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Vineyards and Wineries in the New England States

A STATUS AND ECONOMIC CONTRIBUTION REPORT

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**

Vineyards and Wineries in the New England States

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May 2014

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Partners/Sponsors:

Northern Grapes Project

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NORTHERN GRAPES PROJECT

The emergence of cold hardy wine grape cultivars (primarily *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 the participating New England states. These states are: Connecticut, Maine, Massachusetts, New Hampshire, and Vermont. This report also quantifies the economic contribution of the industries. The New England states are included together in this report given the smaller size and scale of the industry in the individual states. Individual state reports would not have contained enough survey responses to publish therefore; these geographically similar states are combined into a single report.

VINEYARDS AND WINERIES IN THE NEW ENGLAND STATES: 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 industries. This report presents the results for the participating New England states of Connecticut, Maine, Massachusetts, New Hampshire, and Vermont.
- In 2011, the total economic contribution of the grape growing and winery industries in the participating New England states was \$70.1 million. This includes 3,260 jobs and \$36.7 million in labor income. Vineyards contributed \$8.2 million to the total, wineries \$38.6 million, and winery tourists \$23.3 million.
- Cold-hardy grapes contributed \$37.3 million in economic activity to the economy of the participating New England states in 2011. Cold-hardy grape varieties were responsible for the creation of 1,710 jobs and \$19.5 million in labor income.
- Growth in the vineyard industry in the participating New England states is demonstrating signs of slowing down, but still growing at a modest rate. Between 2002 and 2007, 42 percent of the responding vineyards were established. In the five year period following, 32 percent of vineyards were founded. Current vineyards plan, on average, to grow, but 36 percent plan to maintain their current size.
- Vineyard operators report the biggest challenges to the future growth and development of their vineyard are pests/insects and disease. The Marquette grape, released in 2006, is being adopted at a modest pace in the New England states.
- The winery industry in the participating New England states also shows signs of growth, with few signs that growth may be tapering off. Forty-three percent of wineries were founded between 2007 and 2012, a rate that is higher than the five year period preceding it. When asked about future plans, 91 percent of current wineries indicated they plan to expand in the next five years.
- As wineries expand, the challenges they face include government policies and regulations and sales. Wineries in New England are more likely to use distributors, wholesalers, and liquor stores to sell their wine than their counterparts in other states. There may be room to increase sales through other distribution channels.
- Wineries in the New England states are primarily located in rural areas and small towns. They rely on winery visitors for roughly one-third of their sales, yet collaboration with other tourism-related entities is relatively low. There may be opportunity to increase efforts to work together to increase winery sales. Winery owners report wine trails are important to the success of their wineries.



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 on 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.

The Connecticut Vineyard and Winery Association, Lake Champlain Wines, Massachusetts Farm Wineries and Growers Association, New Hampshire Winery Association, and the Vermont Grape and Wine Council each provided e-mail addresses for their memberships. In total, 158 invitations to participate in the survey were sent to potential growers and wineries in the New England states. Of those, 47 individuals responded, for a response rate of 30 percent.

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.

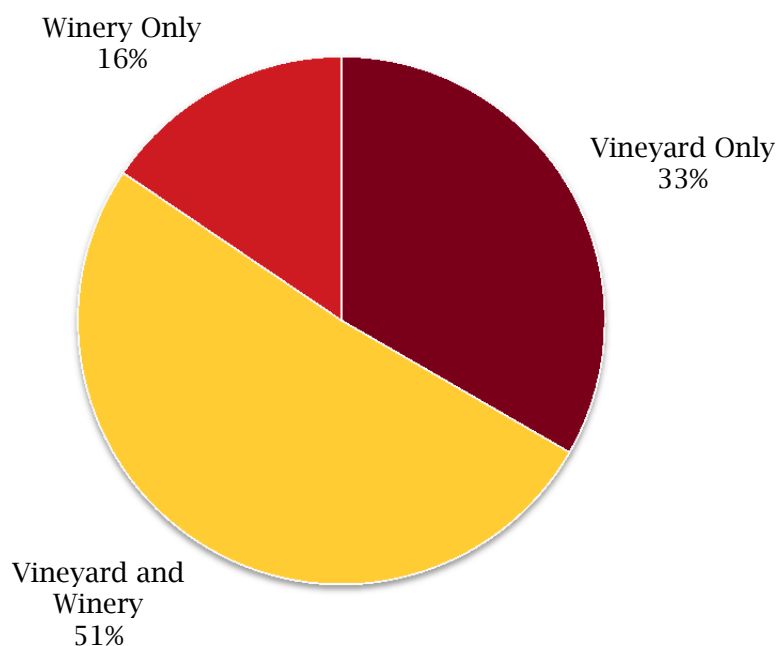
The first survey question asked “Are you associated with....1) a vineyard (past, present, or future), 2) a winery, 3) both, or 4) other. Those responding “other” were directed to the end of the survey.

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). One-third (33 percent) of survey respondents in the New England states operate a vineyard only. Approximately half (51 percent) operate a joint vineyard and winery operation. Sixteen percent operate a stand-alone winery. In total, the survey includes 30 wineries and 31 vineyards.

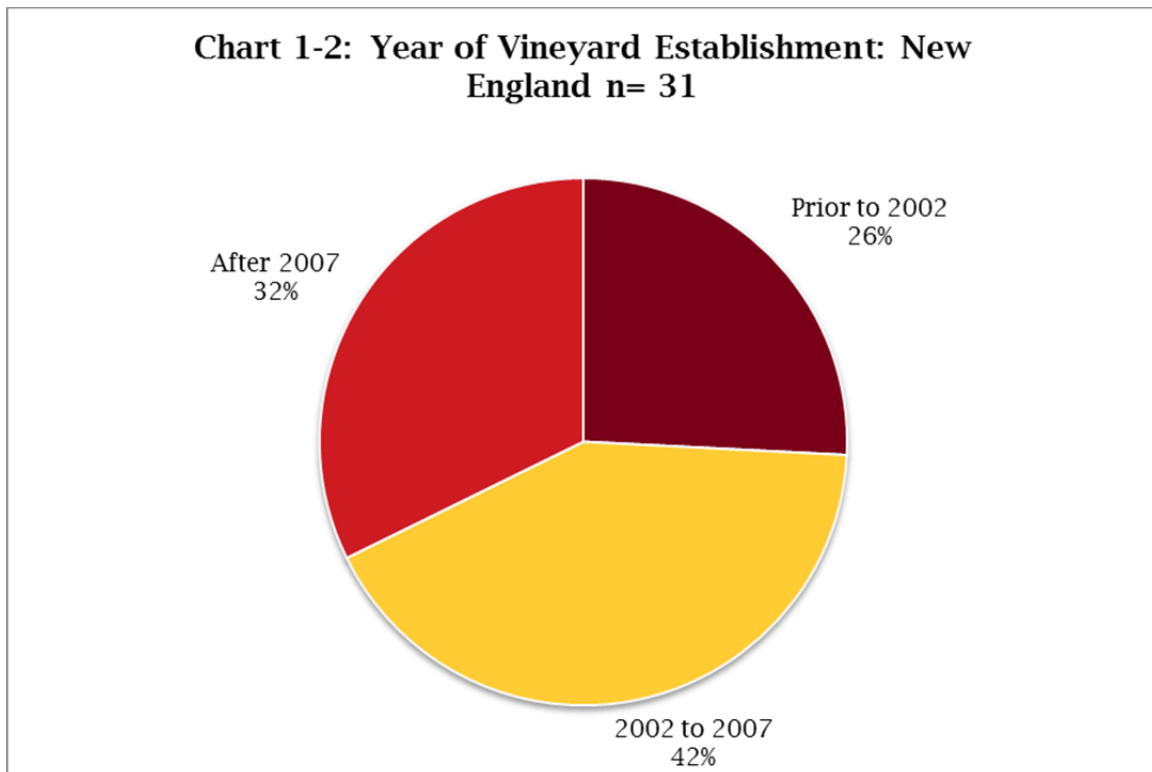
Chart 1-1: Are You Associated With? New England States



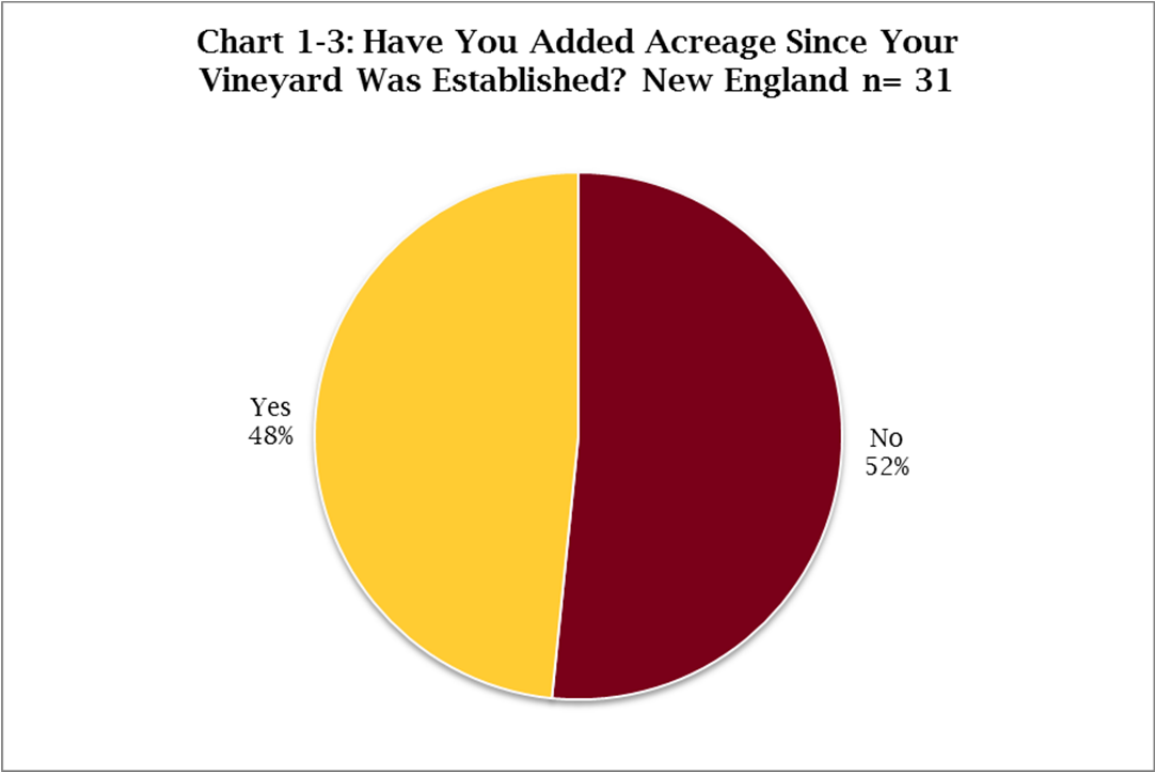
VINEYARD CHARACTERISTICS

Thirty-one respondents indicated they owned and operated a vineyard in one of the participating New England states. The National Agricultural Statistics Service reports 365 vineyards in the states. Therefore, the response rate for this study is 8 percent.

The Northern Grapes Project baseline survey results reinforce the observed trend of rapid growth in the grape growing industry in the participating New England states (see chart 1-2). One quarter of vineyards were established prior to 2006. Since 2007, one-third of vineyards have been established. The chart demonstrates growth over time in the industry, but might indicate a decline in the rate of that growth.

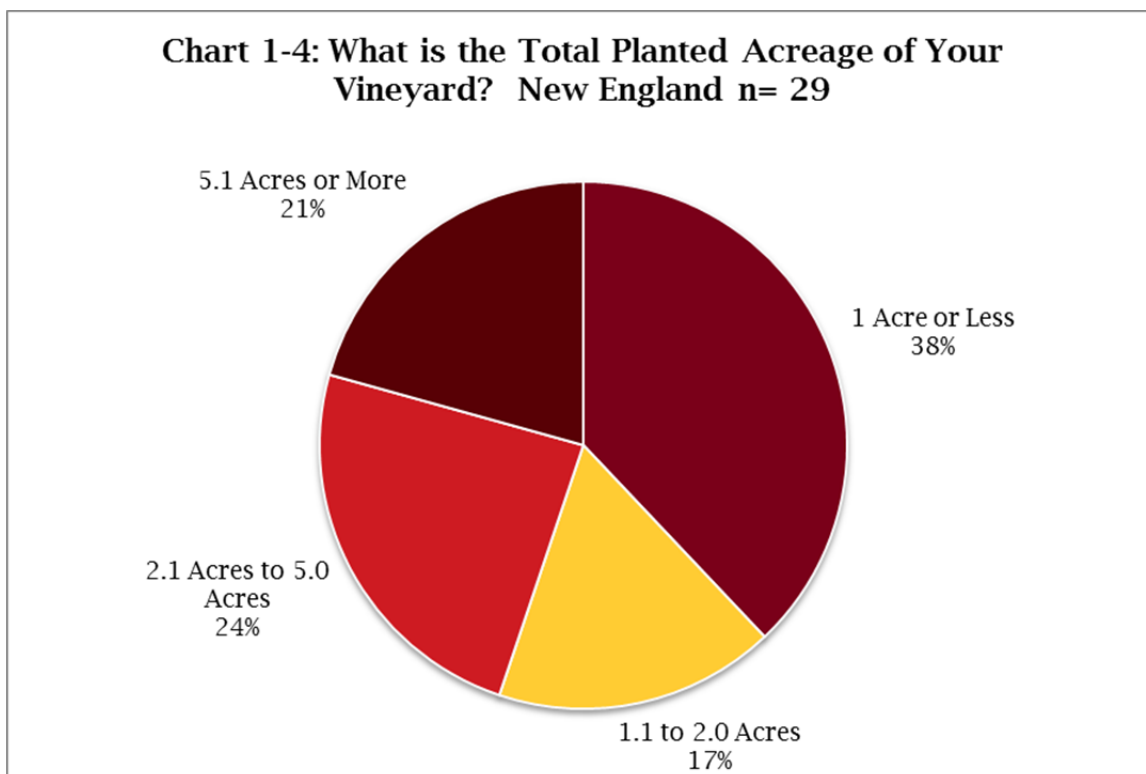


In addition to new vineyards being established, current vineyards continue to expand their planted acreage. Forty-eight percent of responding vineyards indicated they had planted additional acreage since the original founding of their vineyard (see chart 1-3).



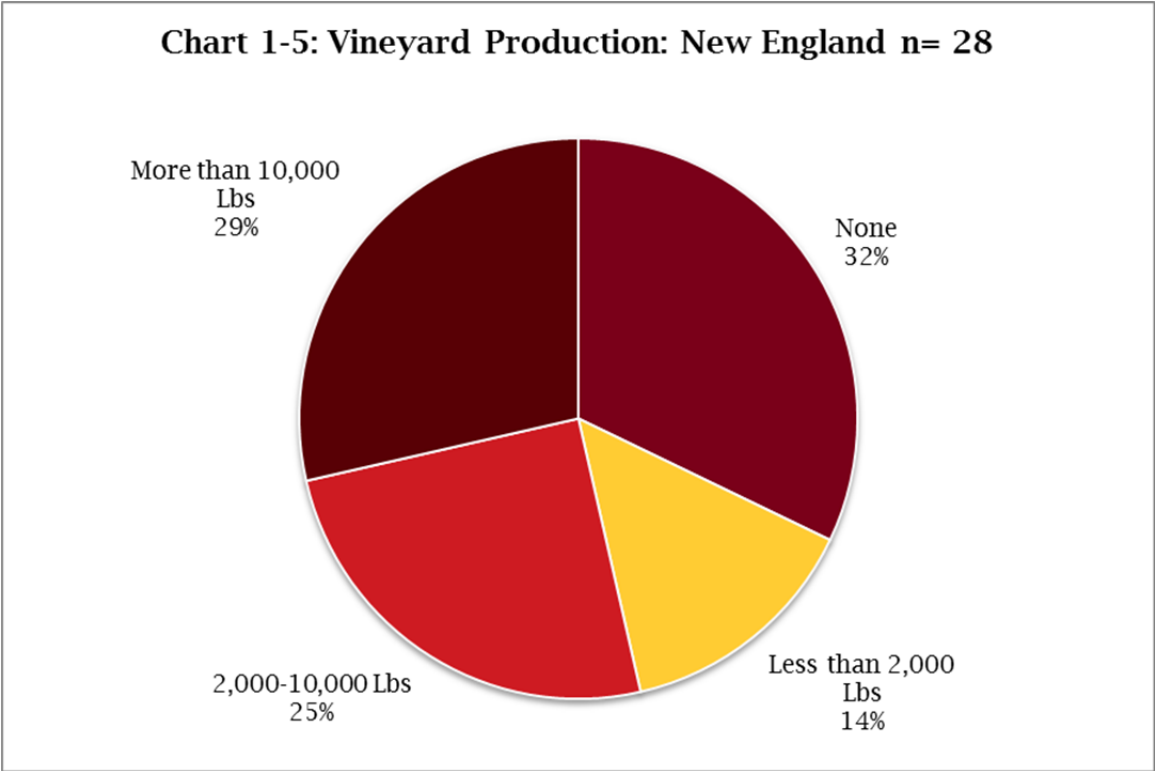
Vineyards in the New England states average 3.8 acres in size. Just over one-third of vineyards are less than 1 acre in planted size (see chart 1-4). Approximately one-quarter of the vineyards are in the size range of 2.1 to 5.0 acres and 5.1 acres or greater.

Our survey results, extrapolated out to the entire population of vineyards, indicate there are 1,390 acres planted in grape vines in the participating New England states. Survey results show that 55 percent, or 760 acres, of the planted vines are of the cold-hardy varieties defined in this study. The varieties classified as “cold-hardy” for purposes of this report are listed in appendix two.

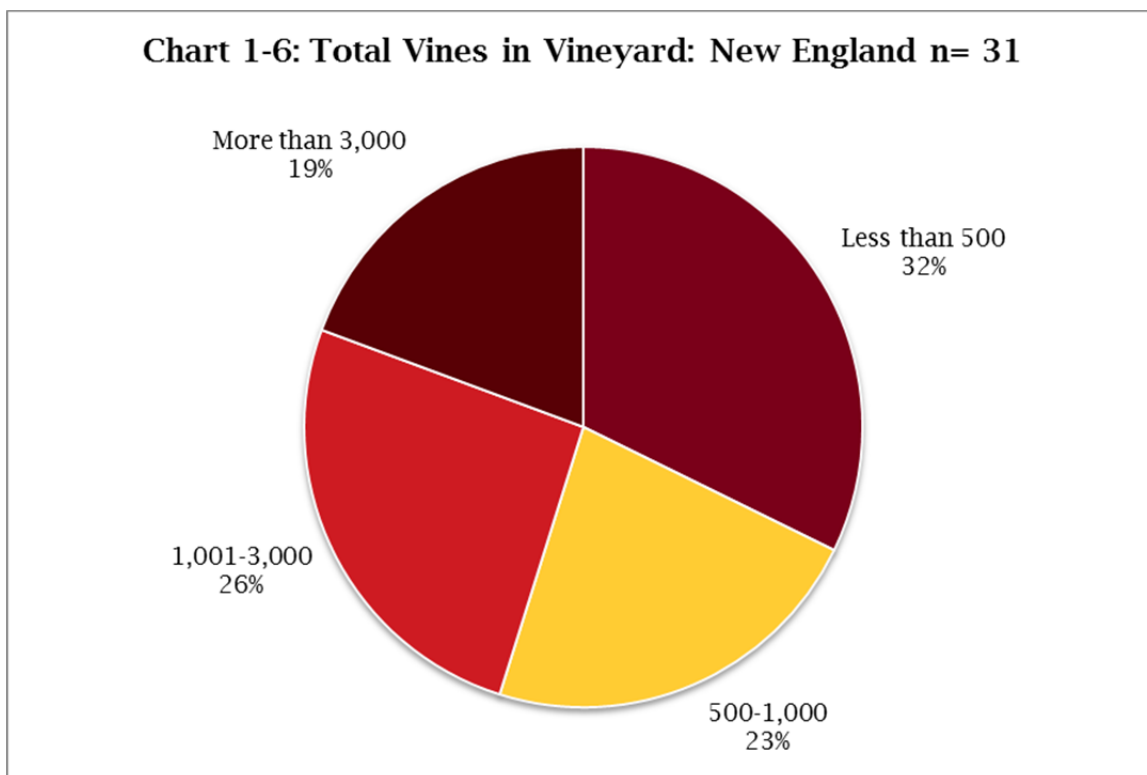


Vineyard production reflects the age of vineyards and the size of vineyards in the survey population (see chart 1-5). Thirty-two percent of the vineyards surveyed indicated they did not produce any fruit in 2011. As depicted in chart 1-2, 32 percent of vineyards were planted after 2007, which means they likely have not reached maturity yet. Therefore, it is not surprising they have not produced harvestable fruit.

Survey results, extrapolated to represent all growers in the participating states, reveal New England grape growers produced approximately 2,880 tons of fruit in 2011. Average yield on producing acreage was 2.1 tons per acre. This yield is lower than expected. One reason for lower yields could be due to the number of relatively new vineyards. Nearly one-third of the vineyards were established after 2007, which means they have not yet reached full maturity and production. Several growers also reported weather and insect damage to their crop.

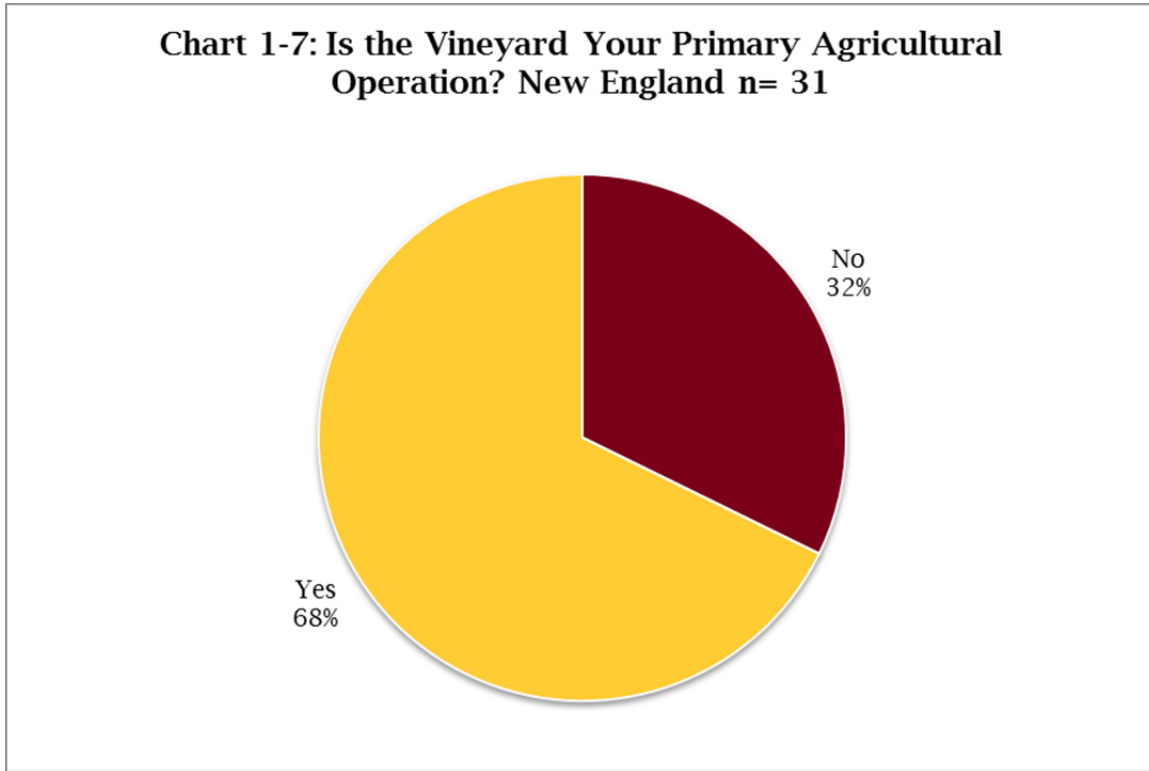


The average participating vineyard has 2,290 planted vines. Thirty-two percent of vineyards have less than 500 vines in the ground and 26 percent have 1,001 to 3,000 vines in the ground, (see chart 1-6).



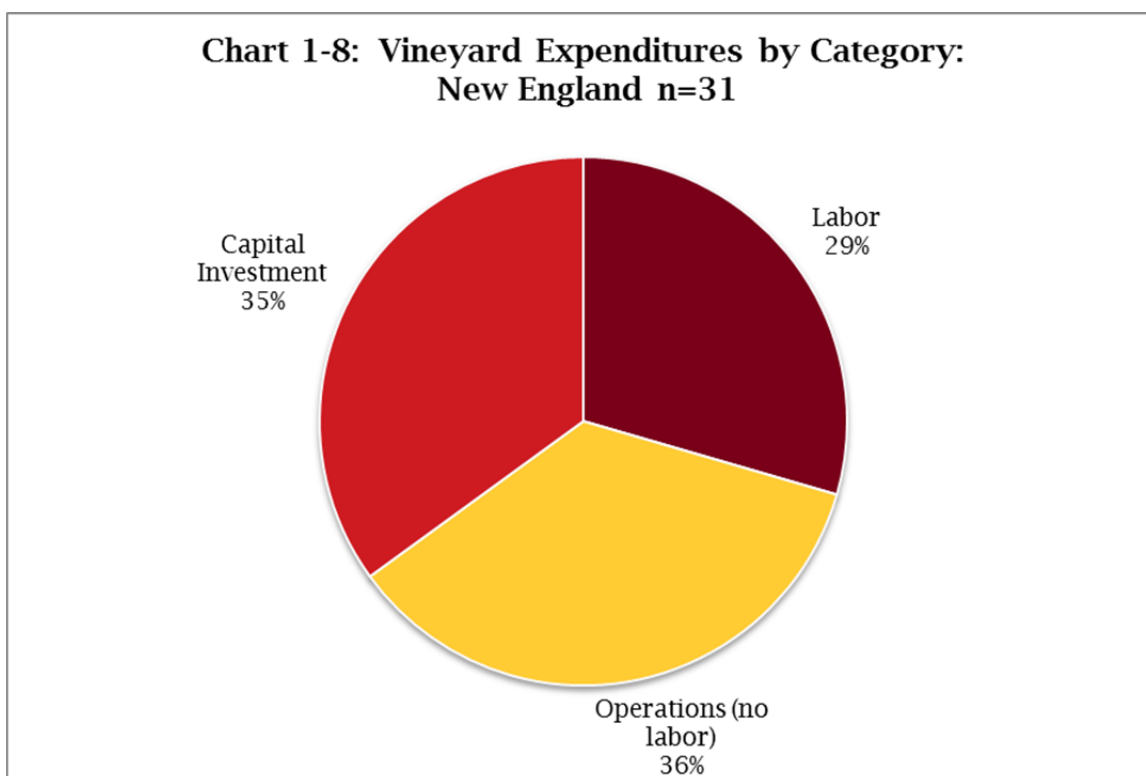
Vineyard Operations

New England vineyards primarily operate as stand-alone agriculture enterprises (see chart 1-7). One-third of the vineyards are a secondary agricultural operation for owners. When asked to describe their primary agriculture operation, several respondents mentioned fruit and berry operations. Two of the vineyards are operated as commercial nurseries.

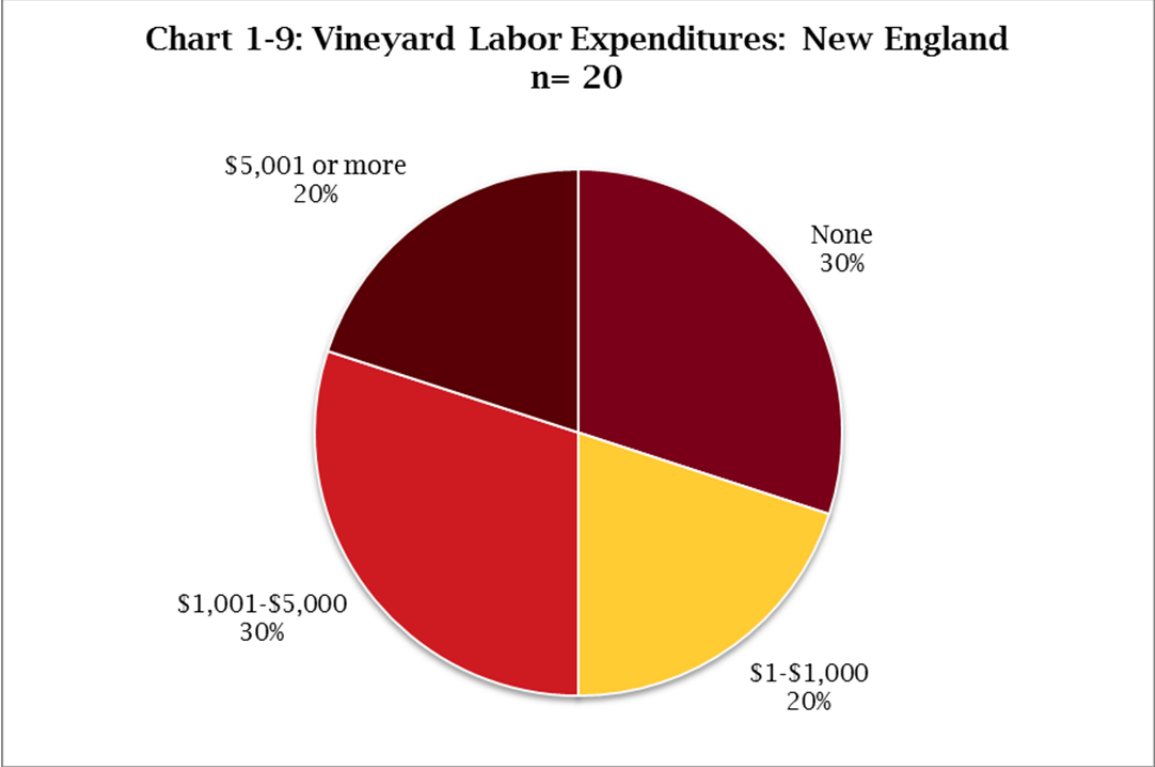


The average responding vineyard in the participating New England states spent \$13,230 to operate in 2011. Of these, vineyards made \$8,600 of expenditures for operations (including \$3,900 in labor payments) in 2011. Operating expenses include fertilizers, fungicides, cover crops, water, fuel, overhead costs, marketing, and taxes. Responding vineyards also spent an average of \$4,630 on capital investments, including trellis systems, tractors, crushers, pick-ups, ATV's, and other equipment.

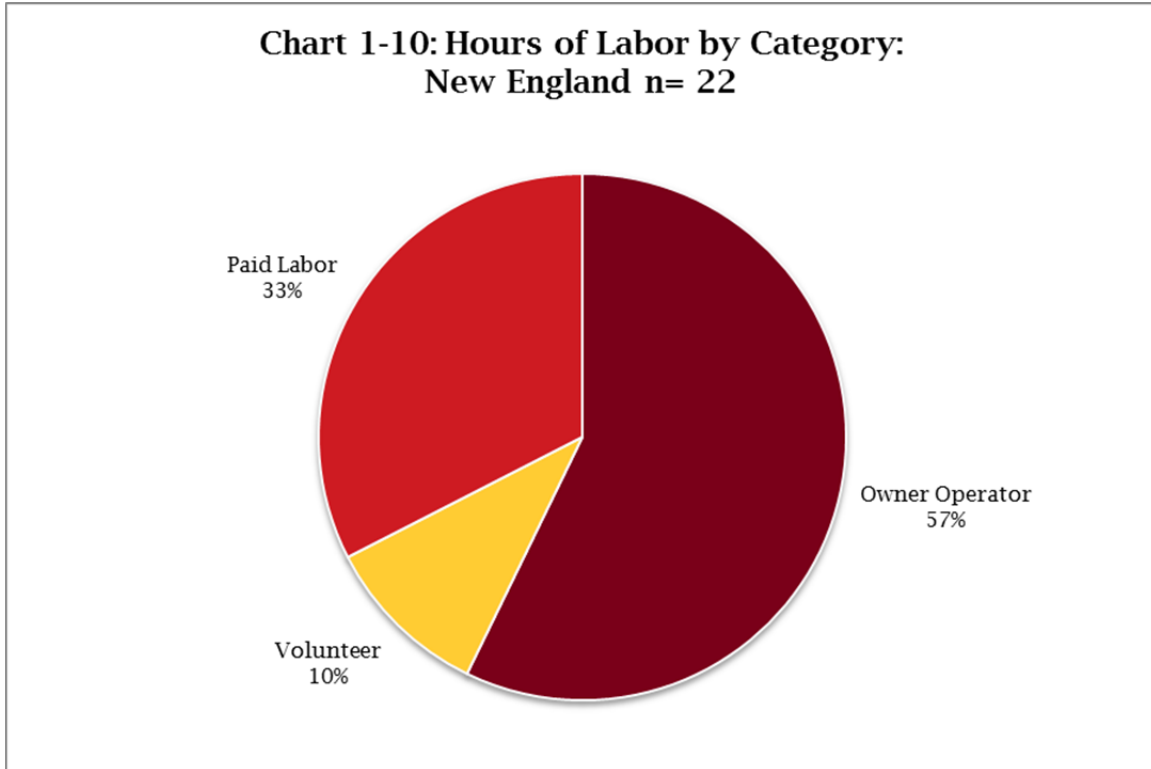
In total, vineyards in New England spent \$4.8 million in 2011. Of this, \$3.1 million was spent on operating expenses (includes labor) and \$1.7 million on capital expenditures. Vineyards spent \$1.4 million of the total operating costs on labor expenditures (see chart 1-8). Thirty-five percent of a New England vineyard's annual expenditures were spent on capital investments, 29 percent on labor, and 36 percent on operations.



Of the 20 vineyards that responded to the detailed questions regarding labor expenditures, 30 percent reported no expenditures for labor (see 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.

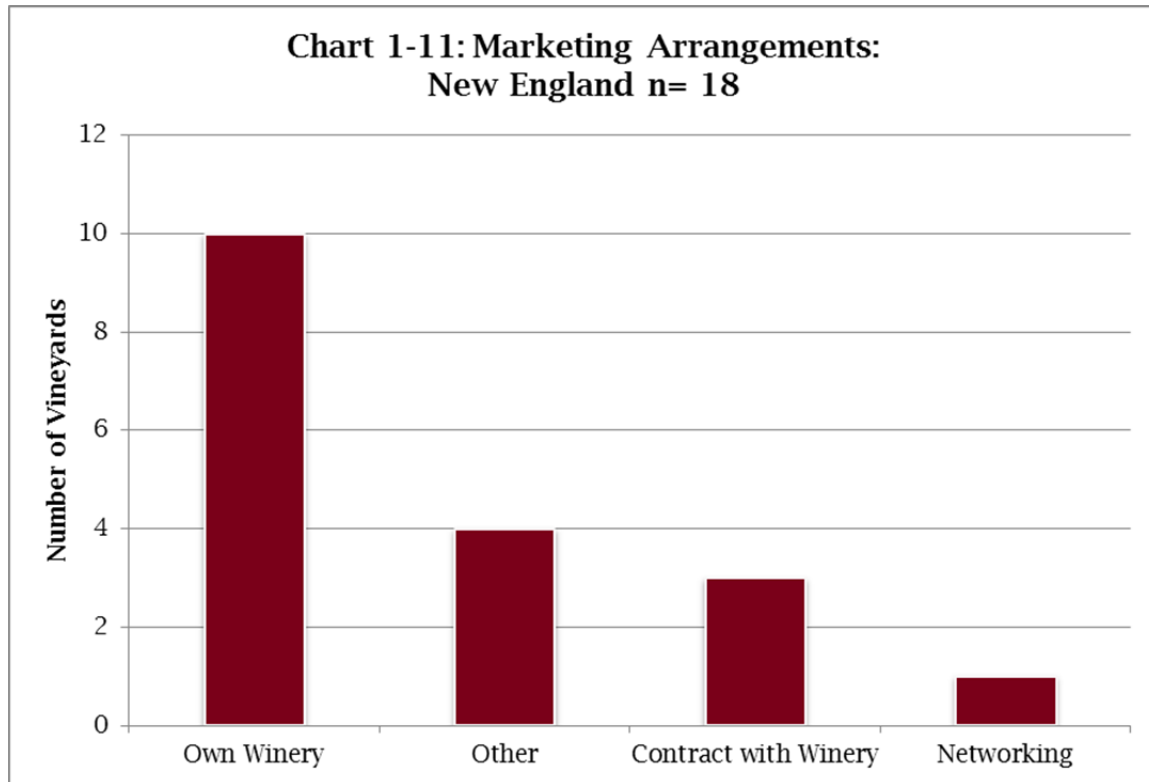


As shown in chart 1-10, the majority of labor for the responding vineyards was provided by the owner/operator (57 percent). Thirty-three percent of labor was supplied by paid employees. Ten percent of labor was provided by volunteers.

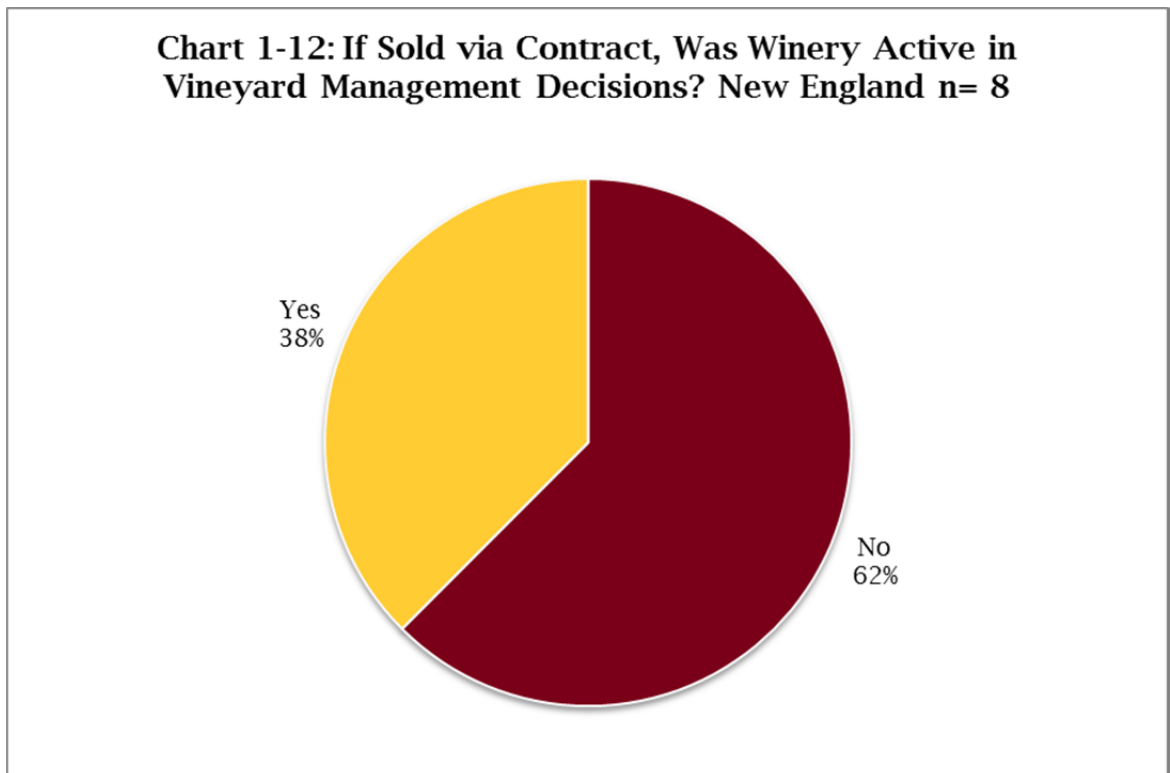


Marketing and Grape Utilization

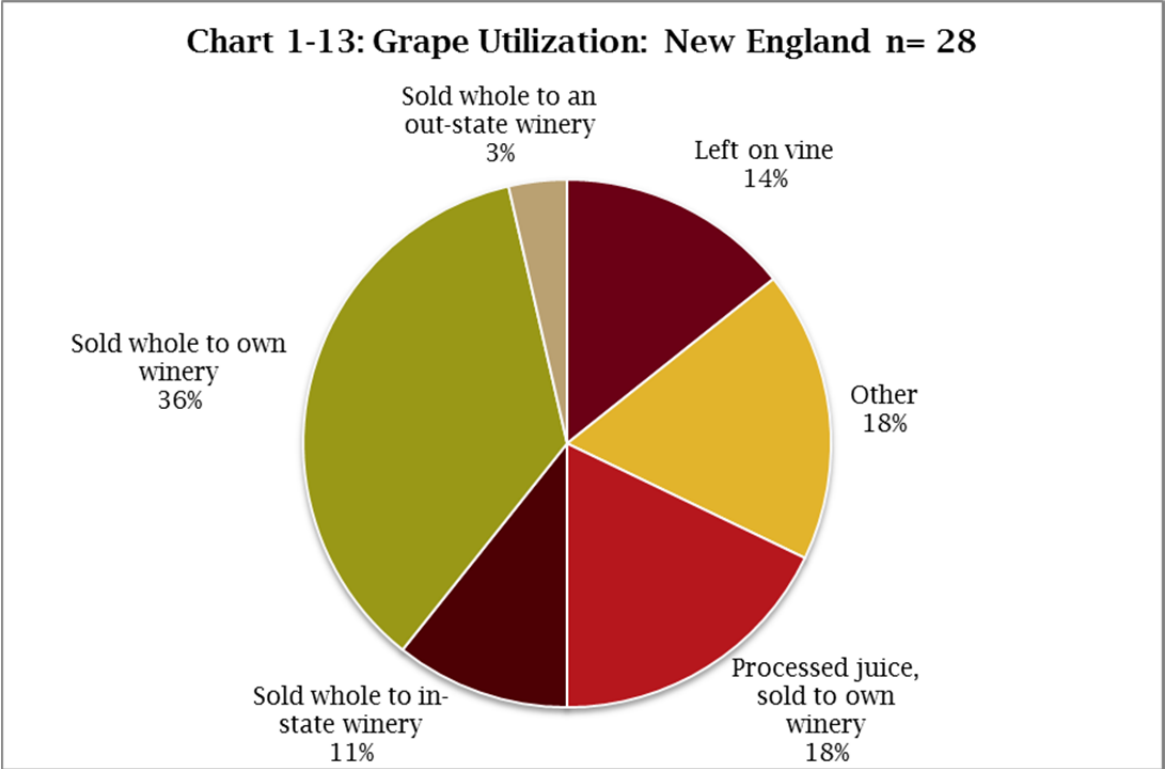
Grape growers were asked which market arrangements they used to sell their grapes (see chart 1-11). They could select more than one choice. The most commonly used method, selected by 10 growers each, was to sell to their own winery. No growers indicated using a broker to sell their grapes.



Less than half of growers that contract with wineries to market their grapes are interacting with the winery to make management decisions (see chart 1-12).

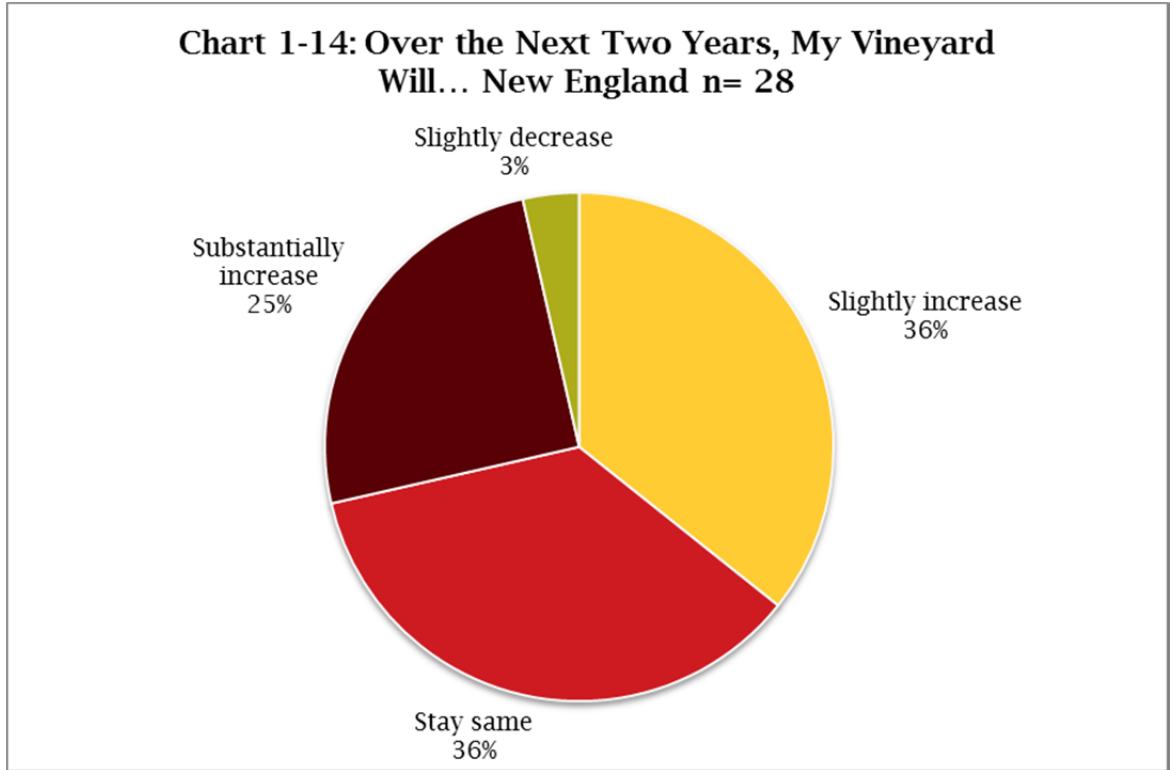


The most common arrangement for responding vineyards is to sell their grapes in a whole berry format (see chart 1-13). Fifty percent of vineyards sold their grapes as whole berries to their own winery, to an in-state winery, or to an out-state winery. This reinforces the knowledge that grape growing and wineries are often local operations, working and contributing to the communities in which they are located. "Other" uses included personal use or a lack of harvest. The New England vineyards are more likely to process their grapes into juice than their counterparts in other Northern Grapes project states. The resulting juice could be used for wine or for other purposes.

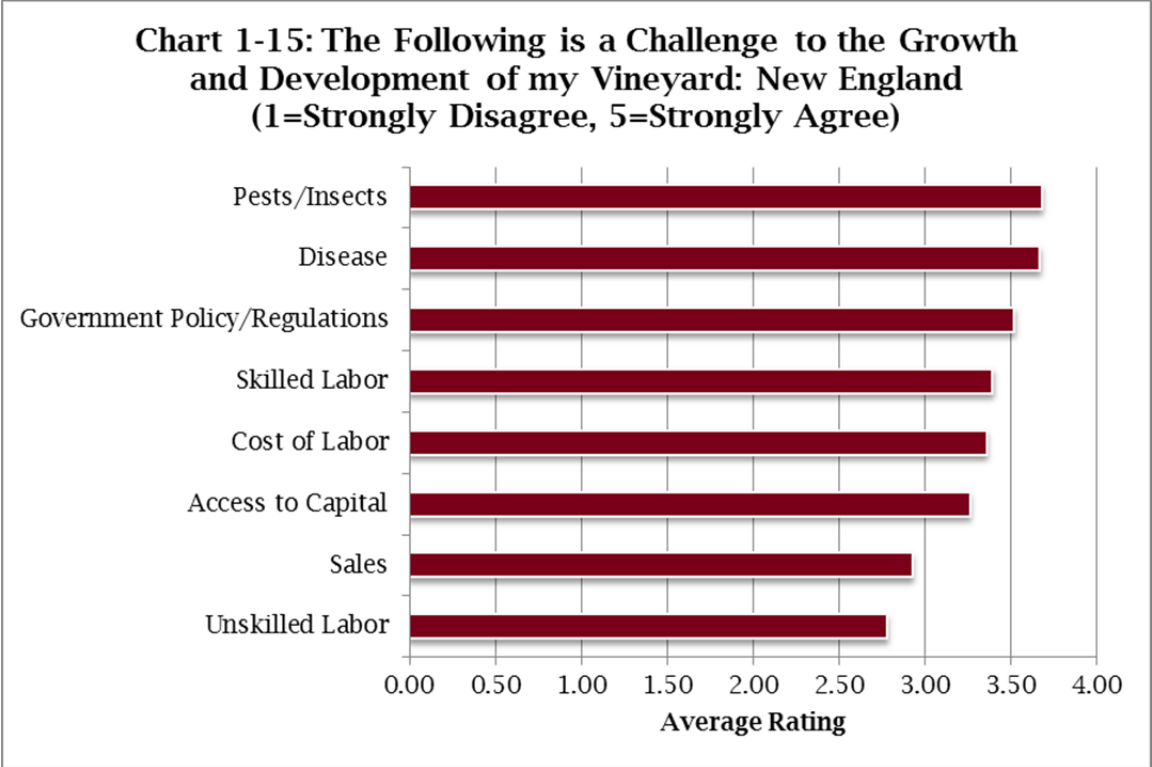


Future Plans

As discussed earlier, the growth in the number of vineyards appears to be tapering off slightly in the participating New England states. The trend for current vineyard owners appears to be somewhat mixed. Sixty-one percent of responding vineyards plan to expand in the next two years, thirty-six of them slightly. Thirty-six percent of vineyards plan to remain at their current size while three percent plan to decrease in size (see chart 1-14).



Grape growers responding to the survey indicate that the biggest challenges to their vineyard operations are related to pests/insects and disease (see 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 pests/insects an average score of 3.68 and disease an average score of 3.67. Availability of unskilled labor and sales do not seem to be significant issues for the responding growers in the participating New England states.

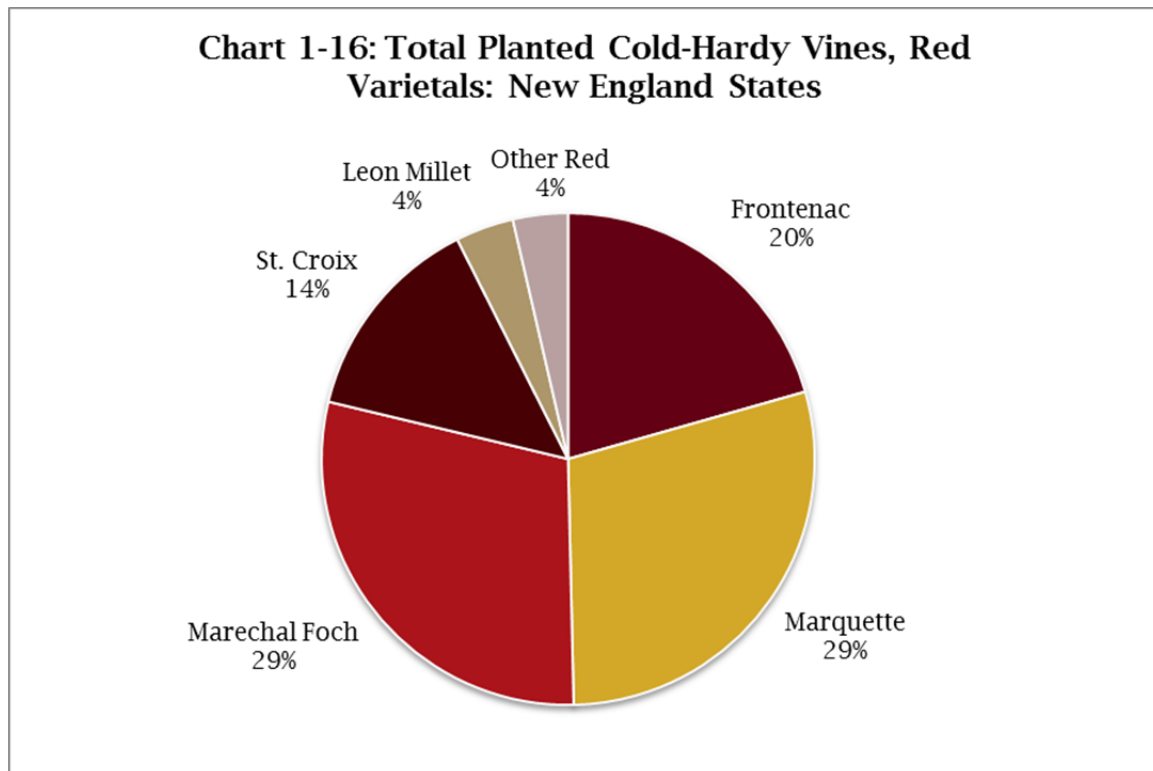


Grape Varieties

Survey participants reported 37,000 planted vines in their vineyards. Of these, 55 percent are planted in cold-hardy varieties. Of the cold-hardy varieties, 15,164 vines are red cultivars. The remaining cold-hardy vines, 5,183, are white cultivars.

Chart 1-16 depicts total reported planted vines of cold-hardy red varieties. Marquette and Marechal Foch grapes comprise 29 percent each of the total planted cold-hardy red varieties. Frontenac grapes comprise 20 percent of red cold-hardy plantings. The Marquette grape was released in 2006. It appears New England vineyards are adopting the new variety.

Table 1-2 reports the number of reported planted red cultivar vines by age. These figures represent only what the vineyards who answered the survey reported. Responding vineyards reported 3,888 red cultivar vines are older than 10 years of age, 7,564 are between 4 years and 10 years of age, and 3,717 are younger than 4 years old. Vines younger than 4 years of age have yet to reach maturity and produce a full crop. Vineyards in the New England states appear to be continuing to plant red cold-hardy grapes, but at slower rates. The question is whether this rate of adoption continues to taper off.



Further, the table reflects the fairly rapid adoption of the Marquette grape variety. Ten years ago, there were no commercially obtained Marquette vines in the ground. Within the last four years, the responding vineyards alone report planting over 2,000 vines.

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

Variety	Vines, Younger than 4	Vines, Between 4 and 10 Years	Vines, Older than 10	Total
Baltica	0	0	0	0
Beta	0	200	0	200
Frontenac	603	2,469	0	3,072
GR-7	0	0	0	0
King of the North	0	205	0	205
Leon Millet	190	230	150	570
Marechal Foch	170	440	3,730	4,340
Marquette	2,041	2,287	3	4,331
Petite Pearl	250	0	0	250
Sabrevois	70	60	0	130
St. Croix	393	1,668	0	2,061
Valiant	0	5	0	5
Other Red	0	0	0	0
Total	3,717	7,564	3,883	15,164

The totals in this table are for RESPONDING vineyards ONLY and do not represent the total industry in participating New England States.

Table 1-3 lists the estimated number of planted acres of cold-hardy red cultivars in the participating New England states. These numbers have been extrapolated to represent all vineyards in the New England states. In the participating states, there are an estimated 295 acres of grapes planted in cold-hardy red varieties. The Marechal Foch and Marquette grape is planted on 84 of those acres respectively.

Table 1-3: <u>Estimated Planted Acres of Cold-Hardy Red Varieties for All Vineyards in New England States</u>	
Variety	Total
Baltica	0.0
Beta	3.9
Frontenac	59.8
GR-7	0.0
King of the North	4.0
Leon Millet	11.1
Marechal Foch	84.5
Marquette	84.3
Petite Pearl	4.9
Sabrevois	2.5
St. Croix	40.1
Valiant	0.1
Other Red	0.0
Total	295.1
The totals in this table have been extrapolated to represent ALL vineyards in the participating New England states.	

Chart 1-17 illustrates the total planted vines of cold-hardy white varieties. Frontenac gris (43 percent) and La Crescent (30 percent) are the most commonly planted vines by the reporting vineyards.

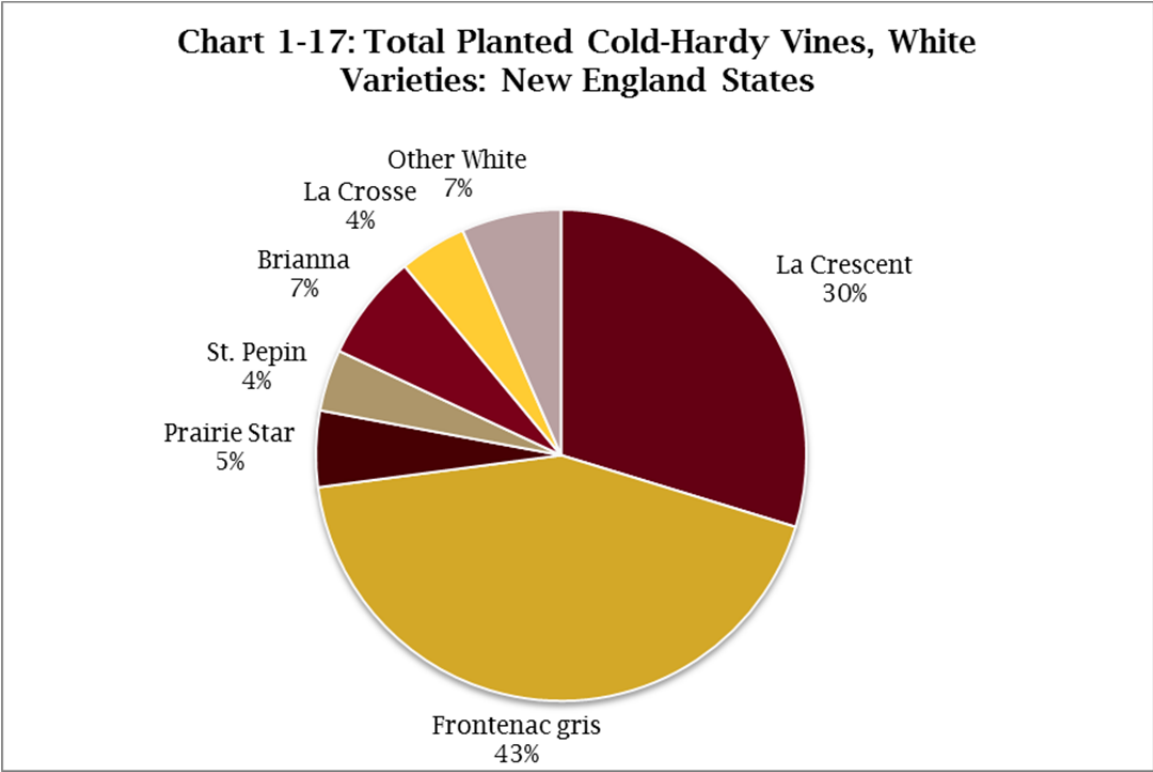


Table 1-4 reports the total reported planted vines of cold-hardy white cultivars. These figures represent only what the vineyards who answered the survey reported. Responding vineyards report 4 vines older than 10 years in the ground, 3,646 vines of age between 4 and 10 years, and 1,533 vines younger than 4 years. Like the red varieties, it appears plantings of cold-hardy white varieties have begun to taper.

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

Variety	Vines, Younger than 4	Vines, Between 4 and 10 Years	Vines, Older than 10	Total
Brianna	363	0	0	363
Edelweiss	50	27	0	77
Espirit	50	2	0	52
Frontenac Blanc	65	0	0	65
Frontenac Gris	392	1,846	1	2,239
Kay Gray	60	2	0	62
La Crescent	453	1,084	3	1,540
La Crosse	0	230	0	230
Louise Swenson	10	0	0	10
Petite Amie	0	25	0	25
Prairie Star	30	230	0	260
St. Pepin	10	200	0	210
Other White	50	0	0	50
Total	1,533	3,646	4	5,183

The totals in this table are for RESPONDING vineyards ONLY and do not represent the total industry in participating New England states.

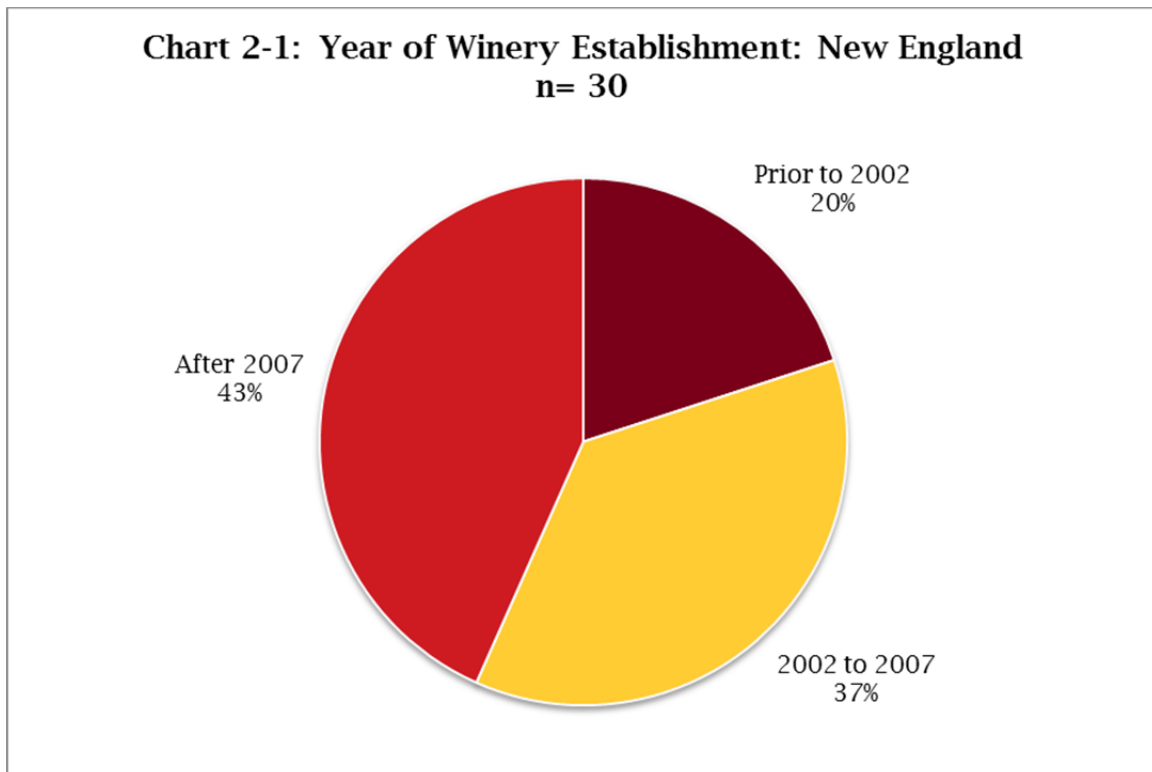
Table 1-5 lists the estimated number of planted acres of cold-hardy white cultivars in New England states. These numbers have been extrapolated to represent all vineyards in the participating New England states. Frontenac Gris is planted on 44 acres and La Crescent on 30 acres.

Table 1-5: <u>Estimated</u> Planted Cold-Hardy Acres of White Varieties for <u>All</u> Vineyards in New England States	
Variety	Total
Brianna	7.1
Edelweiss	1.5
Espirit	1.0
Frontenac Blanc	1.3
Frontenac Gris	43.6
Kay Gray	1.2
La Crescent	30.0
La Crosse	4.5
Louise Swenson	0.2
Petite Amie	0.5
Prairie Star	5.1
St. Pepin	4.1
Other White	1.0
Total	100.9
The totals in this table have been extrapolated to represent ALL vineyards in participating New England states.	

WINERY CHARACTERISTICS

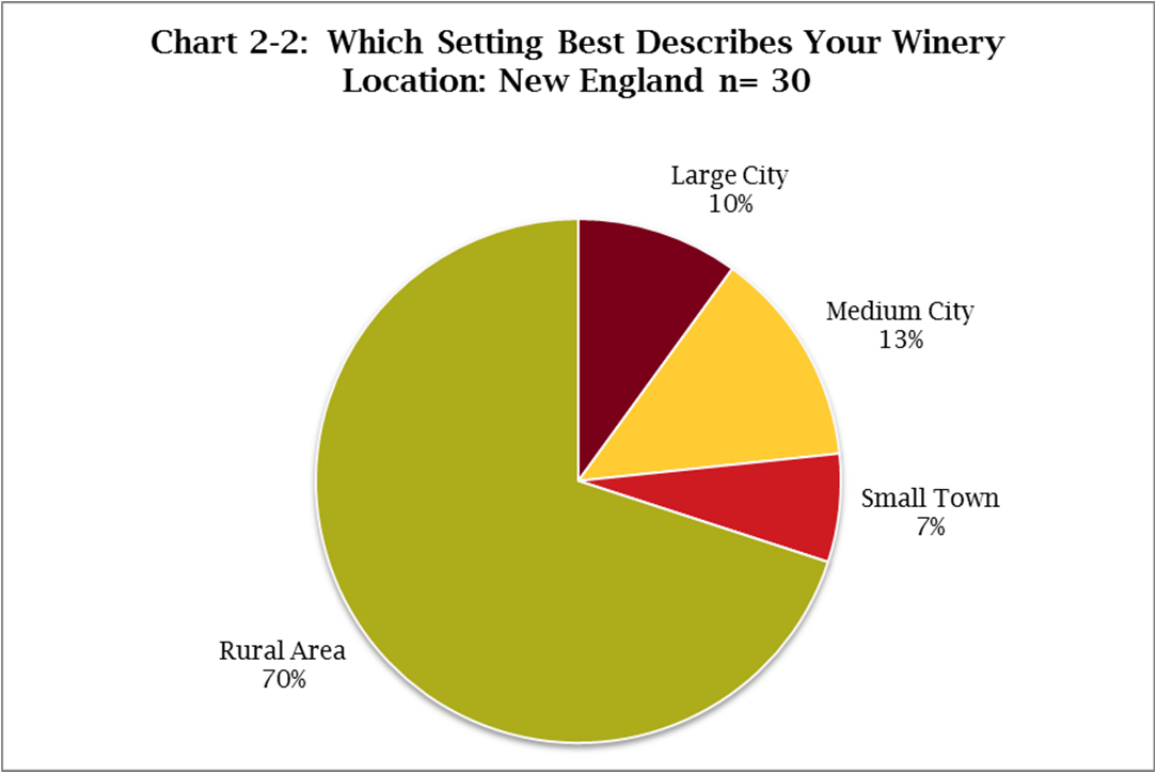
Thirty wineries in the participating New England states responded to the Northern Grapes Project survey. According to the Alcohol and Tobacco Tax and Trade Bureau (TTB), there were 152 licensed wineries in the participating New England states.² Based on these statistics, the response rate for this survey was 20 percent. However, not all respondents reported being licensed at the time of the survey. Our dataset may include new wineries still in the start-up phase.

Growth in the number of wineries in the participating New England states continues (see chart 2-1). Twenty percent of wineries existed prior to 2002. Forty-three percent of wineries have been established since 2007.

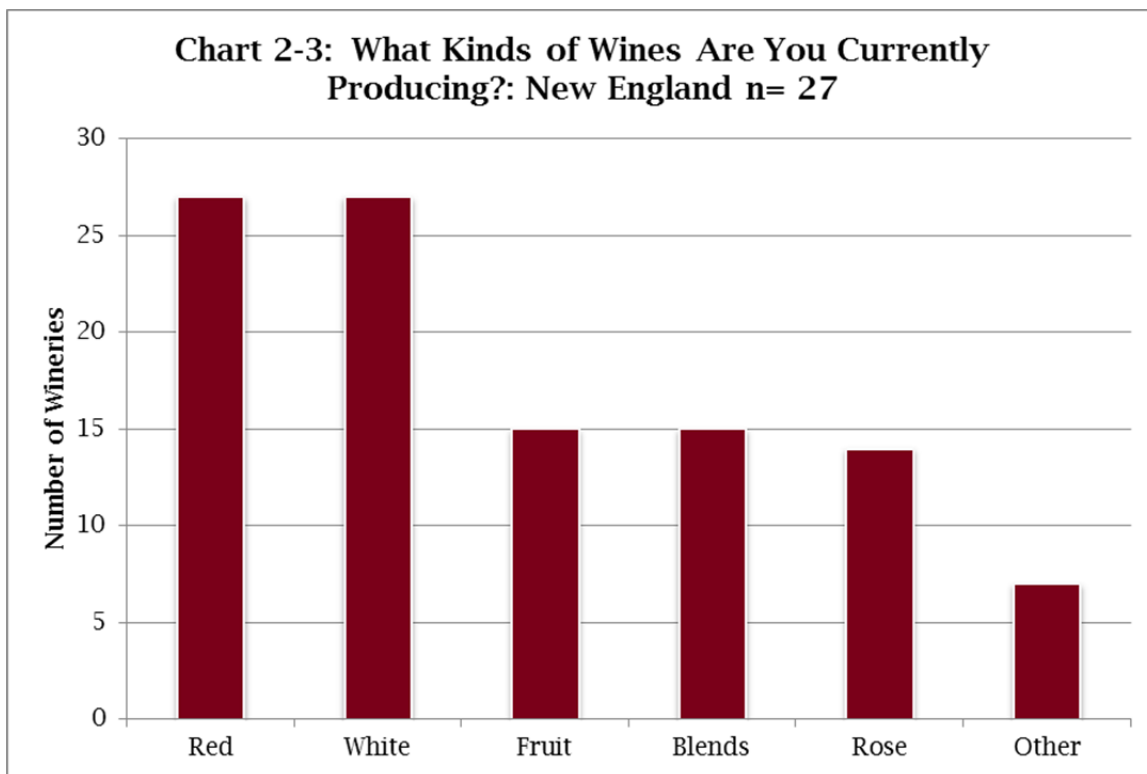


² The number of wineries in each state was taken from a publication by WineAmerica. The publication uses data from the United States Alcohol and Tobacco Trade and Tax Bureau for 2010. This data is the basis of calculations because it provides consistency and uniformity across all states in the Northern Grapes Project study area.

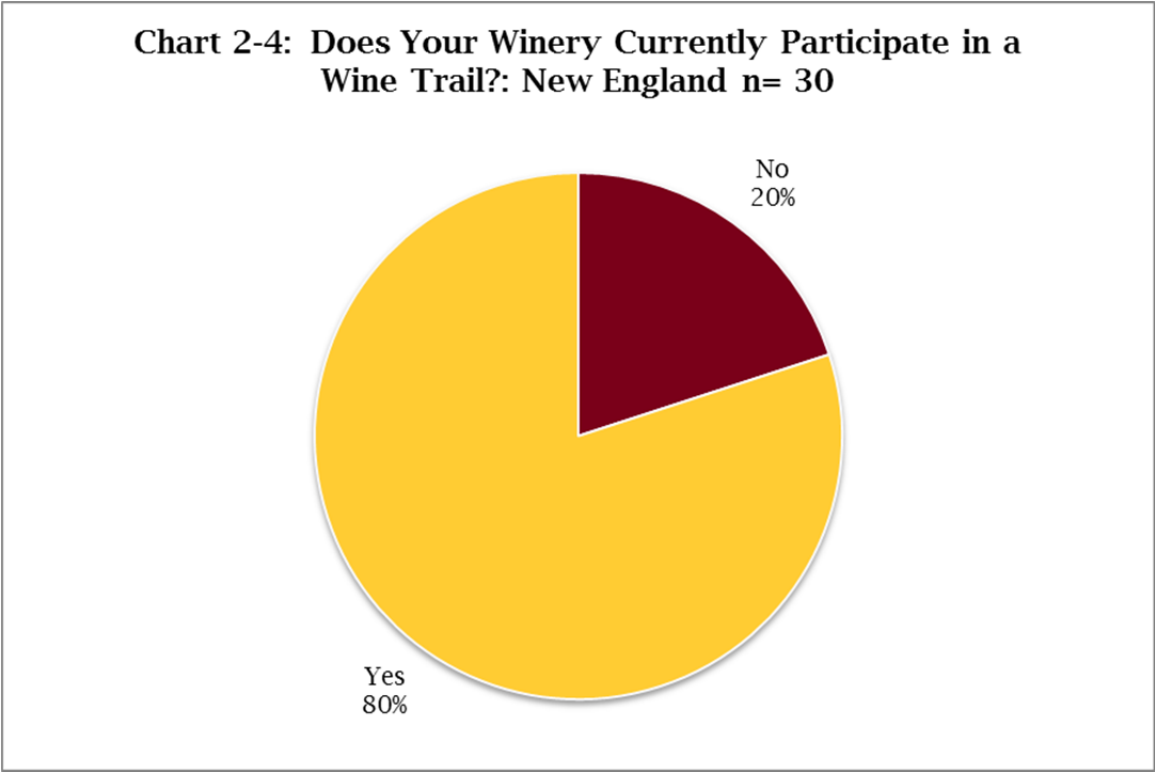
The majority of New England wineries (70 percent) are located in rural areas, outside of cities and urban centers (see chart 2-2). Small town is defined as a city with a population of less than 2,500 residents. A medium city has a population between 2,500 and 20,000. A large city is defined as a city with more than 20,000 residents, but not part of a metropolitan area.



Study results show wineries in the New England states produced 769,900 gallons of wine in 2011 or an average of 5,100 gallons per winery. All the responding wineries from the participating New England states are producing red and white wines (see chart 2-3). Just over half of the wineries are also producing fruit wine and wine blends.

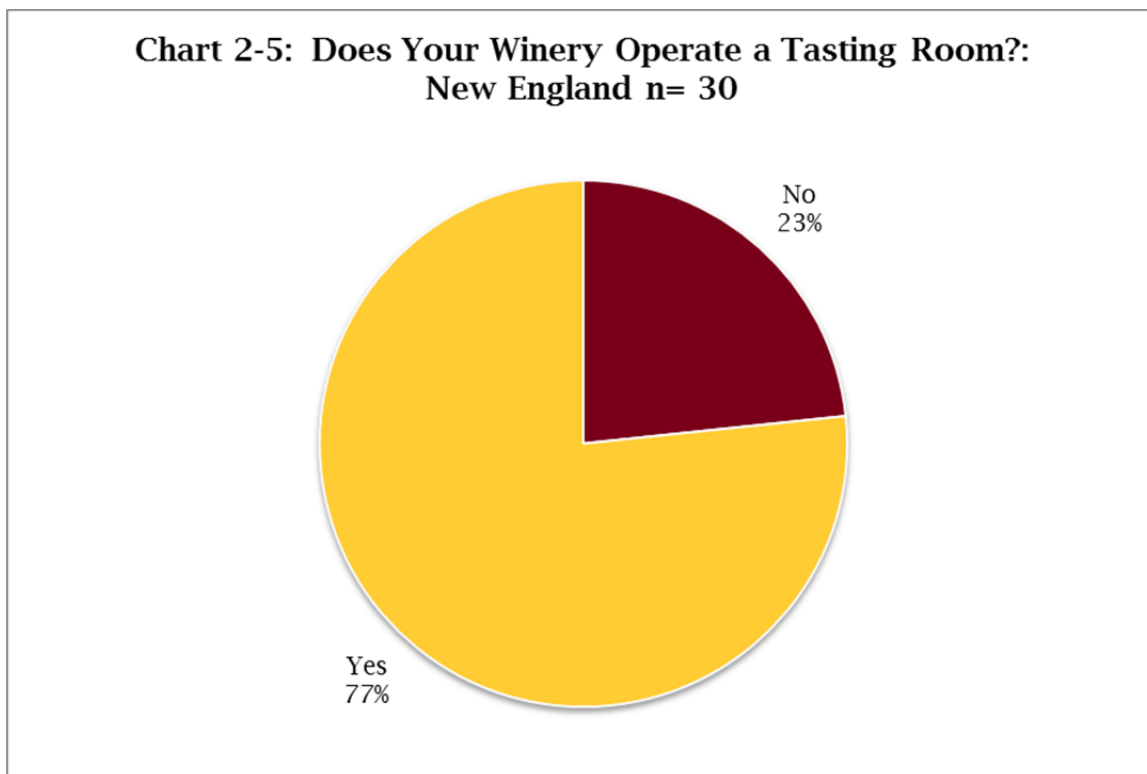


Eighty percent of wineries in the participating New England states currently participate in a wine trail (see chart 2-4). Wine trails are one method wineries use to draw visitors to their tasting room. Since the majority of wineries in the New England states are in rural areas, the need to participate in a wine trail may be higher to increase visitation rates.

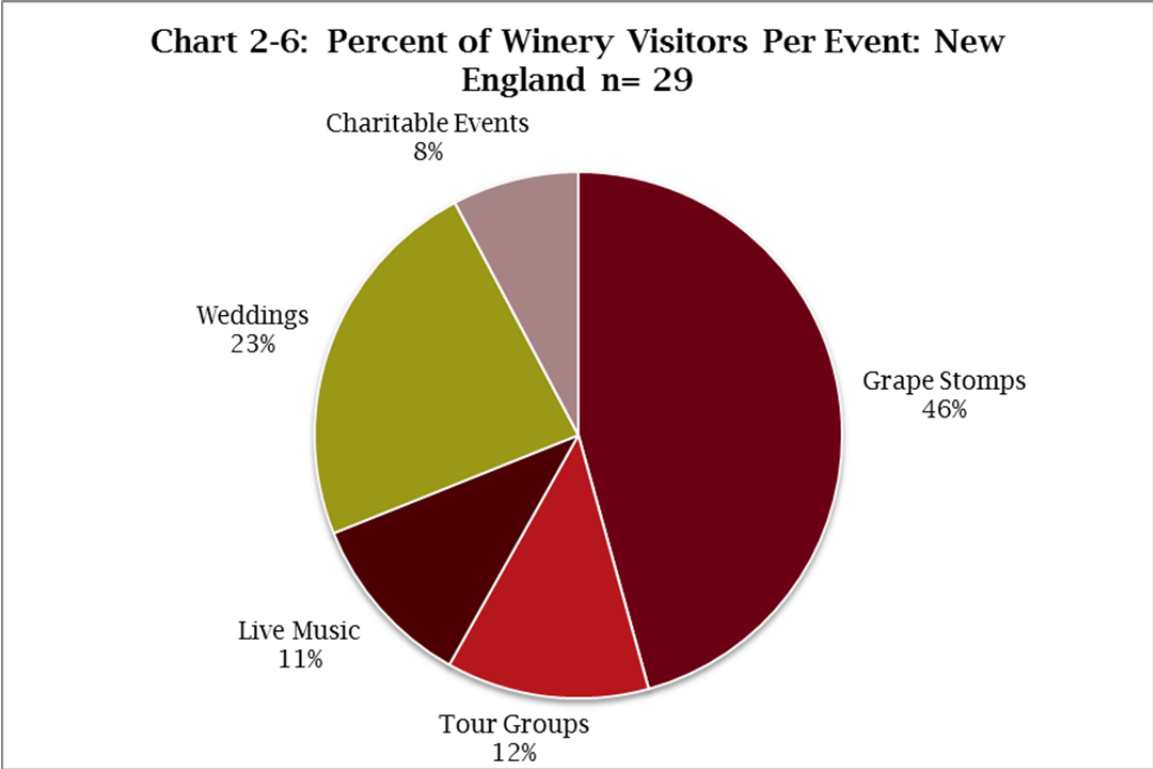


On average, each winery served 4,660 tasting room customers. Wineries estimate that 36 percent of their tasting room visitors are repeat customers. Forty-one percent of wineries charge for tastings. Twenty-one percent of the wineries offer food with their wine service.

The majority of participating New England wineries (77 percent) operates a tasting room in conjunction with their winery (see chart 2-5).



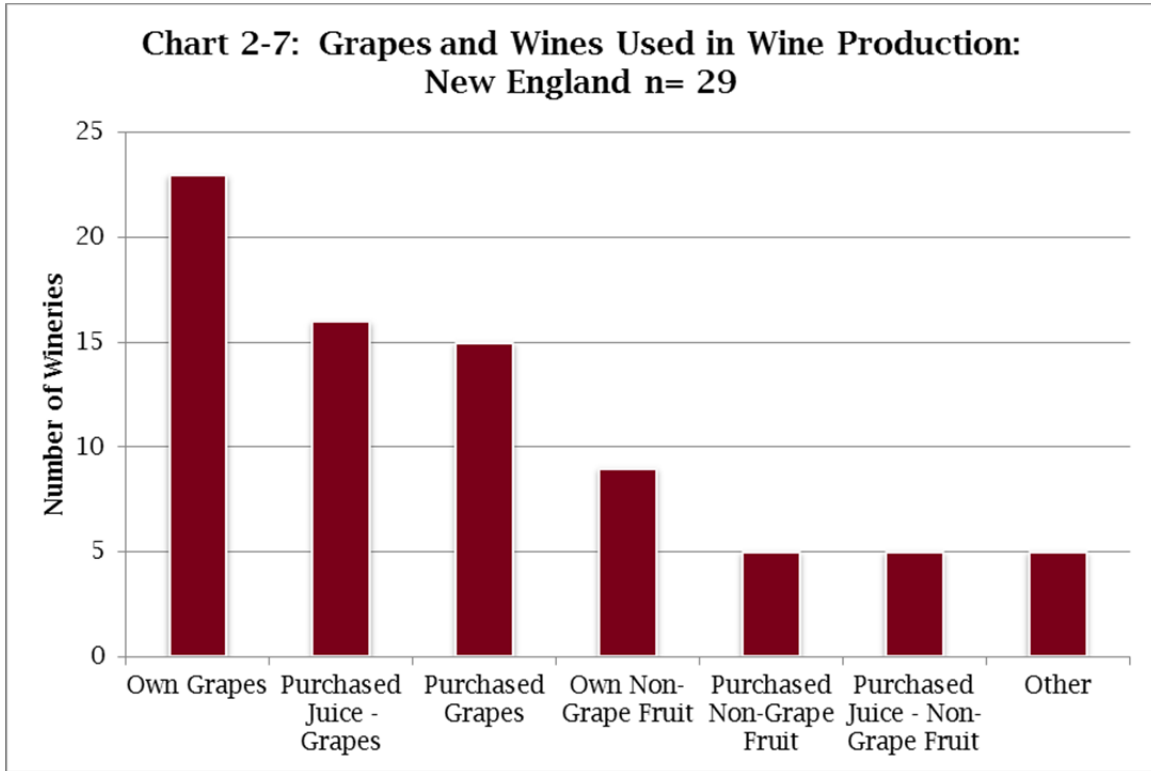
In total, the responding wineries (29) hosted 93,500 guests at winery events, roughly half who were from outside the local area. Wineries were asked to report how many people attended the following types of events: grape stomps, wine-making classes, tour groups, live music, weddings, ladies-only events, charitable events, and other events. Grape stomps accounted for nearly half (46 percent) of winery visits (see chart 2-6). Weddings and tour groups drew 23 percent and 12 percent of visitors respectively.



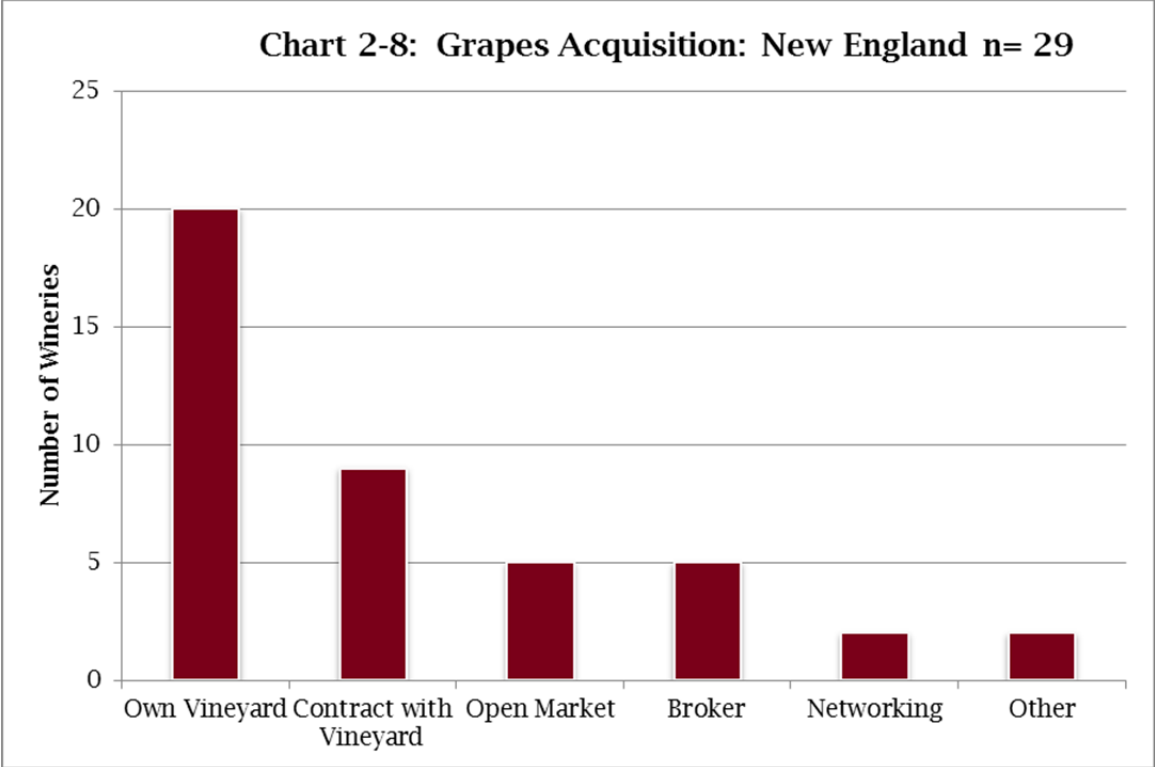
Grape Acquisition

Wineries in participating New England states purchased \$5.3 million of grapes in 2011, from their own vineyards and from other vineyards. On average, each winery spent \$35,100 to buy grapes. Fifty-three percent of the grapes used by these wineries were cold-hardy varieties.

The most common method of acquiring grapes by responding wineries is to purchase grapes from their own vineyards (see chart 2-7). A significant number of wineries (16) indicated they purchase grape juice from other sources.

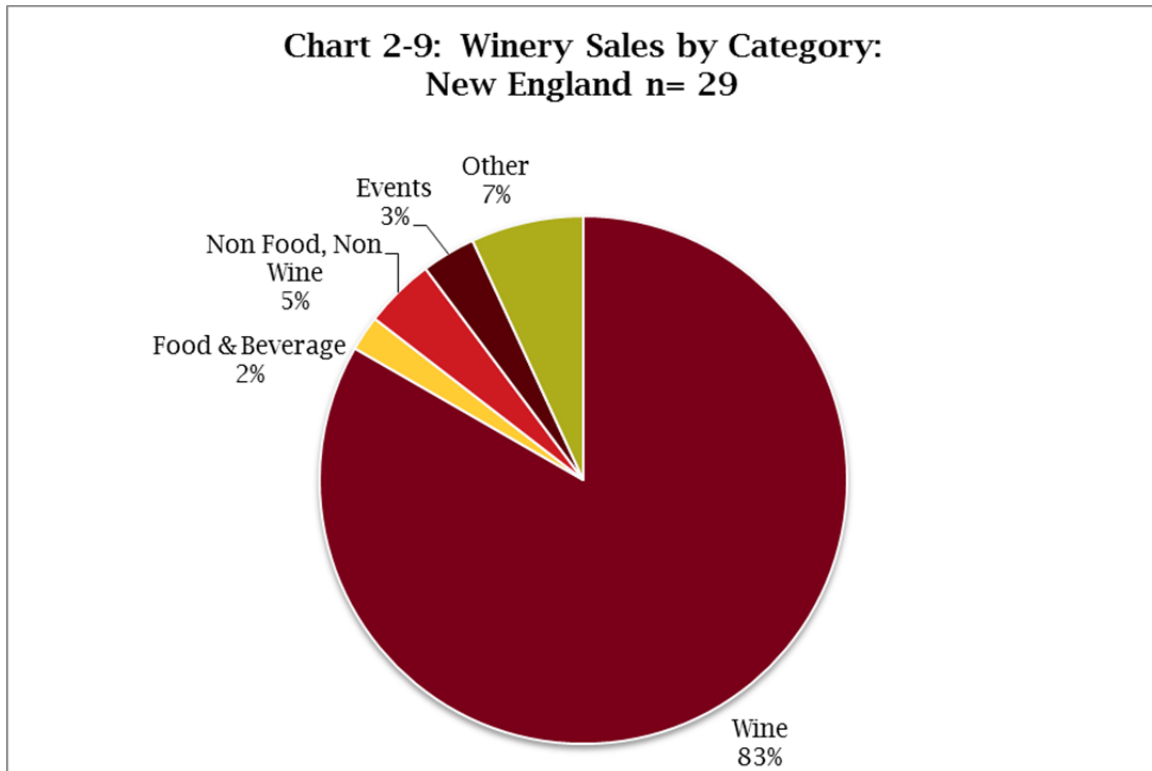


Wineries primarily acquire their grapes from their own vineyards (see chart 2-8). Those who purchase grapes use a combination of contracts with vineyards, the open market, and brokers. In majority of other participating states, no wineries indicate using brokers. Interestingly, no vineyards in the New England states reported using brokers to market their grapes. This indicates that New England wineries may be importing grapes through brokers.

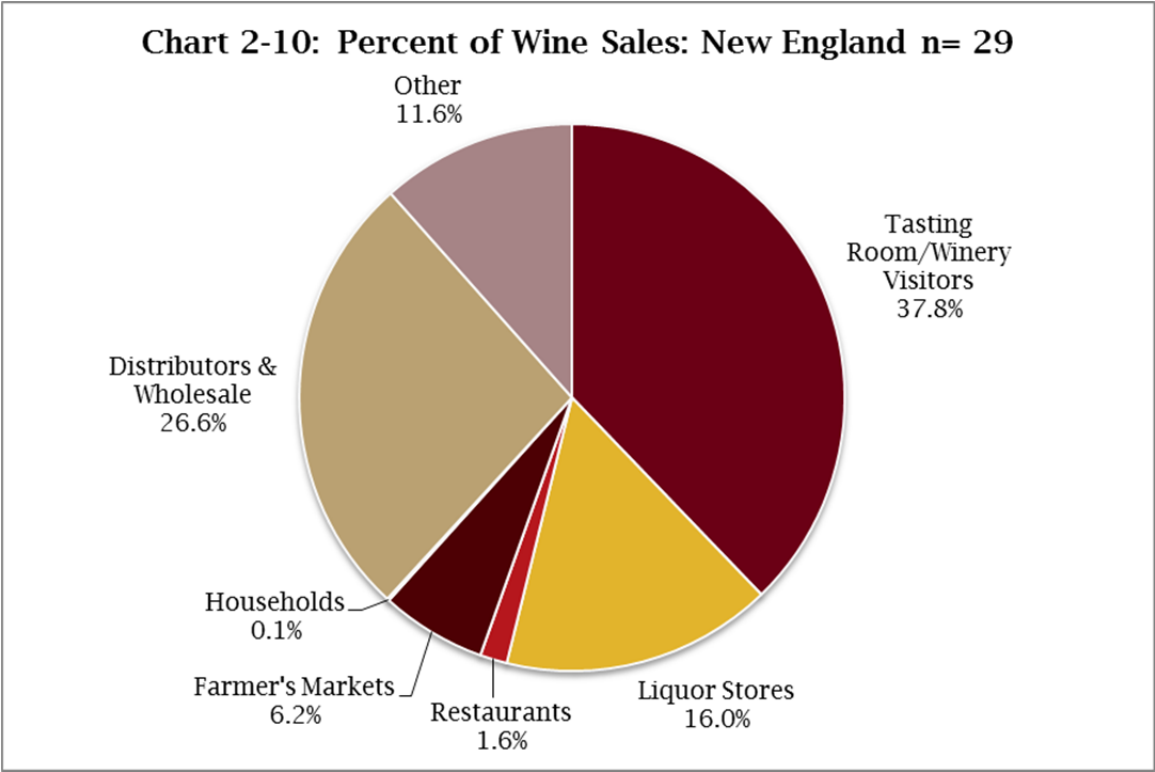


Winery Sales and Production

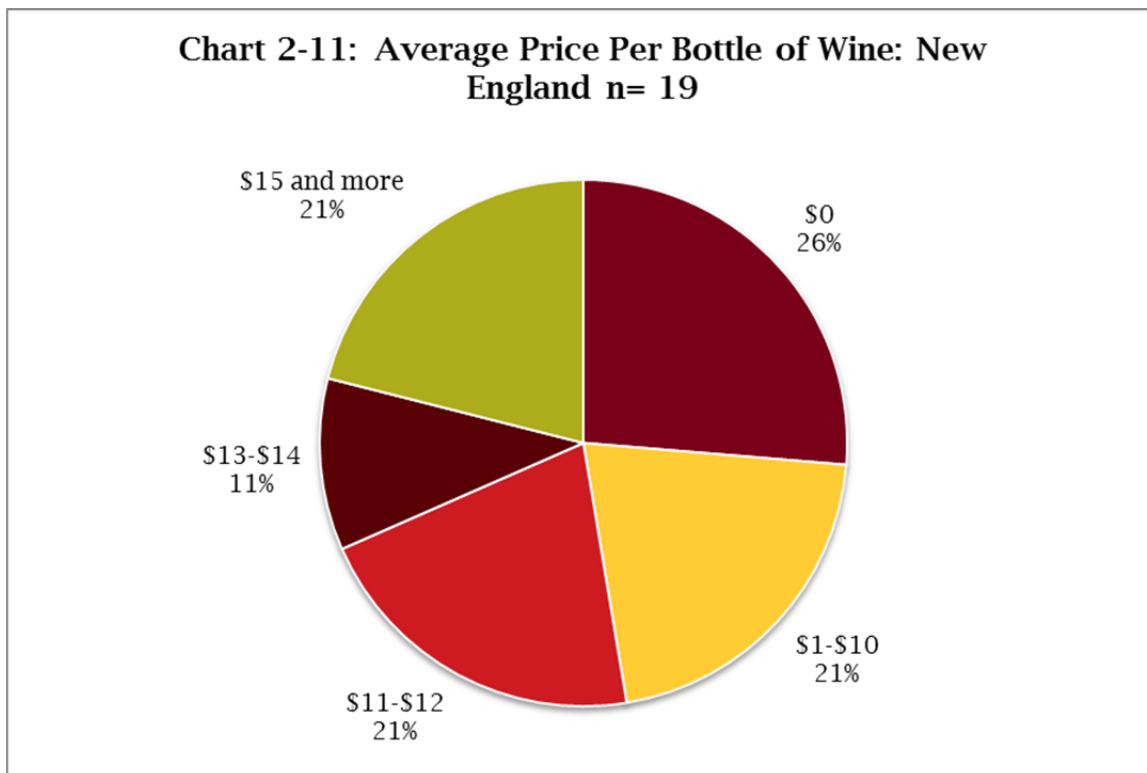
In total, wineries in the participating New England states had sales of \$26.7 million in 2011, an average of \$175,400 per winery. Of total sales, \$14.1 million were generated from wines crafted from cold-hardy grapes. Wine sales, including bottles sold and tasting room fees, are the primary source of revenue for wineries, accounting for 83 percent of all sales (see chart 2-9).



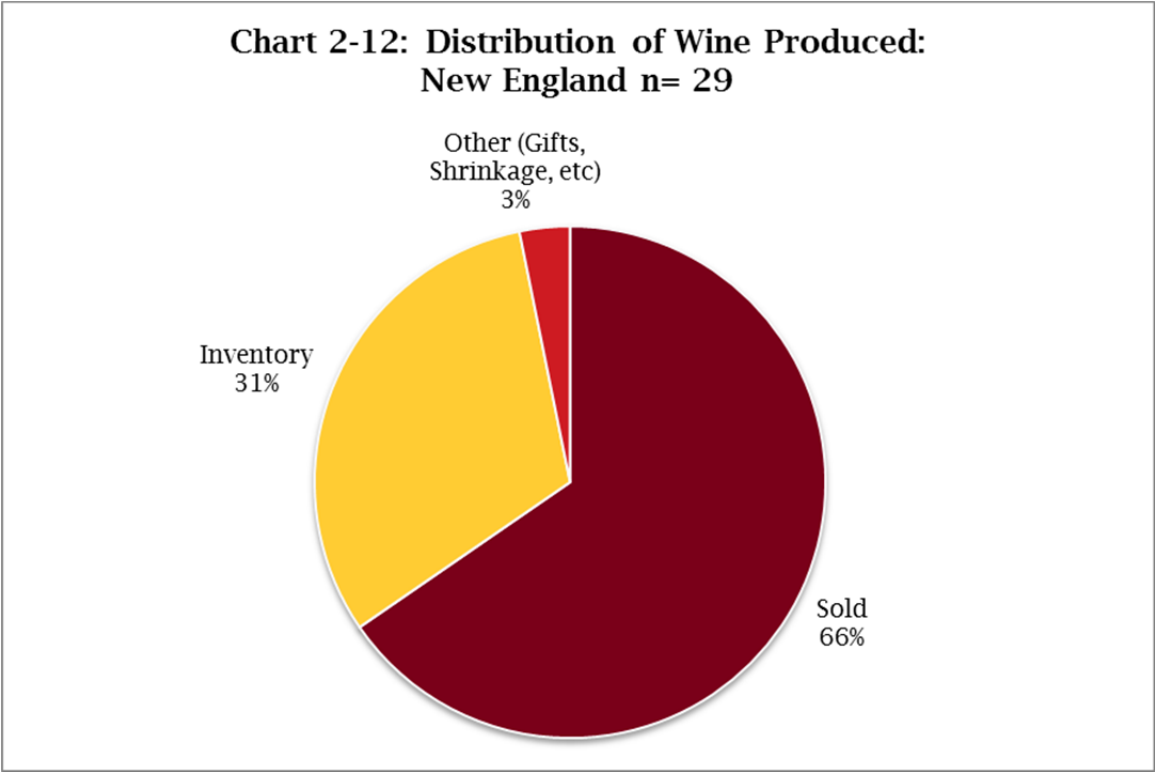
Wineries in the participating New England states sold an estimated 1.7 million bottles of wine in 2011 or an average of 11,200 bottles per winery. Just over one-third (38 percent) of winery sales in the New England states are through the tasting room (see chart 2-10). Twenty-seven percent of sales are through distributors and wholesalers and 16 percent through liquor stores



New England wineries reported the average price per bottle of wine sold was \$9 in 2011. Chart 2-11 shows the distribution of average wine sale prices. Approximately one quarter (26 percent) of the wineries reportedly sold their wine for \$0 per bottle. Since 43 percent of wineries have been established since 2007, this may be because some wineries did not have wine ready for sale in 2012.

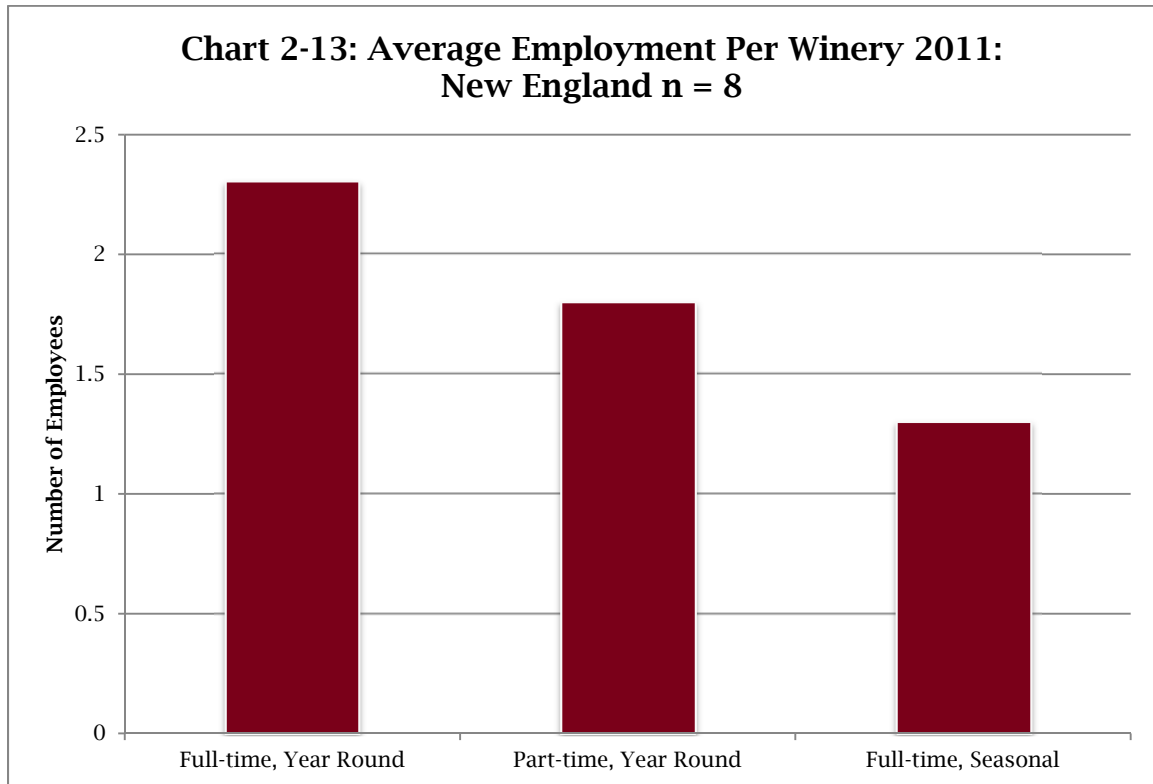


The majority of the wine (66 percent) produced by New England wineries was sold (see chart 2-12). Wineries put 31 percent of the gallons of wine produced into inventory. A small percent (3 percent) of wine produced was utilized in other ways (e.g. gifts, donations, shrinkage, etc.).



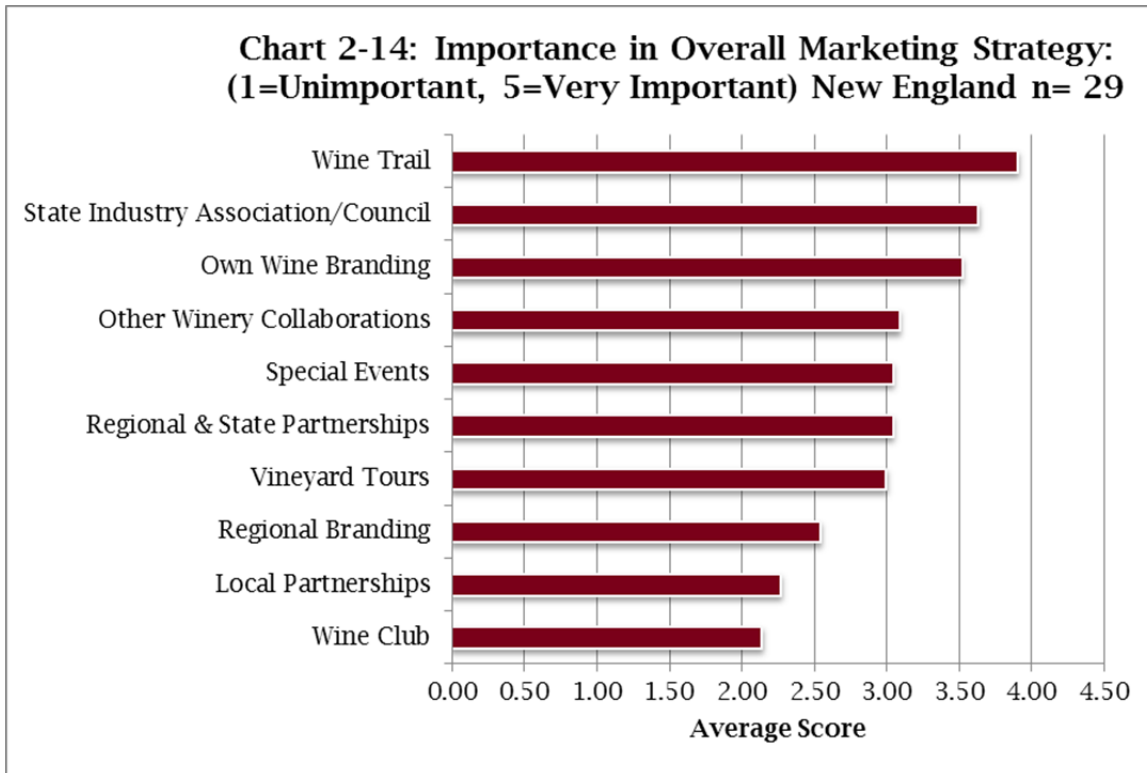
Wineries in the participating New England states employ 820 individuals. In 2011, wineries in participating New England states paid \$9.7 million in labor income (includes wages, salaries, and benefits) with an average of \$63,820 per winery.

On average, each winery employs 5 individuals; 2 full-time year-round people, 2 part-time, year-round people, and 1 full-time, seasonal person (see chart 2-13).

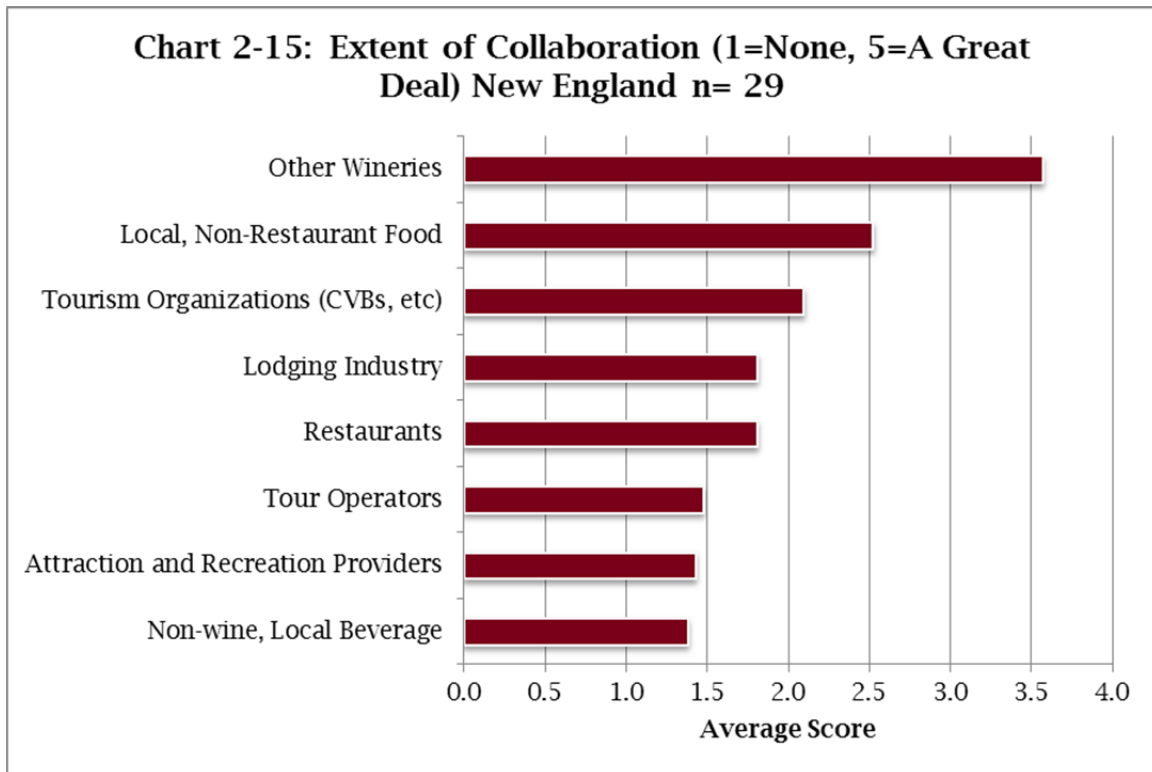


Winery Marketing and Collaboration

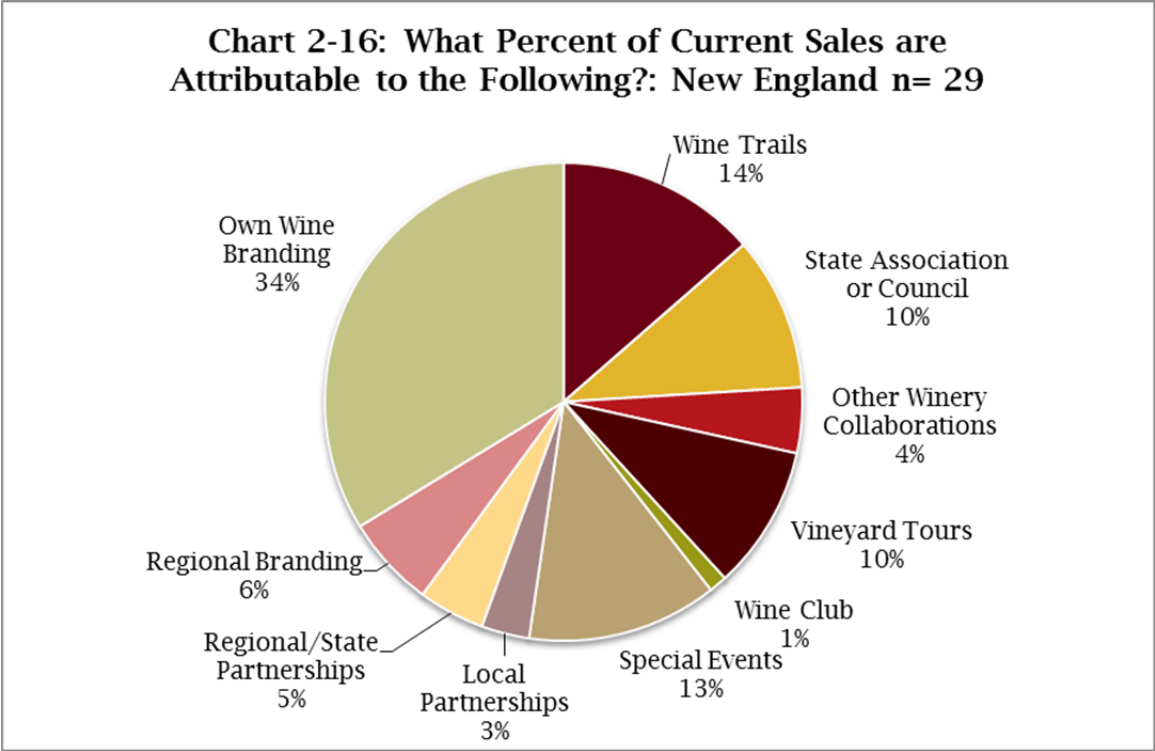
Wineries were asked to rate a list of marketing strategies on a scale where 1 indicated the strategy was “unimportant” for their marketing and 5 indicated it was “very important”. Winery owners believe the wine trail is the most important marketing strategy they can employ, assigning it an average score of 3.91 (see chart 2-14). State industry associations and councils were also assigned relatively high scores. A score below three indicates the strategy is of little to no importance to winery owners. Local partnerships and wine clubs received the lowest scores.



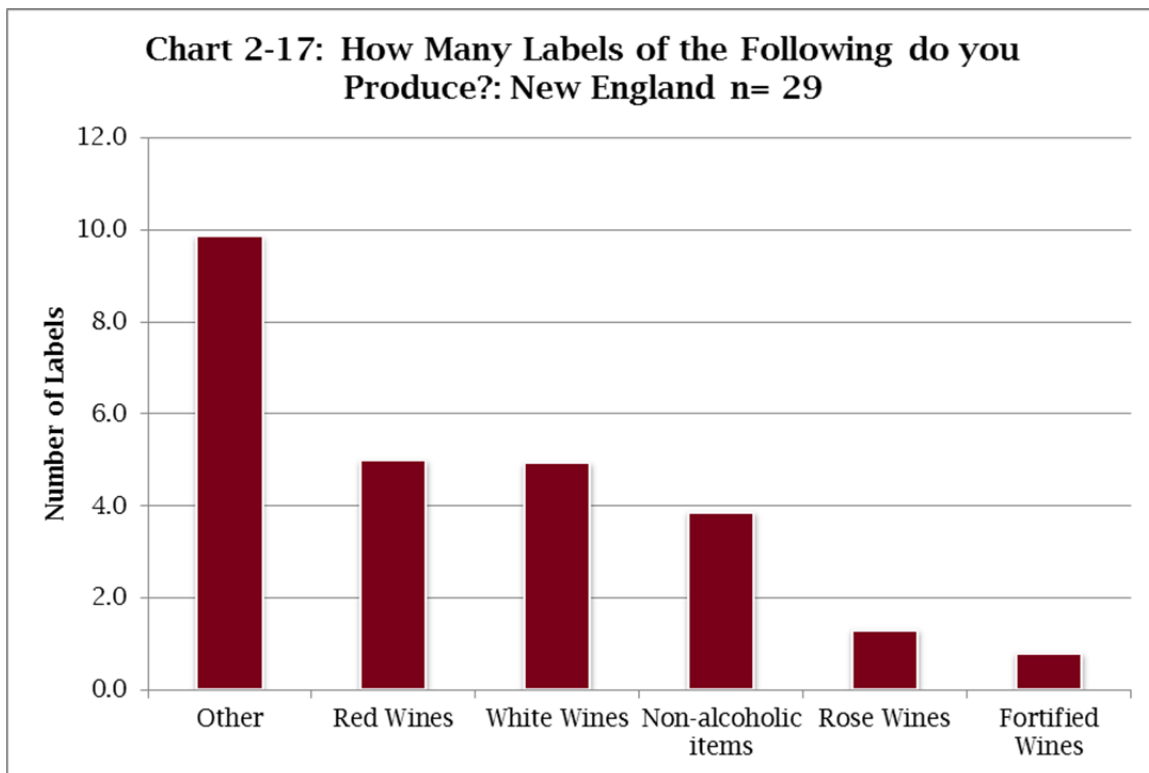
Wineries were also asked about their current collaboration efforts. They were asked, on a scale where 1 equals “none” and 5 equals “a great deal”, “to what extent do you currently collaborate with the following entities?” The highest level of collaboration is among other wineries (see chart 2-15). All other overall scores fall well below 3. This indicates there is significant room for increased collaboration efforts in the New England states.



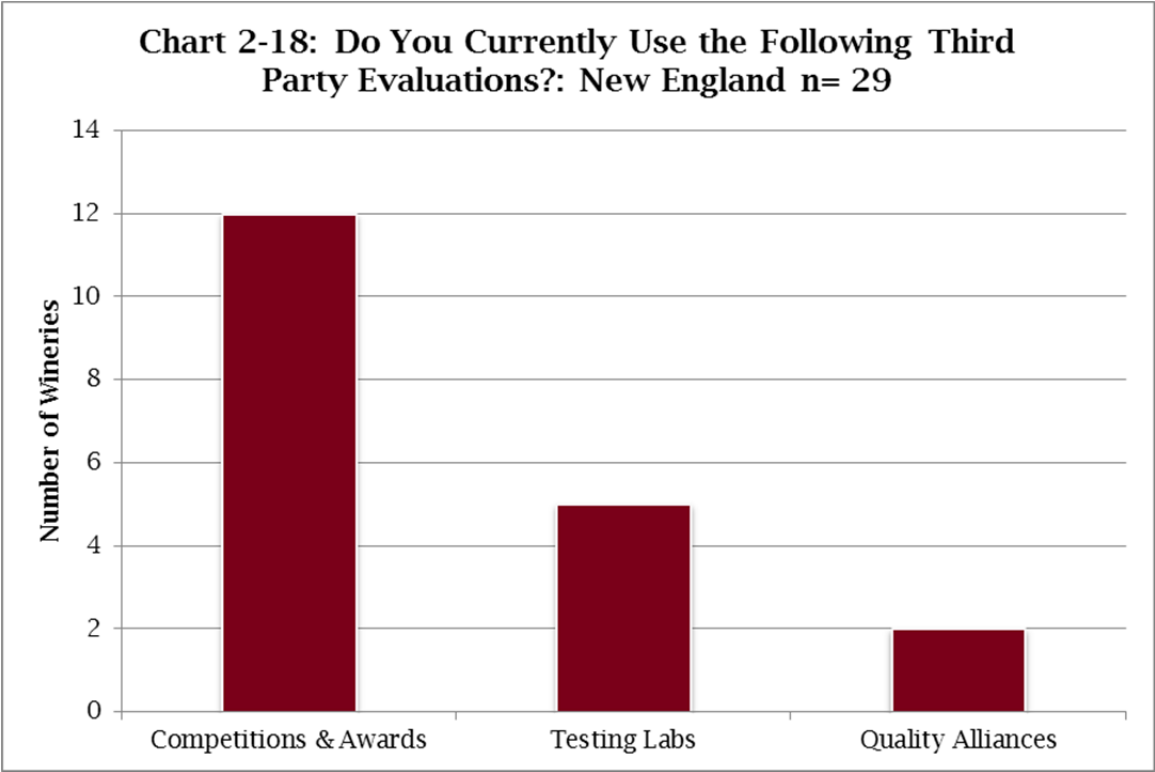
Wineries were then asked how various marketing arrangements influenced their sales. Wineries indicated that their own wine branding efforts drove the largest share (34 percent) of their sales. Wine trails drive an estimated 14 percent of sales and special events 13 percent (see chart 2-16).



Wineries in participating New England states report producing, on average, 10 labels of “other” wines. Since fruit wines were not listed, it is likely the other category reflects the fruit wines. On average, each winery is bottling 5 labels of white wines and 5 labels of red wines (see chart 2-17).



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 and quality alliances for third party evaluations (see chart 2-18).



Future Plans

Winery owners were asked directly about future plans for their establishment. The results indicate the potential for continued growth in the industry, as 91 percent of the wineries plan to expand in the next five years (see chart 2-19). Continued growth also indicates a continued need for successful business planning.

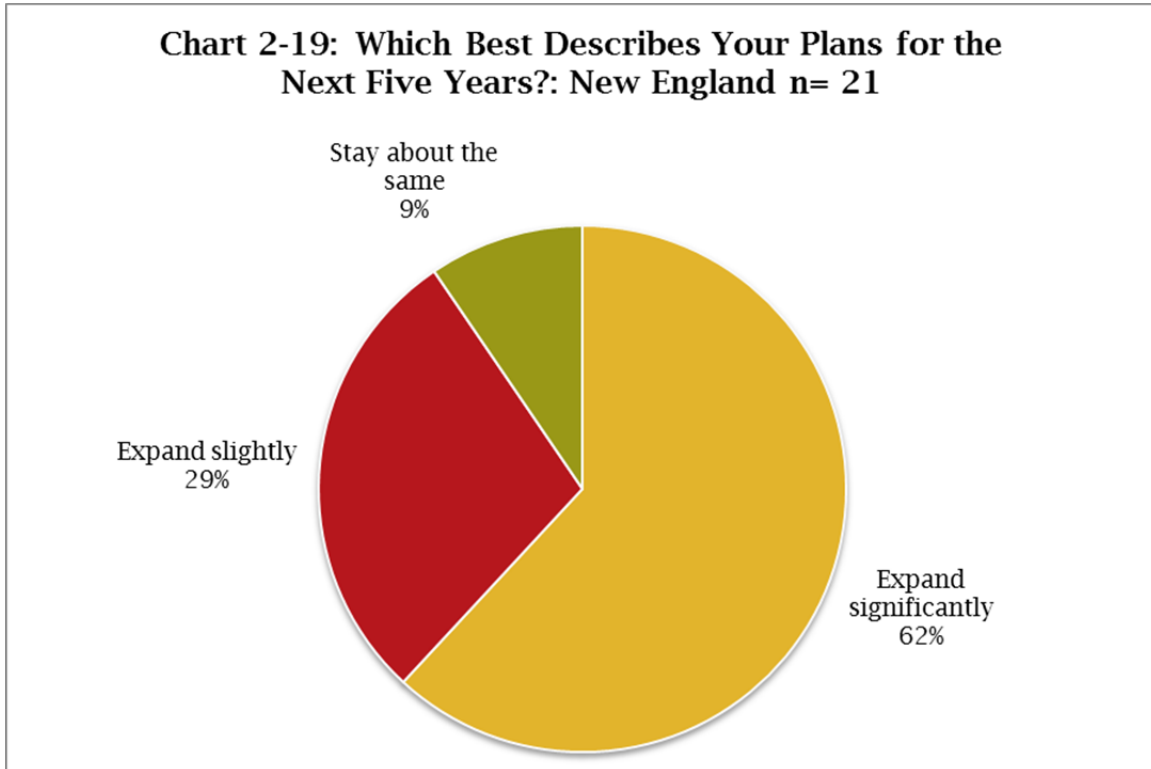
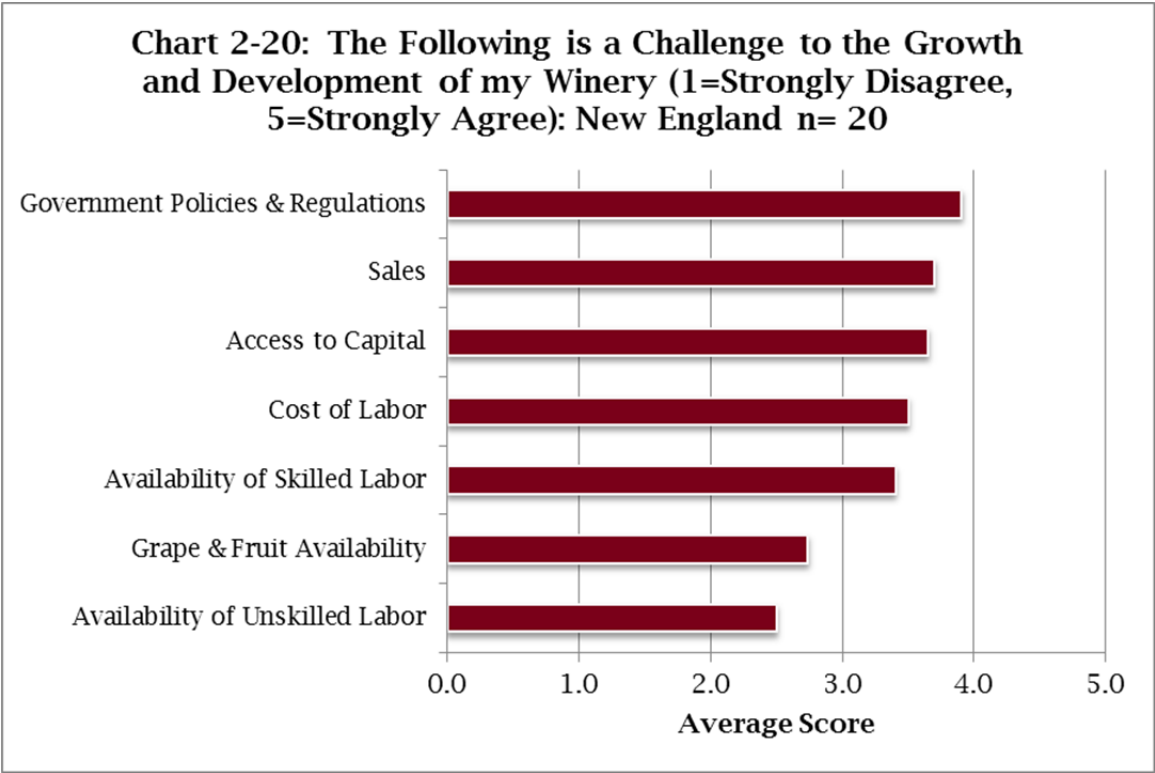


Chart 2-20 depicts winery owners' responses to a question about the challenges to the growth and development of their winery. On a scale where 1 equals "strongly disagree" and 5 equals "strongly agree", wineries were asked to rate a list of issues in relation to each as a challenge to the growth and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



ECONOMIC CONTRIBUTION OF VINEYARDS AND WINERIES IN THE NEW ENGLAND STATES

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.

Direct Effects

In measuring the economic contribution of the grape growing and winery industries in the participating New England states, the first step is to measure the direct effect 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 (152 in New England states) and vineyards (365 in New England states) to determine the total direct effect for the state.

Wineries and vineyards contribute to the economy of the participating New England states 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, both at the winery and in businesses unassociated with the winery, 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 grape growing and winery industries in the New England states.

Vineyards in the participating New England states, in 2011, spent \$4.8 million within the state to operate. This included \$1.4 million of payments to their 790 employees. This equates to an average wage of \$1,800 per employee. In this study, one job is treated as one job, regardless if the job is full-time, part-time, or seasonal. In fact, participating vineyards report that the majority of their employment is part-time, seasonal employment, particularly at harvest time.

Wineries in the participating New England states, in 2011, spent \$21.3 million within the state for their operations. Of this, \$9.7 million went to their 820 employees. Total winery sales, as mentioned in the winery summary, were \$26.7 million in 2011. Of this, \$5.3 million in purchases were for grapes. Since grape sales are included in the vineyard impact, they are excluded here to avoid double counting. Wineries also rely on part-time employment. On average, each winery employs 2 full-time, year-round people and 2 part-time, year-round people (see chart 2-13).

Finally, winery tourists in 2011 spent \$12.6 million during winery visits. These expenditures supported 170 jobs in the participating New England states which in total amounted to \$4.2 million in labor income. A winery tourist was defined as a person who indicated the winery was a primary motivator of their trip to the winery. The number of winery visitors was extrapolated from winery responses regarding the number of tasting room customers in 2011. For a more in-depth explanation of the process used to calculate the number of winery tourists, please see appendix 3.

Table 3-1: Direct Economic Effects of Vineyards, Wineries, and Winery Tourists, New England States, 2011

	Vineyards	Wineries	Winery Tourists
Output	\$4,830,000	\$21,320,000	\$12,600,000
Employment	790	820	170
Labor Income	\$1,430,000	\$9,700,000	\$4,160,000
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) 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 grape growing and winery industries in the participating New England states was \$70.1 million. This includes 3,260 jobs and \$36.7 million in labor income (see table 3-2).

Table 3-2: Total Economic Effects of Vineyards, Wineries, and Winery Tourists, New England States, 2011

	Vineyards	Wineries	Winery Tourists	Total
Output	\$8,150,000	\$38,600,000	\$23,340,000	\$70,090,000
Employment	1,200	1,800	260	3,260
Labor Income	\$2,720,000	\$26,850,000	\$7,160,000	\$36,730,000
Estimates by University of Minnesota				

Vineyards in the participating New England states contributed \$8.2 million to the regional economy in 2011. This included payments to workers in the amount of \$2.7 million. The vineyard industry contributed to the employment of 1,200 people.

Wineries in the participating New England states contributed \$38.6 million in economic activity to the region in 2011. Wineries generated employment for 1,800 workers who received \$26.9 million in labor income.

Winery tourism also contributed significantly to the New England states' economies. Spending by tourists visiting wineries in New England generated \$23.3 million in economic activity. This includes \$7.2 million in labor payments and 260 jobs.

Cold-Hardy Related Economic Effects

Surveyed grape growers report 53 percent of the grapes grown in the participating New England states are of cold-hardy varieties (see appendix 1 for a definition of cold-hardy). Wineries indicate 55 percent of the grapes used in wine are from the cold-hardy cultivars. In 2011, cold-hardy grapes contributed \$37.3 million to the output of the economies of participating New England states including \$19.5 million in labor income. They contributed 1,710 jobs (see table 3-3).

Table 3-3: Total Economic Effects of Vineyards, Wineries, and Winery Tourists Derived from Cold-Hardy Grapes, New England States, 2011				
	Vineyards	Wineries	Winery Tourists	Total
Output	\$4,480,000	\$20,460,000	\$12,370,000	\$37,310,000
Employment	640	930	140	1,710
Labor Income	\$1,500,000	\$14,230,000	\$3,800,000	\$19,530,000

Estimates by University of Minnesota

Comparing Results to Previous Studies

Private consultants have also measured the economic impact of the grape growing and winery industries in New England states. These studies have taken a different methodological approach to measuring the direct effect of the industry. In this study, University of Minnesota researchers followed established methodological practices in determining the direct effect.

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 goal was to establish industry baselines and quantify the economic contribution of the industries. This report presents the results for the participating New England states of Connecticut, Maine, Massachusetts, New Hampshire, and Vermont. The results for the New England states are presented together due to the smaller size and scale of the industries in the individual states.

In 2011, the total economic contribution of the grape growing and winery industries in the participating New England states was \$70.1 million. This includes 3,260 jobs and \$36.7 million in labor income. Vineyards contributed \$8.2 million to the total, wineries \$38.6 million, and winery tourists \$23.3 million.

Cold-hardy grapes contributed \$37.3 million in economic activity to the economy of the participating New England states in 2011. The industry was responsible for the creation of 1,710 jobs and \$19.5 million in labor income.

Growth in the vineyard industry in the participating New England states is demonstrating signs of slowing down, but still growing at a modest rate. Between 2002 and 2007, 42 percent of the responding vineyards were established. In the five year period following, 32 percent of vineyards were founded. Approximately half (48%) of vineyards expanded their acreage after initial planting. Further, responding vineyards report a modest 35 percent of their expenditures are for capital improvements. In high growth periods, capital improvement expenditures often are higher than operating expenditures. Current vineyards plan, on the average, to grow, but 36 percent plan to maintain their current size.

Vineyard operators report the biggest challenge to the future growth and development of their vineyard is pests/insects and disease. The Marquette grape, released in 2006, is being adopted in the New England states at a modest pace.

The winery industry in the participating New England states also shows signs of growth, but fewer signs that the growth may be tapering. Forty-three percent of wineries were founded between 2007 and 2012, a rate that is higher than the five year period preceding it. When asked about future plans, 91 percent of current wineries indicated plans to expand in the next five years.

As wineries expand, the challenges they face include government policies and regulations and sales. When asked to indicate which factors were the biggest challenges facing the future of their wineries, these two items earned the highest ratings. Wineries in New England are more likely to use distributors, wholesalers, and liquor stores to sell their wine than their counterparts in other states. There may be room to increase sales through other channels.

Wineries in the New England states are primarily located in rural areas and small towns. They rely on winery visitors for roughly one-third of their sales, yet collaboration between other entities (i.e. non wineries) is relatively low. There may be an opportunity to increase efforts to work together to increase winery sales. Winery owners report wine trails are important to the success of their wineries.

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 straightforward 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 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 applied to 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 in 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.

With the number of winery tourists quantified, researchers need to apply an average spending profile to determine total spending by winery tourists. In the New England States, the spending profiles from the New Hampshire seasonal visitor profile were used. Total per person spending was estimated at a conservative \$47 per day.

The winery tourist economic impact calculations are arguably the most complex of this report. Future research into the economic impact of wineries and vineyards in the New England states would be greatly enhanced by 1) doing tasting room customer surveys in the New England states and 2) developing a spending profile specifically for New England winery visitors.