no Marquette vines in the ground. Within the last four years, the responding vineyards alone report planting nearly 7,500 vines. Plantings of Frontenac have also increased in recent years.

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

Variety	Vines, Younger than 4	Vines, Between 4 and 10 Years	Vines, Older than 10	Total
Baltica	0	0	0	0
Beta	0	0	0	0
Frontenac	4,220	1,540	0	5,760
GR-7	90	0	0	90
King of the North	500	150	0	650
Leon Millet	245	0	200	445
Marechal Foch	0	0	0	0
Marquette	7,450	1,848	0	9,298
Other Red	200	100	0	300
Petite Pearl	50	0	0	50
Sabrevois	200	20	0	220
St. Croix	240	72	0	312
Valiant	25	50	0	75
Total	13,220	3,780	200	17,200

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

Chart 1-17 illustrates the total planted vines of cold-hardy white varieties. La Crescent (42 percent) and Frontenac Gris (15 percent) are the most commonly planted vines by the reporting vineyards.

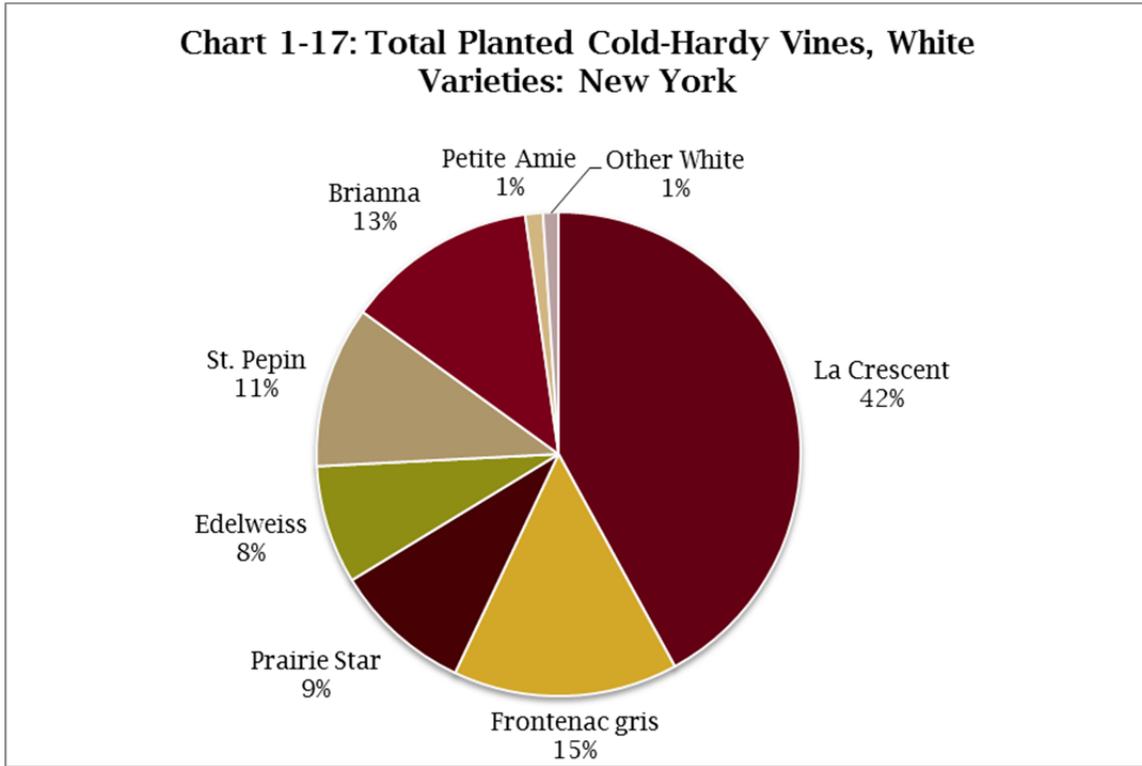


Table 1-4 reports the total reported planted vines of cold-hardy white cultivars. These figures represent only what the vineyards who answered the survey reported. Responding vineyards report 0 vines older than 10 years in the ground, 1,500 vines of age between 4 and 10 years, and 8,600 vines younger than 4 years. Non-bearing vine (less than 4 years old) comprise 81 percent of the planted vines. These figures indicate a dramatic increase in the volume of white cold-hardy grapes will occur as the more recently planted vines reach maturity.

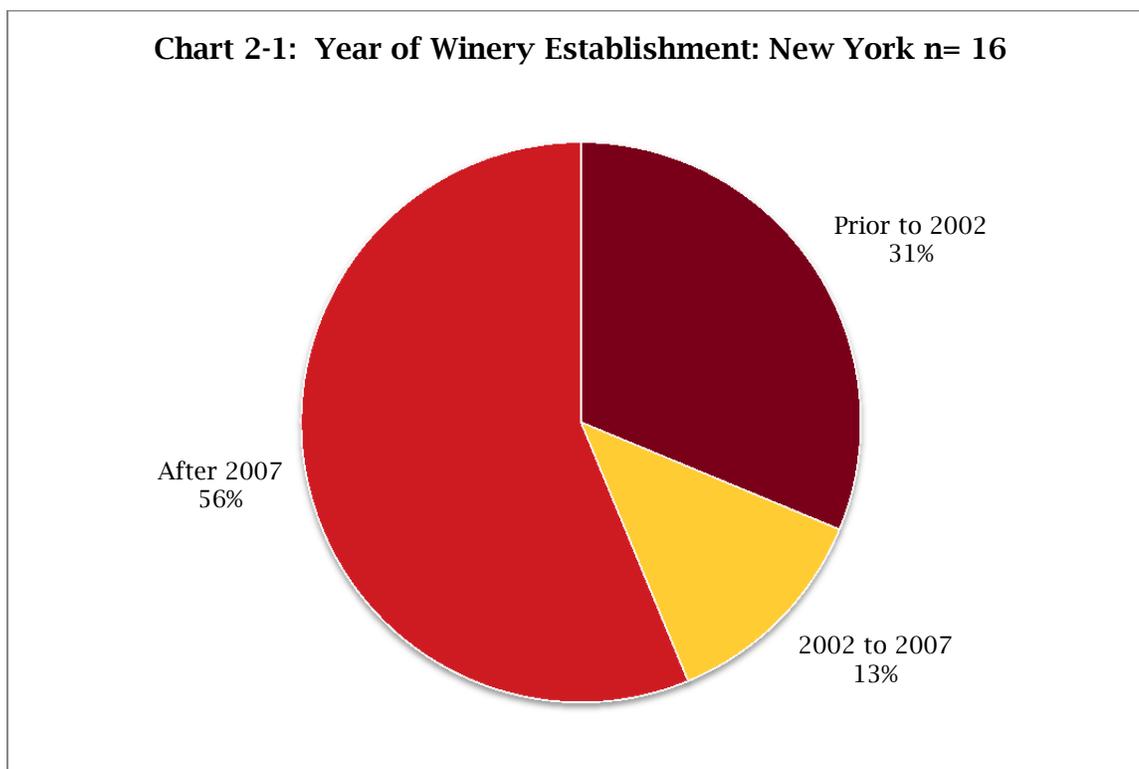
Table 1-4: Planted Vines of Cold-Hardy White Varieties by Responding Vineyards, by Age, New York

Variety	Vines, Younger than 4	Vines, Between 4 and 10 Years	Vines, Older than 10	Total
Brianna	1,300	0	0	1,300
Edelweiss	705	100	0	805
Espirit	0	0	0	0
Frontenac Blanc	0	0	0	0
Frontenac Gris	725	800	0	1,525
Kay Gray	40	0	0	40
La Crescent	3,740	532	0	4,272
La Crosse	40	25	0	65
Louise Swenson	0	0	0	0
Other White	0	0	0	0
Petite Amie	120	0	0	120
Prairie Star	940	0	0	940
St. Pepin	1,000	97	0	1,097
Total	8,610	1,554	0	10,164
The totals in this table are for responding vineyards only and do not represent the total industry in New York.				

COLD-HARDY WINERY CHARACTERISTICS

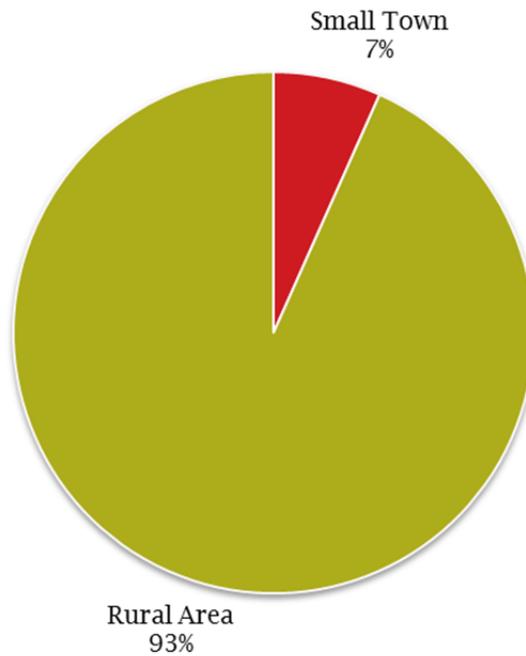
Sixteen New York wineries responded to the Northern Grapes Project survey. The focus of this report is on wineries using cold-hardy grapes in their production (hereafter, cold-hardy wineries). All responding wineries indicated using cold-hardy grapes in wine production. Estimates are there 28 wineries in counties which have not traditionally grown grapes (and therefore more likely to be using cold-hardy grapes).

As shown in chart 2-1, the number of wineries using cold-hardy grapes is increasing. New York has a tradition of wine production dating back to the 1850s. In comparison to other states growing cold-hardy grapes, New York's industry is more mature. Nearly one-third of wineries using cold-hardy grapes existed prior to 2002. Rapid growth is occurring though, as more than half of all cold-hardy wineries have been founded in the past 5 years.



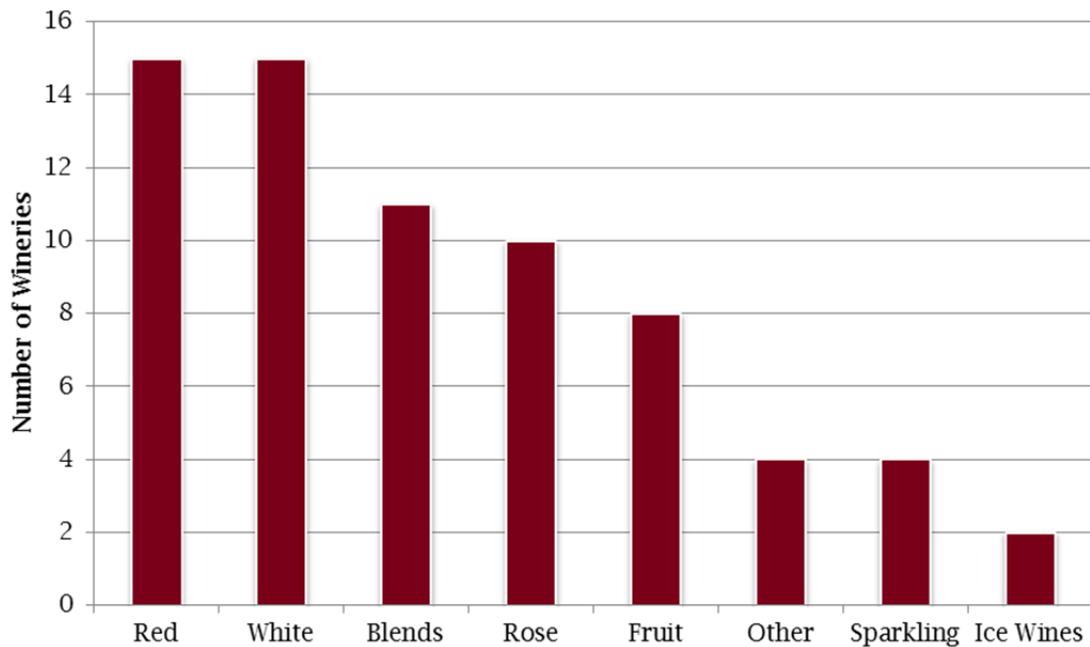
The vast majority of wineries utilizing cold-hardy grapes in wine production are located in a rural area (93 percent). The rest are in a small town. This could be a function of where cold-hardy grapes are grown and sourced.

Chart 2-2: Which Setting Best Describes Your Winery
Location: New York n= 16



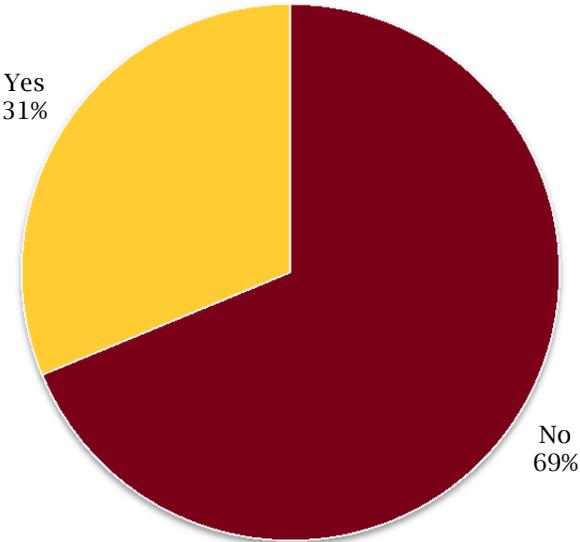
All the responding New York cold-hardy wineries are producing red and white wines, see chart 2-3. Wineries are also commonly producing blends, rose, and fruit wines. Only a few wineries are producing ice wines and sparkling wines.

Chart 2-3: What Kinds of Wines Are You Currently Producing?: New York n= 15

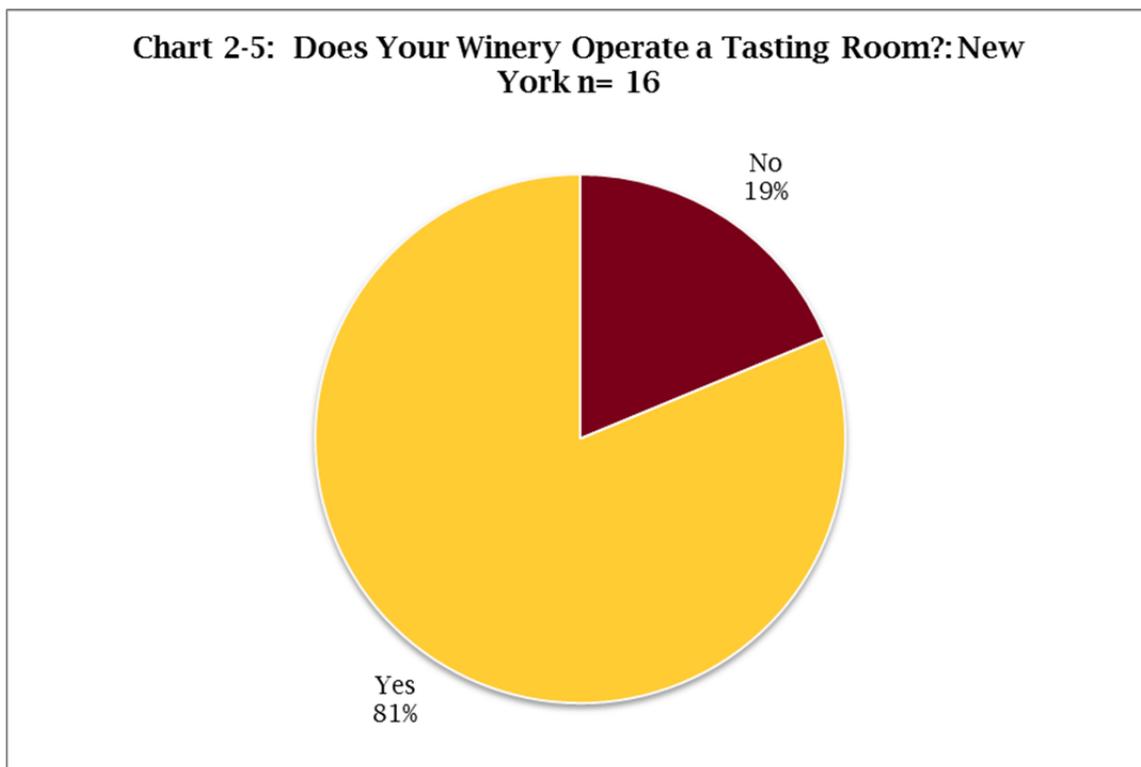


Just under one-third of cold-hardy wineries currently participate in a wine trail. See chart 2-4. These results indicate there is opportunity for further development of this marketing activity in New York amongst the cold-hardy wineries. Given that the wineries are predominately located in rural areas, wine trails may help to attract tasting room customers. Wine trails were a concept first developed and perfected in New York. One reason the cold-hardy wineries are not currently participating may be related to the fact that the cold-hardy wineries are more likely to be newly established. As they grow and develop, one would expect the number participating in wine trails to increase.

Chart 2-4: Does Your Winery Currently Participate in a Wine Trail?: New York n= 16

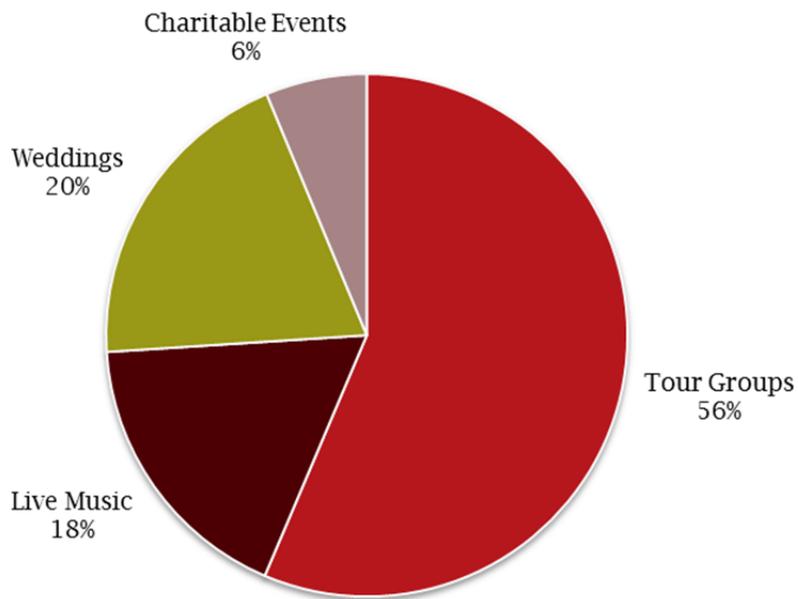


Eighty-one percent of New York cold-hardy wineries operate a tasting room in conjunction with their winery, see chart 2-5. As with the wine trails, this number may be lower for cold-hardy wineries than for traditional wineries in New York due to the prevalence of new start-up cold-hardy wineries. Three-fourths of the wineries (75 percent) charge for tastings. Twenty percent of the wineries offer food with their wine service. On average, each winery served 5,500 tasting room customers. Wineries estimate that 32 percent of their tasting room visitors are repeat customers.



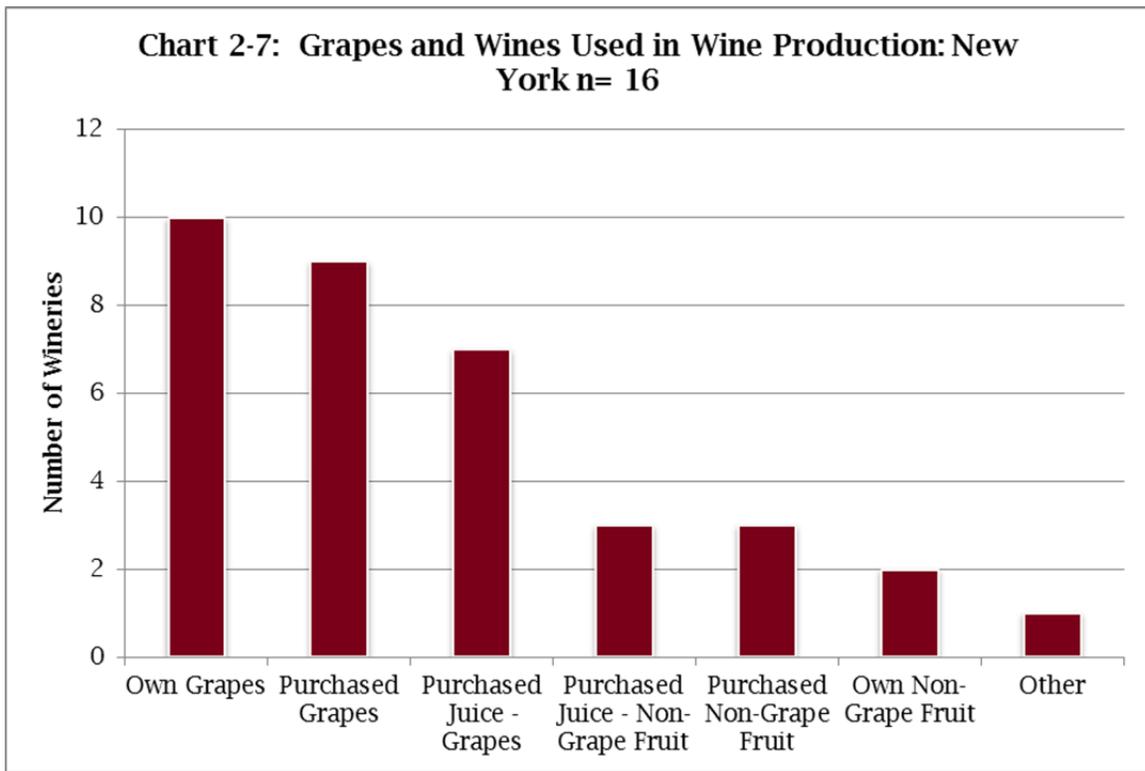
Wineries also reported on events held at their winery in 2011. Specifically, wineries were asked to report how many people attended the following types of events: grape stomps, wine-making classes, tour groups, live music, weddings, ladies-only events, charitable events, and other events. In total, the responding wineries (16) reported 21,000 guests at their winery events. The breakdown of which events these guests attended is shown in chart 2-6. Tour groups were responsible for over half of the event attendees in 2011.

**Chart 2-6: Percent of Winery Visitors Per Event: New York
n= 16**



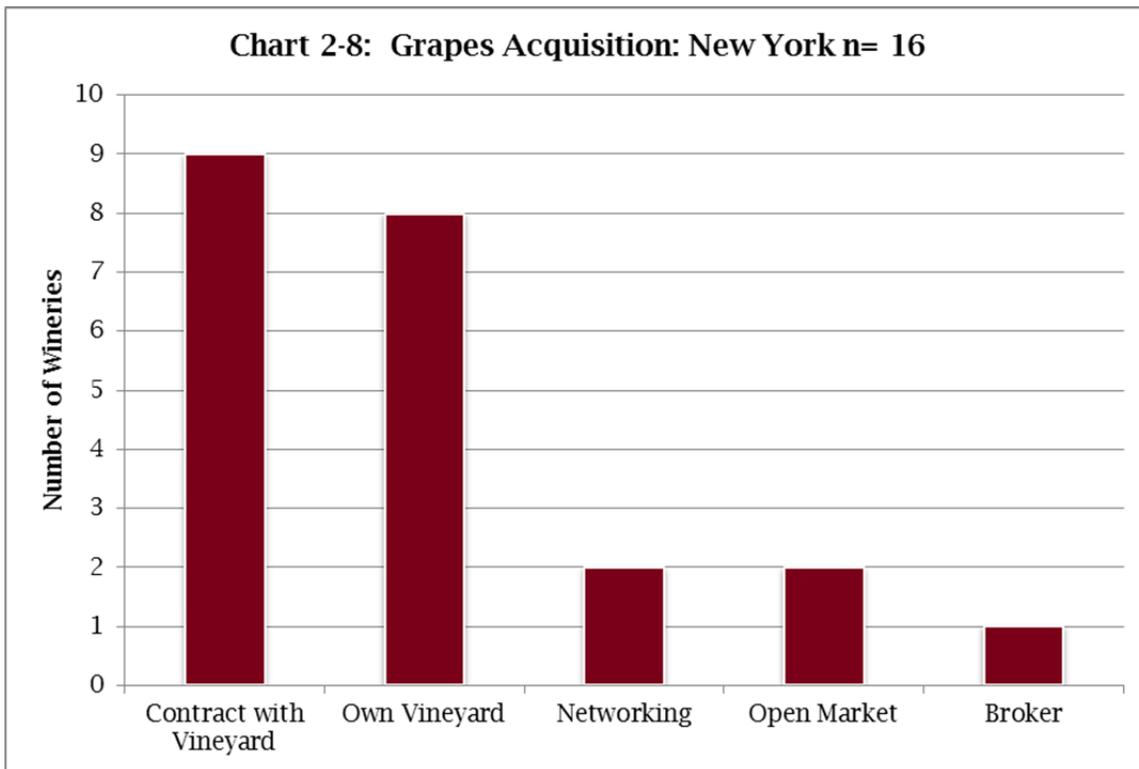
Grape Acquisition

Cold-hardy wineries in New York purchased \$320,000 of cold-hardy grapes in 2011, from their own vineyards and from other vineyards. 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.



As depicted in chart 2-8, cold-hardy wineries primarily acquire their grapes via contract or from their own vineyards. A few wineries use networking, open market, or a broker. New York is one of the few states where wineries indicate they have purchased through a broker.

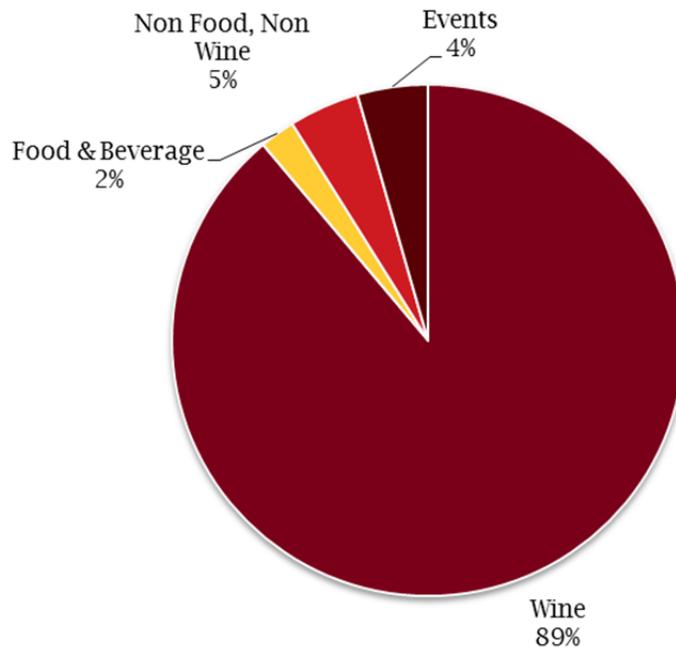
Chart 2-8: Grapes Acquisition: New York n= 16



Winery Sales and Production

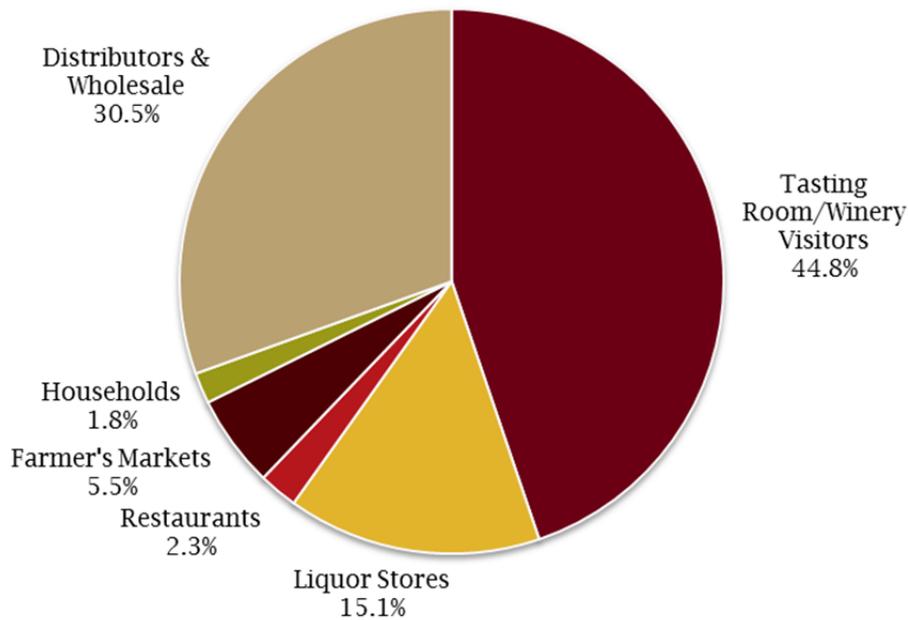
In total, cold-hardy wineries in New York had sales of \$860,000 in 2011. Wine sales, including bottles sold and tasting room fees, are the primary source of revenue for cold-hardy wineries, accounting for nearly 90 percent of all sales (see chart 2-9). Wineries produced, on average, 4,600 gallons of wine. In total, the cold-hardy wineries produced 68,100 gallons of wine.

Chart 2-9: Winery Sales by Category: New York n= 16



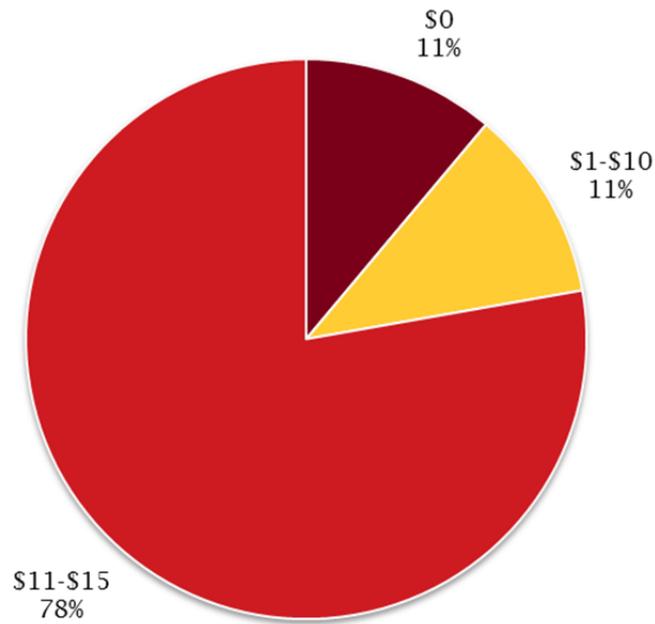
Eighty-one percent of cold-hardy wineries operate a tasting room and 44 percent of an average winery's sales are through the tasting room or to winery visitors, as shown in chart 2-10. Approximately forty-five percent of sales are via distributors and liquor stores. Sales to Farmer's Markets, restaurants, and direct-to-households account for only a minor portion of sales.

Chart 2-10: Percent of Wine Sales: New York n= 16



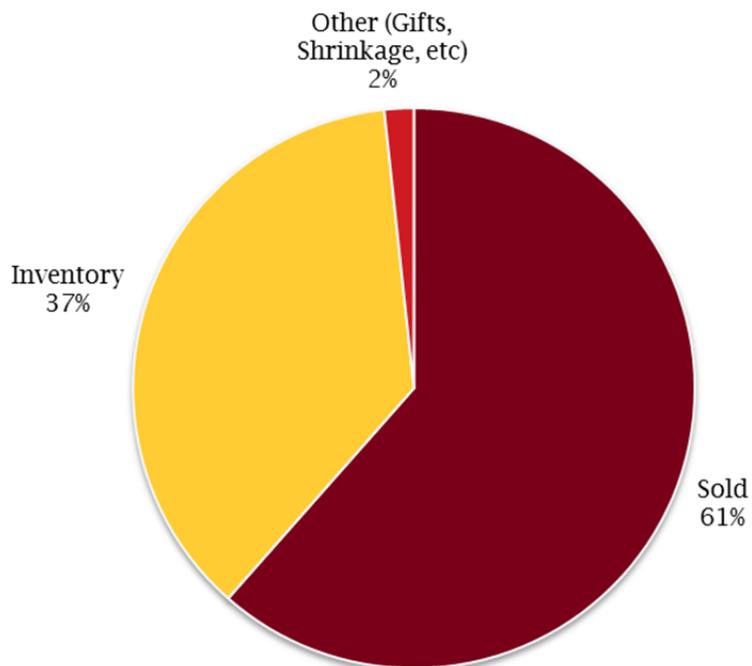
Cold-hardy wineries reported the average price per bottle of wine sold was \$11 in 2011. Chart 2-11 shows the distribution of average wine sale prices. Eleven percent of wineries reported receiving \$0 for wine sold. These are likely wineries who produced wine but whose wine was not ready for sale in 2011. Over three-fourths of the wineries, 78 percent, sold their wine for a price of \$11-\$15 per bottle.

Chart 2-11: Average Price Per Bottle of Wine: New York n= 8



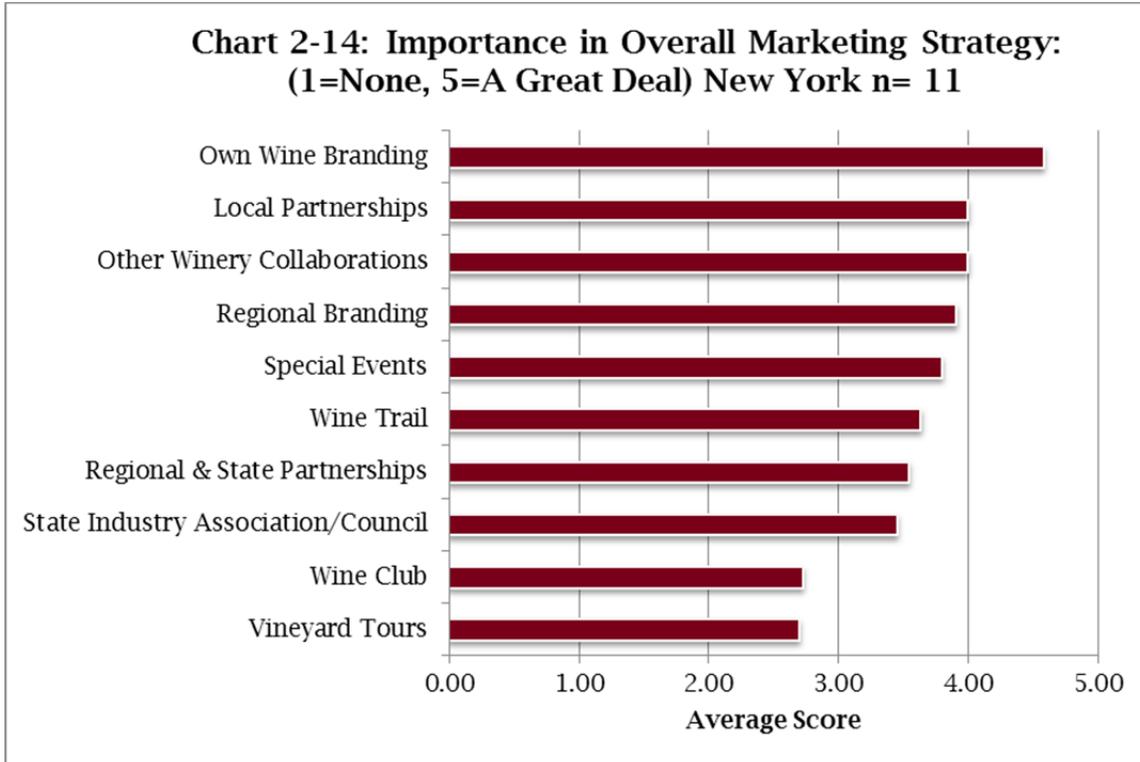
As mentioned, the average New York cold-hardy winery produced 4,600 gallons of wine. The majority of the wine (61 percent) produced was sold, see chart 2-12. Wineries put over one-third of the gallons of wine produced into inventory. A small percent (2 percent) of wine produced was utilized in other ways (e.g. gifts, donations, shrinkage, etc.).

Chart 2-12: Distribution of Wine Produced: New York n= 16

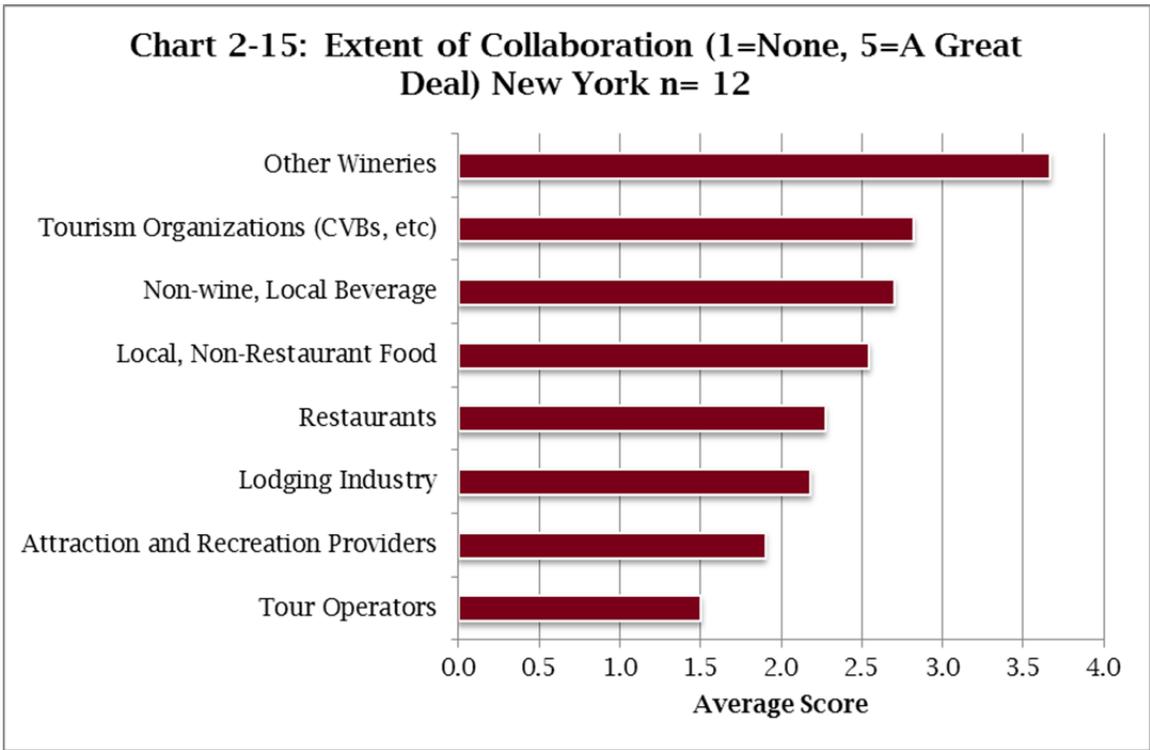


Winery Marketing and Collaboration

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, cold-hardy winery owners believe that branding their own wine is the most important marketing strategy they can employ, assigning it an average score of 4.58. Local organizations and other winery collaborations were also assigned relatively high scores. Winery owners assigned the lowest average scores to wine clubs and vineyard tours. Forty-four percent of wineries offer vineyard tours.

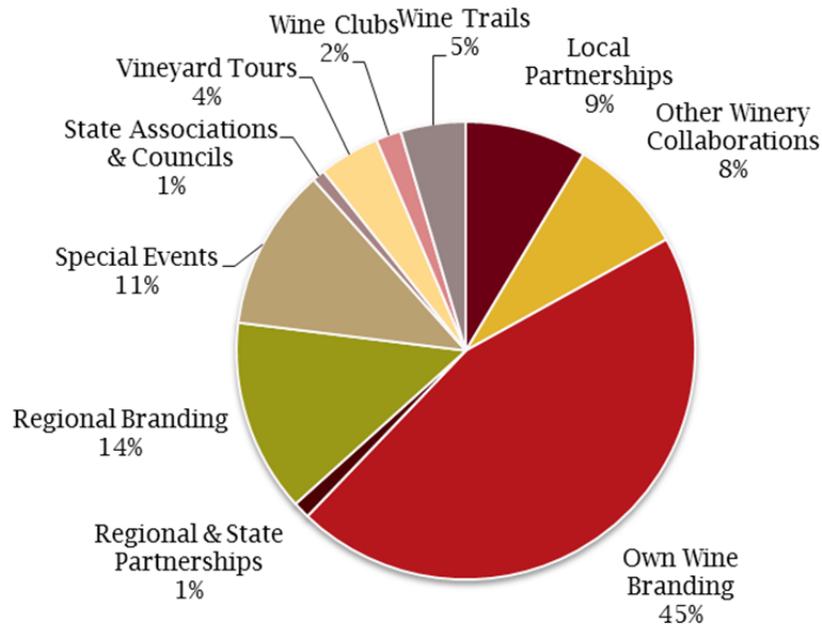


Wineries were also asked about their current collaboration efforts. They were asked, on a scale where 1 equals “none” and 5 equals “a great deal”, “to what extent do you currently collaborate with the following entities?” The highest level of collaboration is with other wineries, as shown in chart 2-15. This chart would indicate there is room for improved collaboration in New York cold-hardy winery operations.

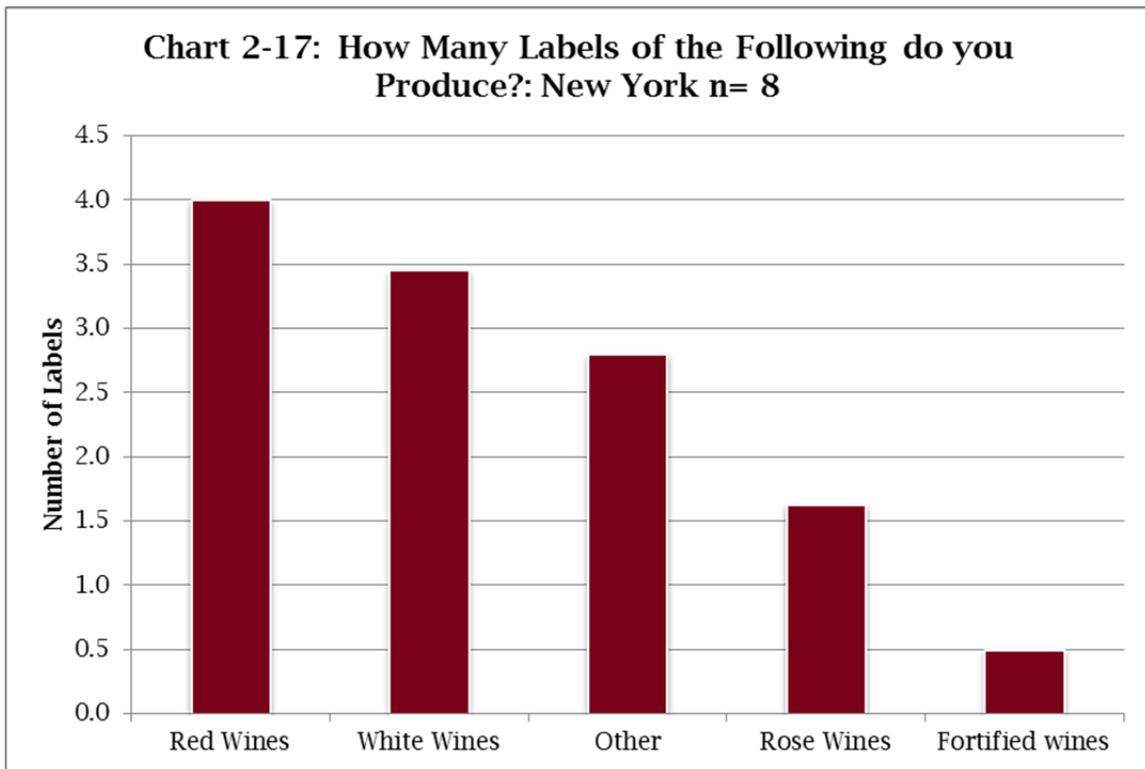


Wineries were then asked how various marketing arrangements influenced their sales. Cold-hardy wineries overwhelming indicated that their own wine branding efforts drove the majority (45 percent) of their sales. Regional branding initiatives drive an estimated 14 percent of sales and special events 11 percent. Chart 2-16 illustrates this point.

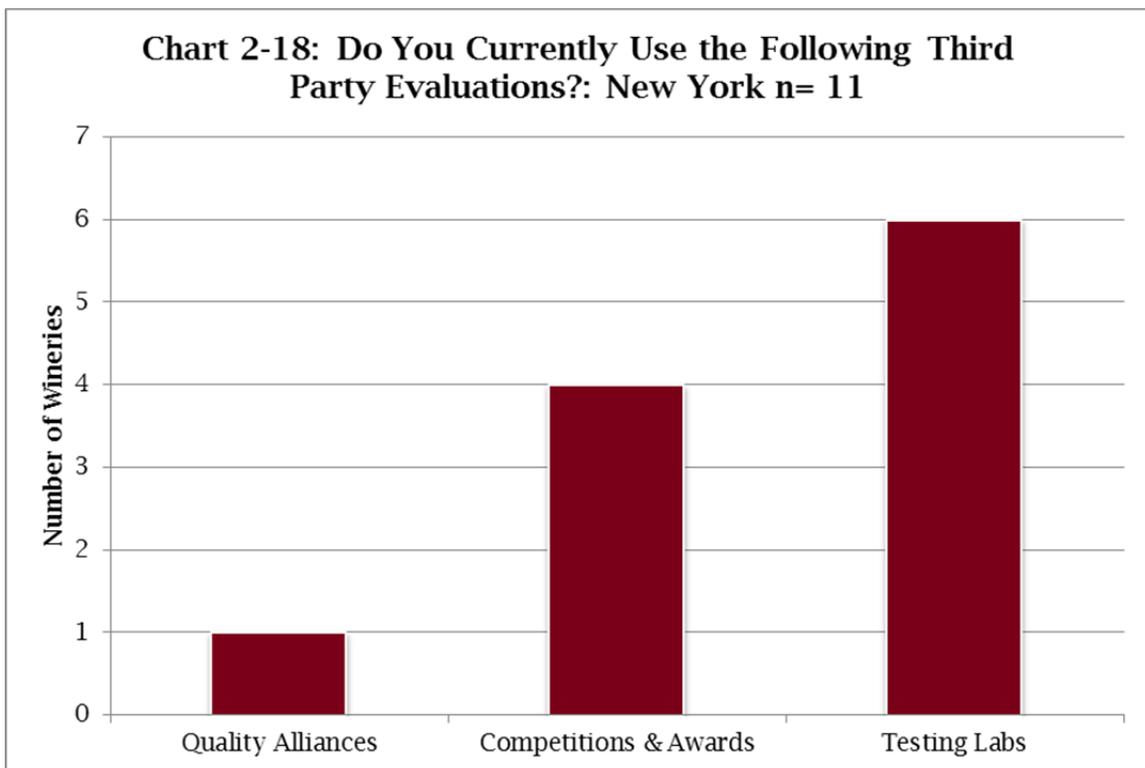
Chart 2-16: What Percent of Current Sales are Attributable to the Following?: New York n= 8



As mentioned earlier, the most commonly produced wines are red and white wines. On average, each cold-hardy winery is bottling 4 labels of red and 3 of white, as shown in chart 2-17. Wineries also report an average of 3 “other” labels. The survey instrument did not ask wineries to indicate what other types of labels are being produced.



Testing labs are the most commonly used type of third party evaluations, as reported by the responding cold-hardy wineries. Wineries are also participating in competitions. See chart 2-18.



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 cold-hardy wine industry, as 91 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. The industry, as the older wineries mature, may be in need of assistance in succession planning and transferring a business. Continued growth also indicates a continued need for successful business planning.

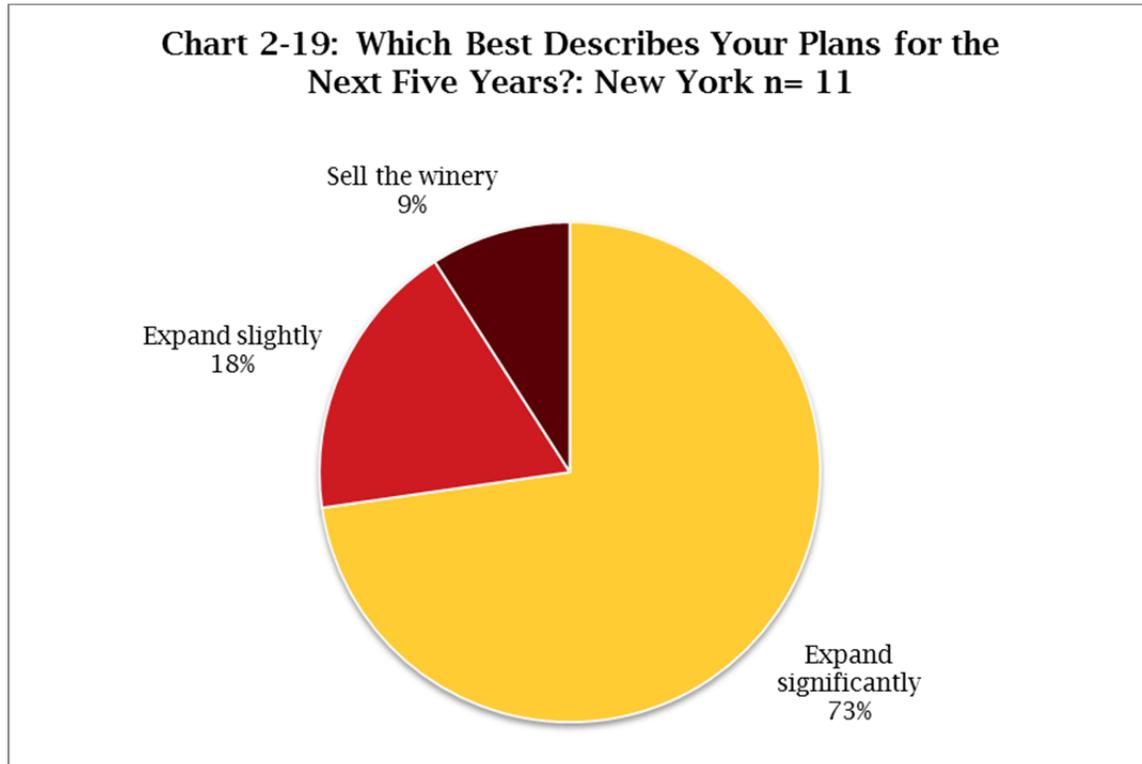
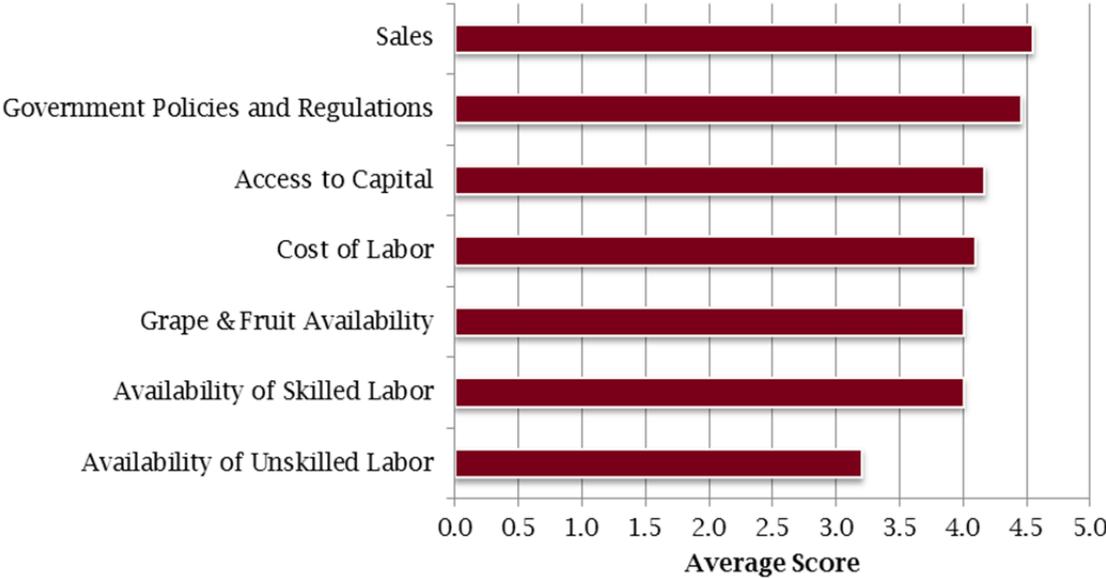


Chart 2-20 depicts winery owners' responses to a question about the challenges to the growth and development of their winery. On a scale where 1 equals "strongly disagree" and 5 equals "strongly agree", wineries were asked to rate a list of issues in relation to each as a challenge to the growth and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

Chart 2-20: The Following is a Challenge to the Growth and Development of my Winery (1=Strongly Disagree, 5=Strongly Agree): New York n= 11



ECONOMIC CONTRIBUTION OF WINE VINEYARDS AND WINERIES IN NEW YORK

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.

Until now, this report has focused on the baseline survey results related to the cold-hardy industry in New York. For the economic contribution study, the scope will increase to account for all wine grapes and locally-sourced wineries in New York. By design, the economic contribution analysis includes wine grapes grown in New York and wine produced from those grapes (locally-sourced). Wine crafted from grapes grown in other states and regions are not included in this analysis, nor are juice grapes.

Northern Grape project survey respondents represented cold-hardy wine grape growers and wine makers in the state. The survey responses did not, however, represent the entire industry, including vineyards growing traditional wine grapes and wineries using traditional wine grapes. As a result, this analysis cannot use the survey results to quantify the economic impact of the entire wine grape and locally-sourced winery industry in New York. Therefore, the following analysis is based on available secondary data sources.

Direct Effects

In measuring the economic contribution of the grape growing and locally-sourced winery industries in New York, the first step is to measure the direct effect of the industries.

Locally-sourced wineries and wine grape vineyards contribute to New York'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 purchases 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 growing and locally-sourced winery industries in New York.

New York wine grape vineyards, in 2011, earned an estimated \$32.5 million from their operations. According to the NASS, there were 54,000 tons of wine grapes produced in New York in 2011. The average price per ton for all grapes was \$373. Using published statistics on the production of grapes by variety and using an average price of \$250 per ton for the major juice grapes², researchers estimate the price per ton of wine grapes to be \$762 per ton. Concord and Niagara grapes are used to produce grape juice as well as wine. In this analysis, the portion of Concord and Niagara grapes used for juice were not included. After adjusting for the different varieties used in wine production, we determined total wine grape sales to be \$32.5 million. The RIMS II multipliers provided by the Bureau of Economic Analysis (BEA) were used to determine employment and labor income. The RIMS II data indicates the wine grape industry made an estimated \$7.0 million of payments to their 660 employees.

² 2011 Finger Lakes Grape Price Survey published by Cornell University Cooperative Extension.

New York wineries, in 2011, produced an estimated \$311.7 million of sales from New York grown grapes (locally-sourced). According to NASS, there were 54,000 tons of wine grapes produced in New York in 2011. Assuming each ton produces 150 gallons of wine, there were 8.1 million gallons of wine produced from grapes grown in New York³. At a value of \$86 per gallon (derived from the 2008 NASS study), total sales of wines produced from New York wine grapes was \$311.7 million in 2011. Using industry averages, the RIMS II data estimates the wineries paid \$33.4 million in compensation to their 1,600 employees (table 3-1).

By design, the calculations above represent only a portion of wine produced in New York, as total production (NASS 2008) was 36.1 million gallons in 2008 and the economic contribution estimates are based on 8.1 million gallons of wine. This distinction is because this report focuses on wine produced from grapes grown in New York and does not account for the significant quantity of wine produced from grapes imported into New York from other states and regions.

Finally, New York winery tourists, in 2011, spent \$106.7 million during their visit to wineries producing wines with New York-grown grapes. These expenditures supported 1,360 jobs in New York which in total amounted to \$35.4 million in labor income. See appendix three for a detailed explanation of the calculation of tourist impacts.

Table 3-1: Direct Effects of Wine Grape Vineyards, Locally-Sourced Wineries, and Winery Tourists, New York, 2011			
	Wine Grape Vineyards	Locally-Sourced Wineries	Winery Tourists
Output	\$32,500,000	\$311,700,000	\$106,700,000
Employment	660	1,600	1,360
Labor Income	\$7,000,000	\$33,400,000	\$84,100,000
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) input-output model 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.

³ The authors acknowledge this is an oversimplification, as not all wine grapes grown in New York are used in wine produced in New York. In addition, some wine would be put into inventory in any given year. Finally, some grapes may be blended, therefore not necessarily producing 150 gallons per ton. For purposes of this analysis, however, this assumption must be made.

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 locally-sourced winery industries in New York was \$831.2 million. This includes 6,700 jobs and \$172.2 million in labor income, as shown in table 3-2. The figures in table 3-2 do not include wines produced from grapes imported into New York and therefore reflect only a fraction of the winery industry in New York.

Table 3-2: Total Effects of Wine Grape Vineyards, Locally-Sourced Wineries, and Winery Tourists, New York, 2011

	Wine Grape Vineyards	Locally-Sourced Wineries	Winery Tourists	Total
Output	\$54,100,000	\$572,600,000	\$204,500,000	\$831,200,000
Employment	900	3,800	2,000	6,700
Labor Income	\$12,400,000	\$100,200,000	\$59,600,000	\$172,200,000

Estimates by University of Minnesota

Cold-Hardy Related Economic Effects

As mentioned, the New York Statistical Service estimates 5 percent of wine grapes grown in New York are of the cold-hardy varieties. In 2011, cold-hardy grapes contributed \$28.6 million to the output of the state of New York including \$5.0 million in labor income. They contributed 190 jobs, as shown in table 3-2.

Table 3-2: Total Effects of Vineyards, Wineries, and Winery Tourists Derived from Cold-Hardy Grapes, New York, 2011

	Vineyards	Wineries	Winery Tourists	Total
Output	\$3,000,000	\$28,600,000	\$10,200,000	\$41,800,000
Employment	50	190	99	339
Labor Income	\$690,000	\$5,000,000	\$3,000,000	\$8,690,000

Estimates by University of Minnesota

SUMMARY AND CONCLUSIONS

In spring 2012, grape growers and winery owners in 13 states were surveyed under the Northern Grapes Project. Questions asked pertained to sales and production (wineries and vineyards), growing practices (vineyards), and operating practices (wineries). The baseline study focuses on cold-hardy growers and wineries using cold-hardy grapes while the economic impact study focuses on all wine grape growers and wineries in the state.

New York has a long tradition of growing grapes. New York vineyards produce grapes for fresh consumption, for juice, and for wine-making. Wine grapes constitute approximately 28 percent of total grape volume produced in the state whereas juice grapes constitute nearly 70 percent. With its varied climates and soils, regions in New York have been producing traditional wine grape varieties which demonstrate limited production in other Northern Grapes Project states and even within certain regions of New York. The release of cold-hardy grape cultivars has allowed for the expansion of the wine grape growing industry in New York.

Results of the Northern Grapes Project baseline in New York demonstrate growth in the cold-hardy vineyard industry. Over half the responding cold-hardy vineyards were established in the years since 2007. Established vineyards report they have expanded. Survey results indicate this growth will continue, as 70 percent of vineyards plan to expand. The popularity of the Marquette grape, a cold-hardy red cultivar, may drive some of the vineyard growth. Released in 2006, the Marquette grape now comprises more than half of all the red cold-hardy plantings in New York. Cold-hardy wine grape vineyard growth may be hampered by diseases and the cost of labor. Vineyards report those two items as the biggest challenges to the potential growth and development of their cold-hardy operation.

Wineries using cold-hardy grapes in production are also showing growth. New York cold-hardy wineries are more likely to operate a tasting room than their peers in other states. They are also leveraging opportunities to sell through distributors and liquor stores at higher rates. Cold-hardy wineries in New York also demonstrate a higher willingness to collaborate. They put a higher emphasis on the importance of regional branding initiatives and on collaborations with local organizations and other wineries. Despite this, New York cold-hardy wineries still believe their own wine branding is the most critical marketing activity. Cold-hardy wineries report sales and government policies and regulations are the biggest challenges to the potential growth and development of their wineries.

In 2011, the wine grape growing and locally-sourced winery industries contributed \$831.2 million to the New York State economy, including 6,700 jobs and \$172.2 million in labor income. Wine grape vineyards contributed \$54.1 million, locally-sourced wineries \$572.6 million, and winery tourists \$204.5 million.

By design, this represents only a portion of the total economic impact. Wineries included in this report (those producing wines from grapes grown in New York) produced 8.3 million gallons of wine. *This represents only a portion of wine produced in New York, as total production (NASS 2008) was 36.1 million gallons in 2008.* Total production of wine in New York includes wines produced from grapes imported into New York specifically for wine production.

For our purposes, we wanted to estimate the relative contribution of locally-grown cold hardy grapes and wineries to winery sales from grapes sourced in New York. Using this more limited metric, cold-hardy grapes contributed a fraction of the wine grape growing and winery industries' output and employment in New York, accounting for \$28.6 million in sales, 190 jobs, and \$5.0 million in labor income.

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.

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

St. Pepin

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 New York was derived from the 2008 National Agricultural Statistic Service (NASS) report on 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 the winery. Finally, the number of winery tourists was adjusted to reflect that many winery tourists stop at more than one winery during their trip. In fact, the average number of wineries visited is 2.

With the number of winery tourists quantified, researchers need to apply an average spending profile to determine total spending by winery tourists. In New York, the spending profiles from a 2009 profile of tourists in Tompkins County, which is in the heart of the Finger Lakes Region, a wine grape growing region were used. Total per person spending was estimated at \$130 per day.

APPENDIX FOUR: REFERENCES

Chmura Economics and Analytics. "Profile of Visitors to Tompkins County". April 2010.

National Agricultural Statistics Service: New York Field Office. "Fruit Report: March 2012".

National Agricultural Statistics Service: New York Field Office. "New York Winery Survey 2008". October 2009.

Cornell University Cooperative Extension. "2011 Finger Lakes Grape Price Survey."