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EXTENSION CENTER FOR COMMUNITY VITALITY

Vineyards and Wineries in Nebraska

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**

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October 2013

Authored by: Brigid Tuck and William Gartner

Partners/Sponsors:

Northern Grapes Project

Special Thanks To:

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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 industry 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 Nebraska. It also quantifies the economic contribution of the industries.

VINEYARDS AND WINERIES IN NEBRASKA: 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 Nebraska.
- In 2011, the total economic contribution of the grape growing and winery industries in Nebraska was \$27.3 million. This includes 1,060 jobs and \$5.6 million in labor income.
- Indications are that the vineyard industry in Nebraska is maturing, especially when compared to the vineyard industry in other Northern Grapes Project states. The rate at which vineyards are being established is declining. The most rapid growth was from 2002 to 2007. The majority of vineyards do not have plans to expand in the near future.
- Vineyard operators in Nebraska are becoming increasingly sophisticated in their operations and marketing. The majority of vineyards are the primary agricultural operation for their owner. Vineyards in Nebraska rely relatively less on volunteer labor as compared to their counterparts in other states, choosing instead to use paid labor and owner-operator labor. Contracts with wineries are the primary method used to sell grapes.
- Vineyard operators' main concerns in regards to the future growth and development of their vineyard relate primarily to labor. The cost of labor and availability of skilled labor are their primary concerns. This differs from most other participating states who report disease and pests/insects as their primary concerns.
- The Frontenac grape is the most commonly planted red cultivar and the Edelweiss grape is the most commonly planted white cultivar in Nebraska. The number of Marquette grape plantings is increasing, but not as rapidly as in other project states.
- Wineries in Nebraska continue to grow in number. Only 20 percent of existing wineries were operating prior to 2002. Over one-third of wineries have opened since 2007. Existing wineries are planning for moderate growth. A handful of wineries are looking at transitioning to new ownership, either by selling the winery or transferring the winery to a family member. Wineries report availability of skilled labor and government policies and regulations as the most significant challenges to their future growth and development.
- Wineries rely on their own wine branding initiatives and special events to drive sales. Attracting visitors to the winery is important strategy for wineries in Nebraska. Over half of a winery's sales are through the tasting room. The overwhelming majority of wineries are located in rural areas, thus placing special emphasis on the need for wineries to be a tourism destination.



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.

The Nebraska Winery and Grape Growers Association provided e-mail addresses for its membership. In total, 172 invitations to participate in the survey were sent to potential Nebraska growers and wineries. Of those, 46 individuals responded, for a response rate of 27 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%
Wisconsin	476	97	20%

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

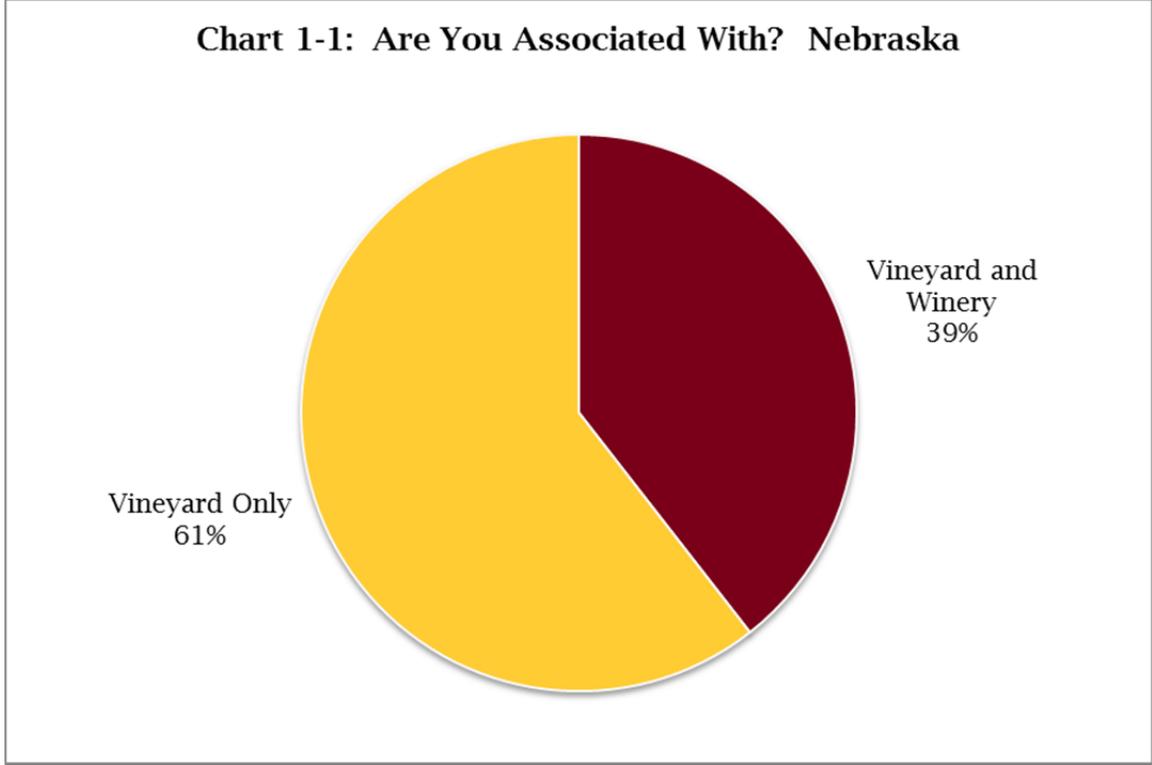
Not all of the survey responses were applicable to the baseline survey. Association memberships are generally open to all interested parties and therefore membership lists include individuals who may be considering growing or producing wine, or individuals who previously grew grapes or produced wines. 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.

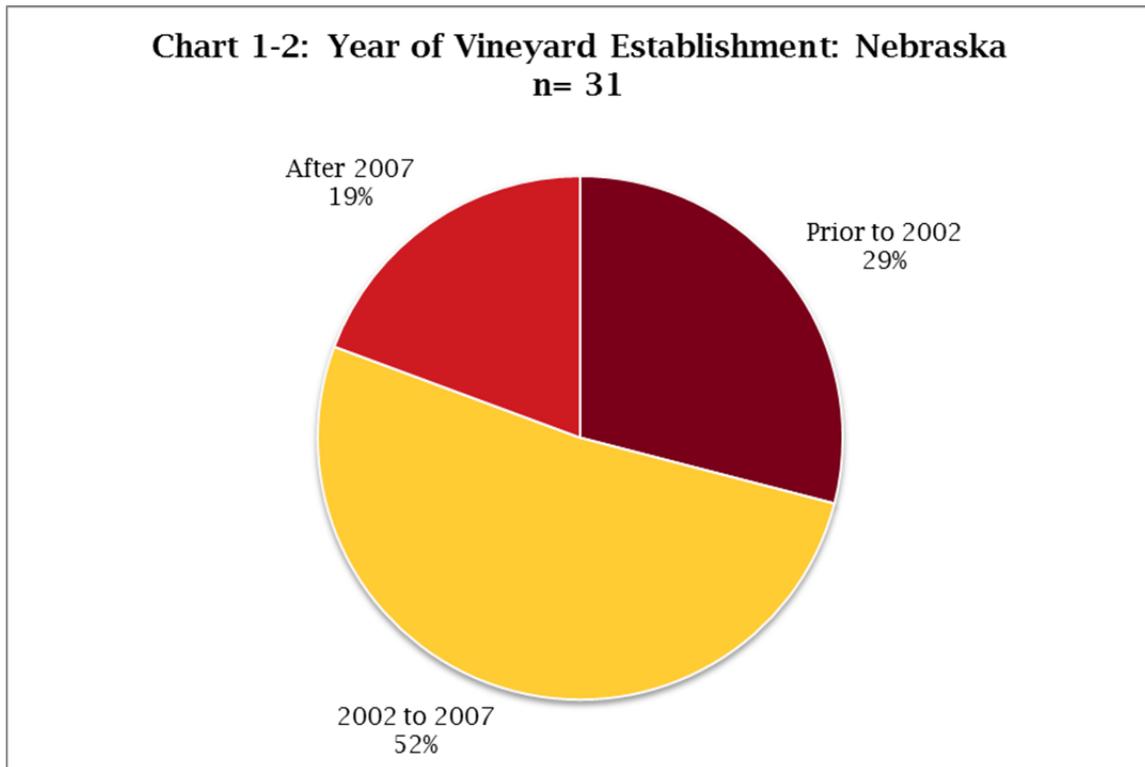
Survey participants could be vineyard operators, winery operators, or operators of a joint vineyard-winery business (see chart 1-1). Nearly two-thirds (61 percent) of survey respondents in Nebraska operate a vineyard only. All winery respondents reported operating a vineyard in conjunction with the winery. In total, the survey includes 15 wineries and 31 vineyards.



VINEYARD CHARACTERISTICS

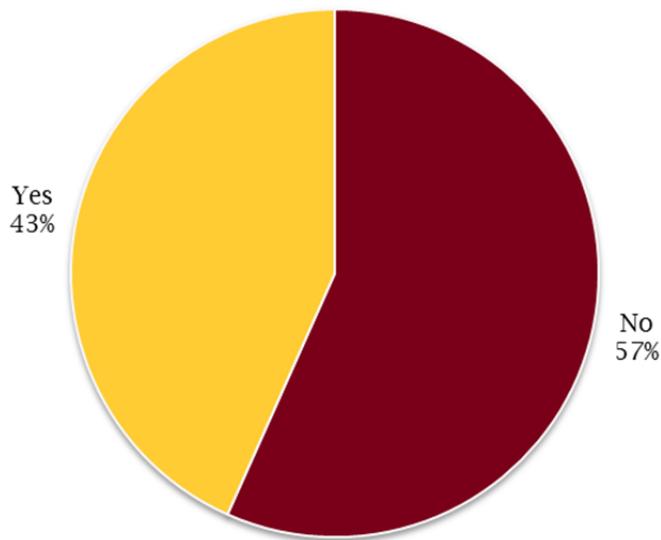
Thirty-one respondents indicated they owned and operated a vineyard in Nebraska. The National Agricultural Statistics Service reports 216 vineyards in the state. Therefore, the response rate for this study is 14 percent.

The Northern Grapes Project baseline survey results reinforce the observed trend of rapid growth in the grape growing industry in Nebraska (see chart 1-2). More than one of every two responding vineyards was established between 2002 and 2007. The survey results indicate a tapering of growth in Nebraska, with only 19 percent of vineyards being planted since 2007.



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

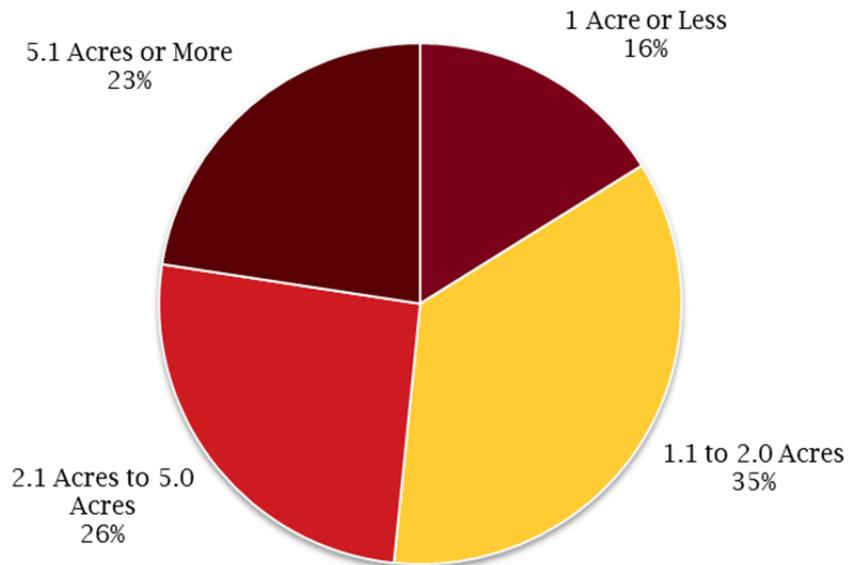
Chart 1-3: Have You Added Acreage Since Your Vineyard Was Established? Nebraska n= 30



The majority of responding vineyards (51 percent) are less 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.

Our survey results, extrapolated out to the entire population of vineyards, indicate there are 830 acres planted in grape vines in Nebraska. Survey results show that 66 percent, or 550 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.

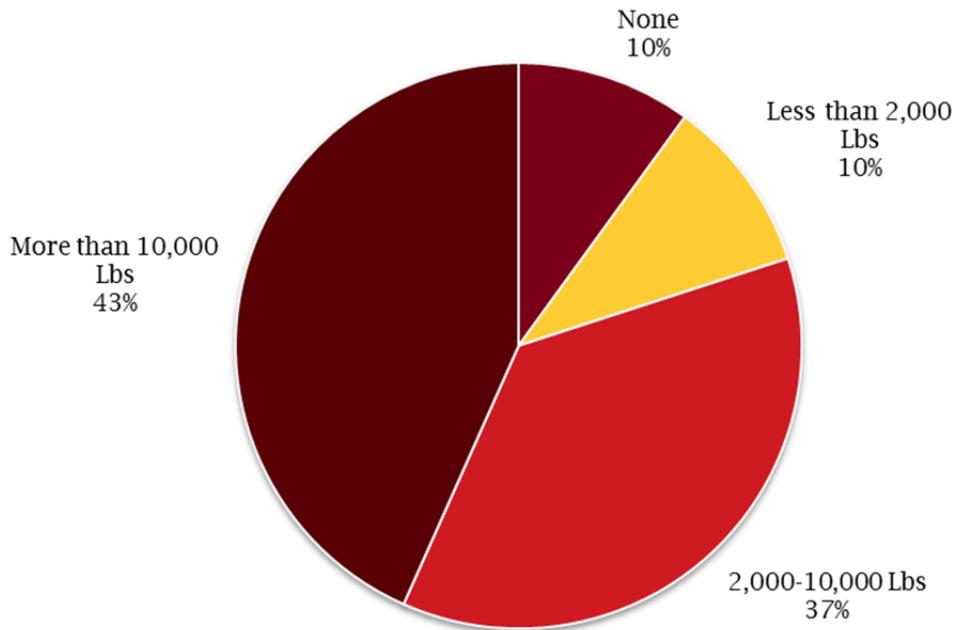
Chart 1-4: What is the Total Planted Acreage of Your Vineyard? Nebraska n= 31



Vineyard production reflects the age of vineyards and the size of vineyards in the survey population, see chart 1-5. Ten percent of the vineyards surveyed indicated they did not produce any fruit in 2011. As depicted in chart 1-2, 19 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.

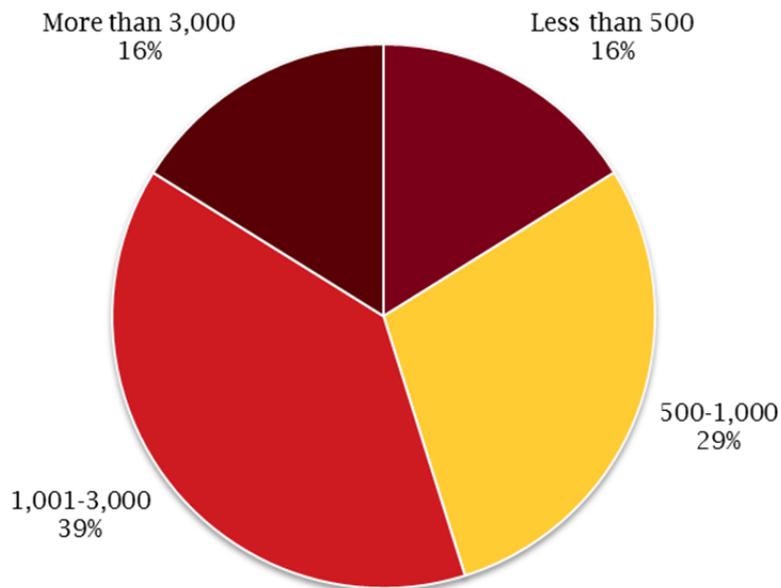
Survey results, extrapolated to represent all growers in the state, reveal Nebraska grape growers produced approximately 1,370 tons of fruit in 2011. Average yield on producing acreage was 1.9 tons per acre. This yield is lower than expected. It may be that the acreage is just coming into production and has yet to reach its full production potential.

Chart 1-5: Vineyard Production: Nebraska n= 30



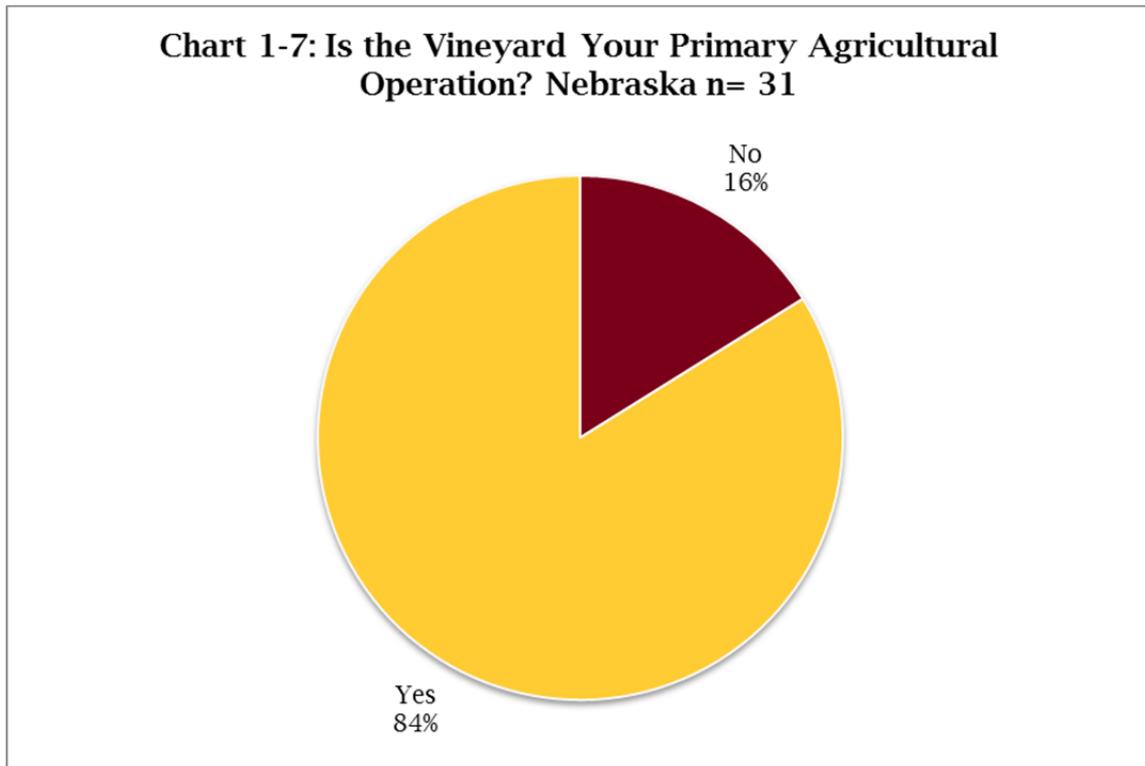
The average participating vineyard has 1,800 planted vines. Nearly 40 percent of vineyards have 1,001 to 3,000 vines in the ground, as shown in chart 1-6.

Chart 1-6: Total Vines in Vineyard: Nebraska n= 31



Vineyard Operations

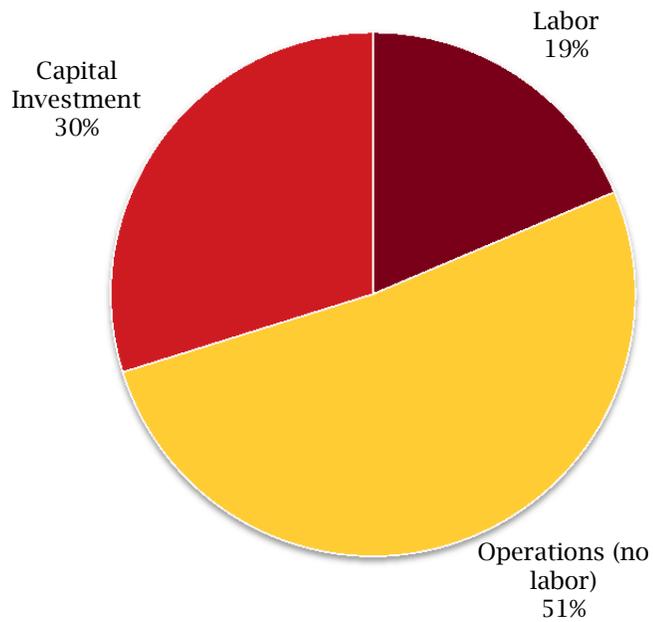
The majority (84 percent) of vineyards operate as stand-alone agriculture enterprises (see chart 1-7). The vineyards who do operate as a secondary agriculture operation indicate conventional farming, particularly of row crops, is their primary operation.



The average responding vineyard spent \$12,250 on operations (of which \$3,250 were 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 \$5,202 on capital investments, including trellis systems, tractors, crushers, pick-ups, ATV's, and other equipment.

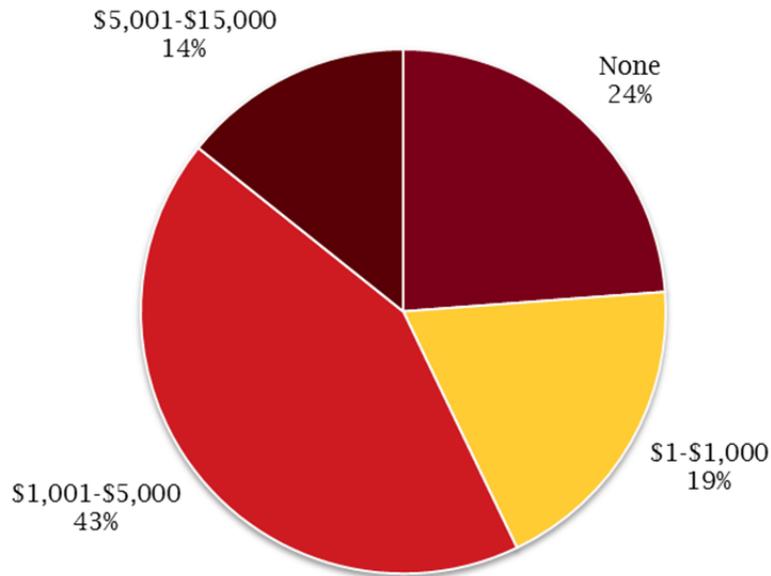
In total, vineyards in the state of Nebraska spent \$3.8 million in 2011. Of this, \$2.6 million was spent on operating expenses (includes labor) and \$1.1 million on capital expenditures. Vineyards spent \$700,000 of the total operating costs on labor expenditures, see chart 1-8. Roughly half of a vineyard's annual expenditures are spent on operations, one-third on capital investments, and 20 percent on labor.

**Chart 1-8: Vineyard Expenditures by Category:
Nebraska n=31**



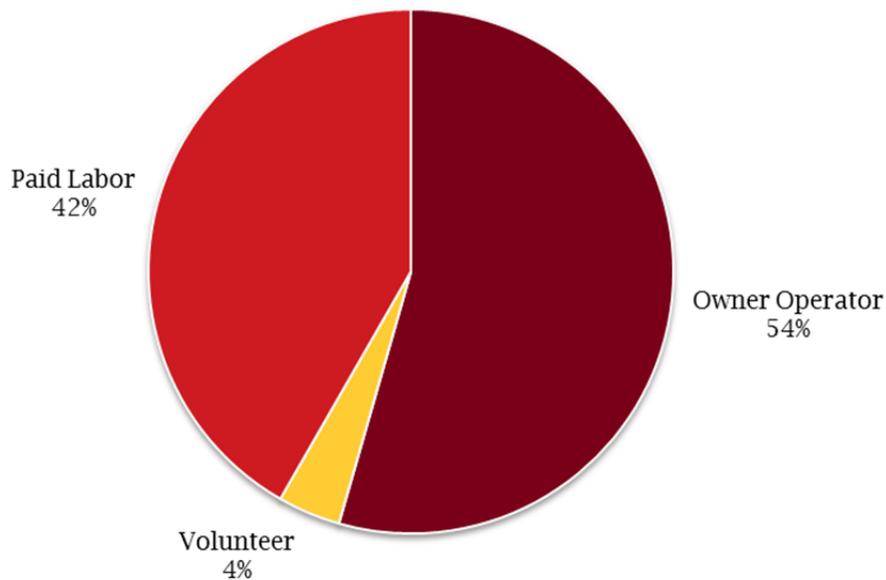
Of the 21 vineyards that responded to the detailed questions regarding labor expenditures, 24 percent reported no expenditures for labor (chart 1-9). This is primarily because the owner/operator did all the labor or the vineyard used volunteer or family labor to complete the vineyard tasks.

**Chart 1-9: Vineyard Labor Expenditures:
Nebraska n= 21**



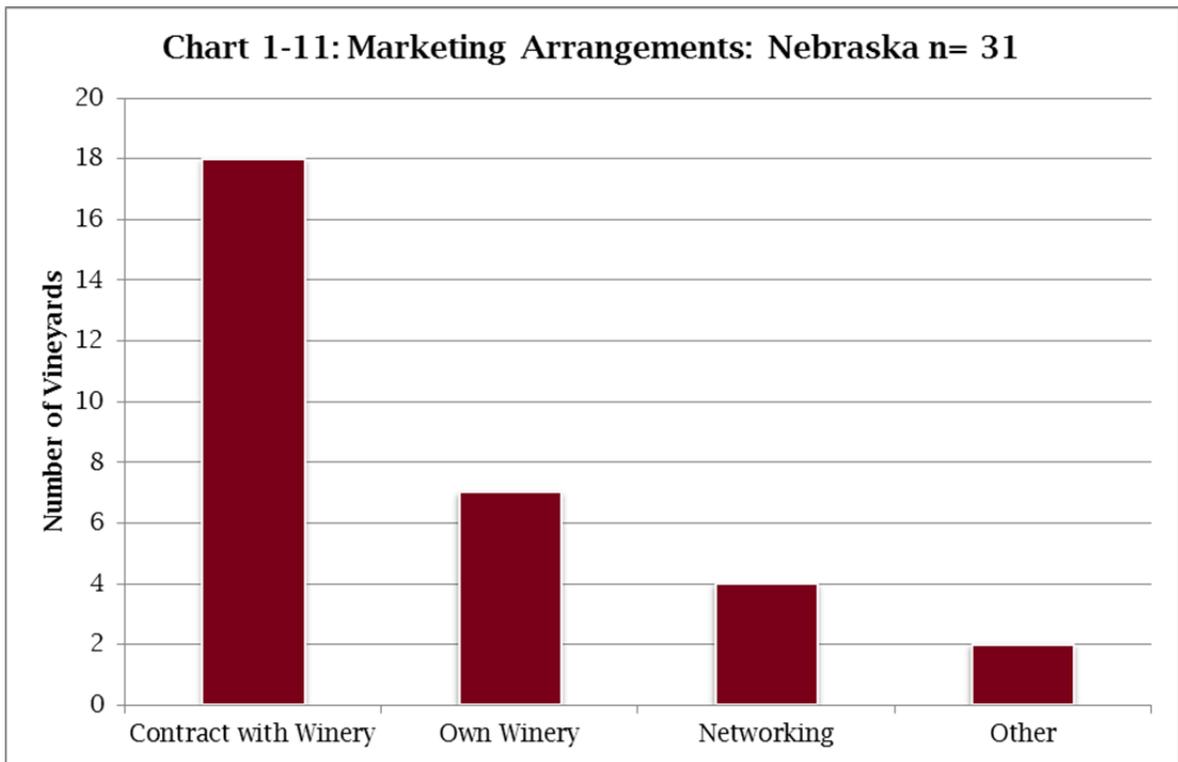
As shown in Chart 1-10, the majority of labor for the responding vineyards was provided by the owner/operator (54 percent). Forty-two percent of labor was supplied by paid employees. Interestingly, only 4 percent of the labor hours were provided by volunteer labor. This is a lower percentage than in many of the other states in the Northern Grapes Project study area.

**Chart 1-10: Hours of Labor by Category:
Nebraska n= 22**

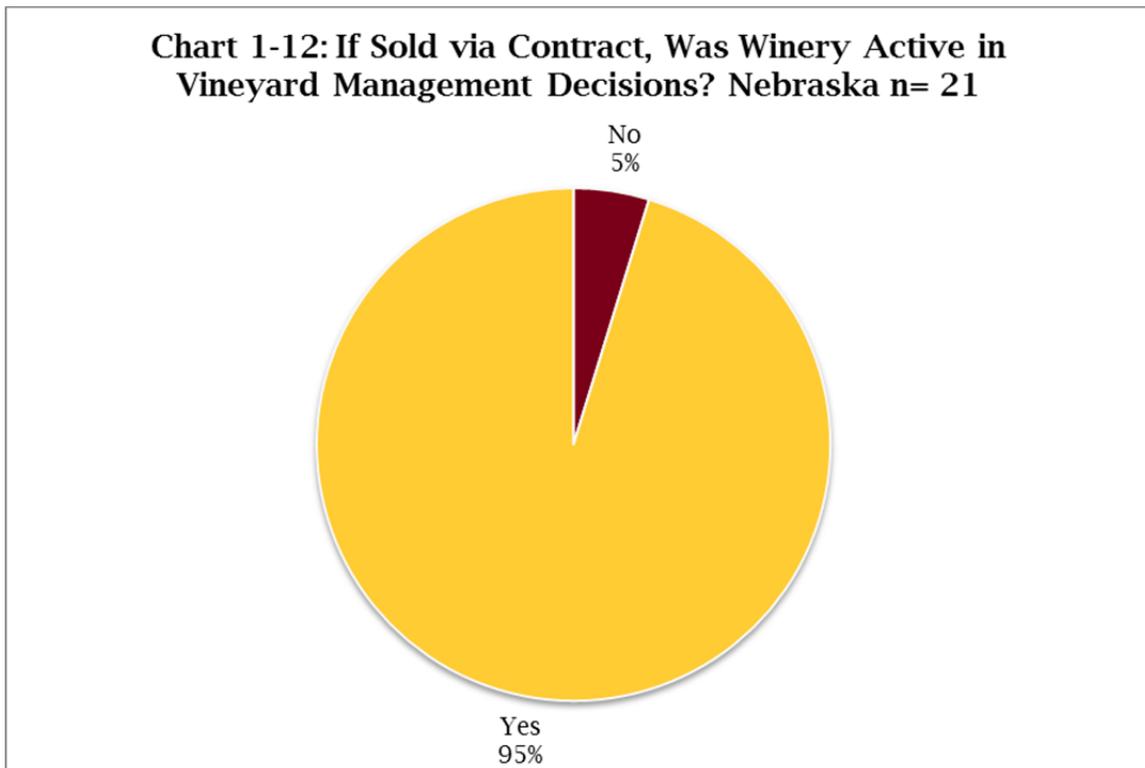


Marketing and Grape Utilization

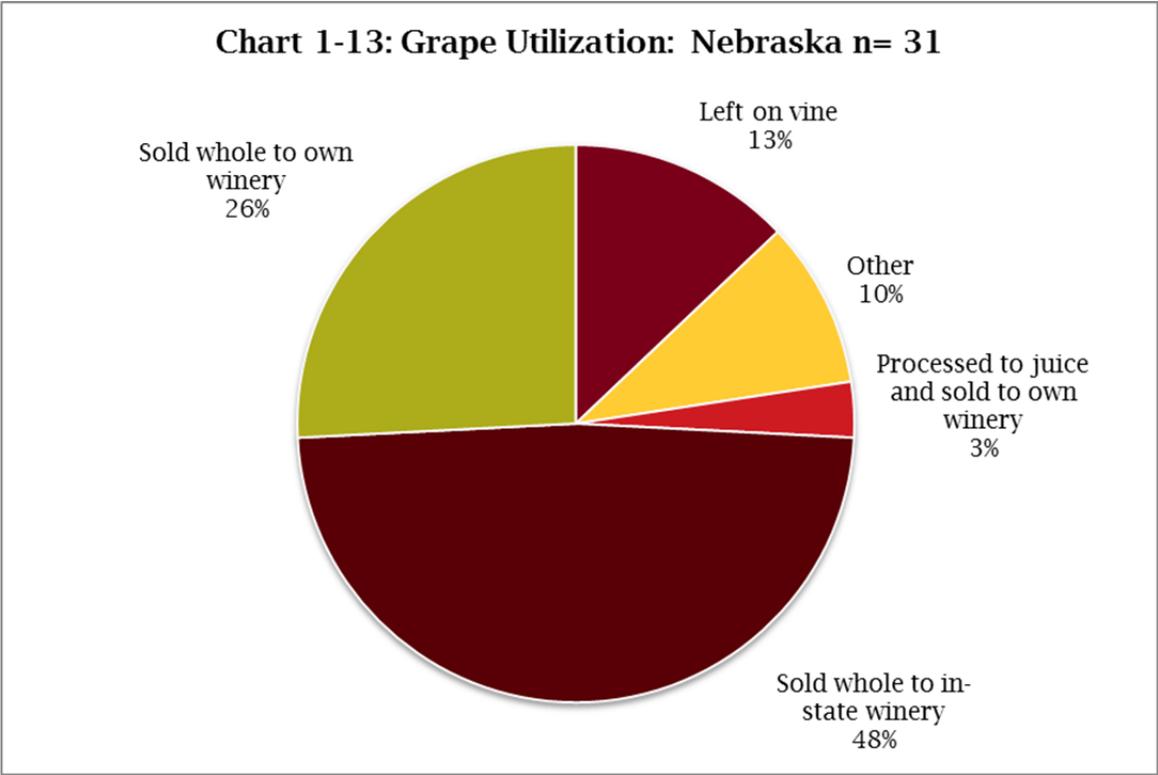
Grape growers in the survey favor contracts as the best method for marketing their grapes (chart 1-11). Growers were asked which market arrangements they used to sell their grapes. They could select more than one choice. The most commonly used method, selected by 18 growers, was to sell via a contract with a winery. Also commonly used were sales through their own winery and sales via networking. No growers indicated using a broker to sell their grapes.



Growers that contract with wineries to market their grapes overwhelmingly are interacting with the winery to make management decisions, as shown in chart 1-12.



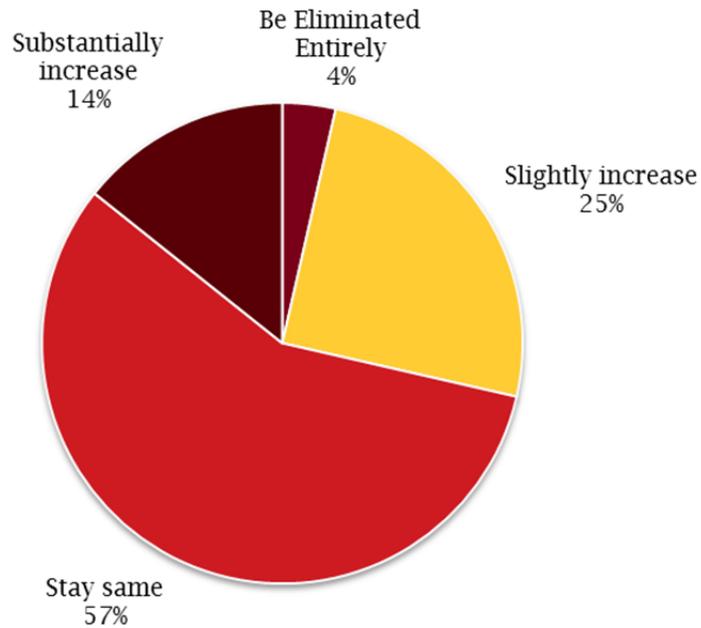
The most common arrangement for responding vineyards is to sell their grapes in a whole berry format (see chart 1-13). Forty-eight percent sold their berries whole to an in-state winery. Another 26 percent sold their grapes whole to their own winery. This reinforces the knowledge that grape growing and 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 the state.



Future Plans

As discussed earlier, the rapid growth in the number of vineyards appears to be slowing in Nebraska. Current vineyard owners appear to be reflecting this trend. While nearly 40 percent of vineyards plan to expand in the next 2 years, the majority are planning for slight increases. Over half of vineyards plan to stay the same size. Only four percent intend to decrease operations, chart 1-14.

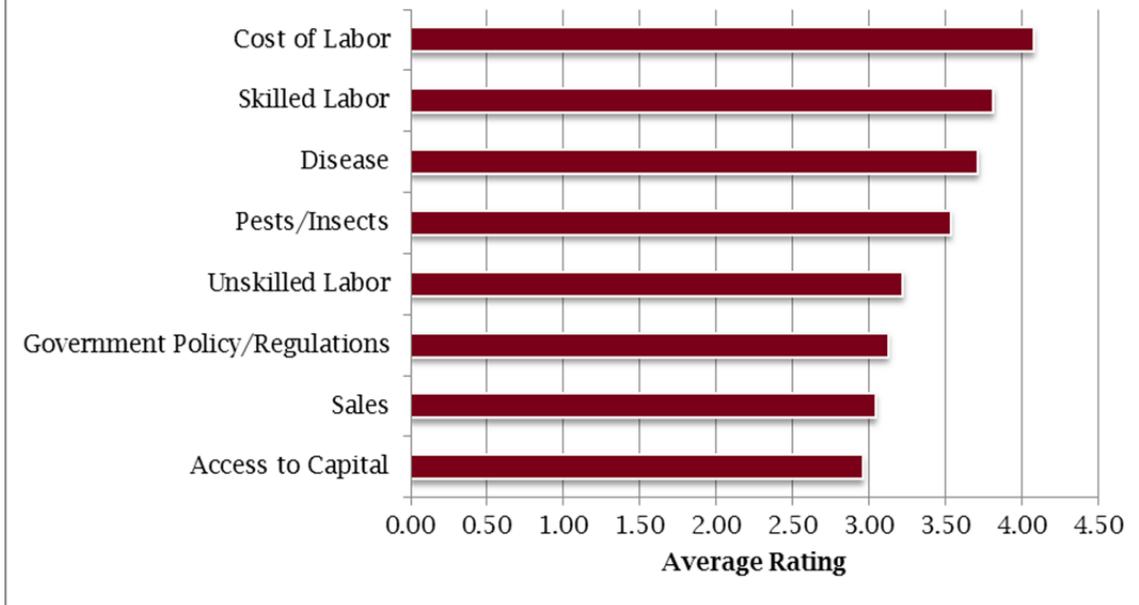
Chart 1-14: Over the Next Two Years, My Vineyard Will... Nebraska n= 28



Grape growers responding to the survey indicate that the biggest challenges to their vineyard operations are related to 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 cost of labor an average score of 4.1 and availability of skilled labor an average score of 3.8. Access to capital and sales do not seem to be significant issues for the responding growers in Nebraska.

When asked what other challenges they face, grape growers indicated time, finding labor, and transition planning to be issues.

**Chart 1-15: The Following is a Challenge to the Growth and Development of my Vineyard: Nebraska
(1=Strongly Disagree, 5=Strongly Agree)**

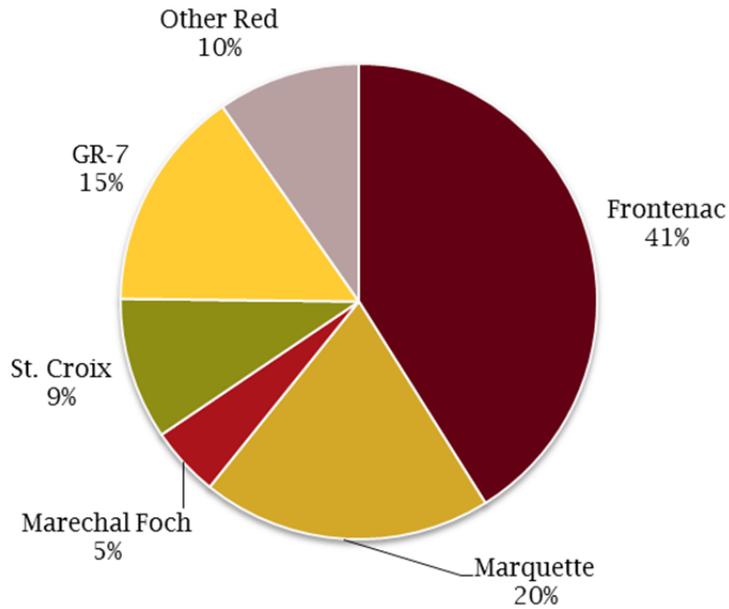


Grape Varieties

Survey participants reported 59,500 planted vines in their vineyards. Of these, the majority (66 percent) are planted in cold-hardy varieties. Of the cold-hardy varieties, 16,200 vines are red cultivars. The remaining cold-hardy vines, 22,900, are white cultivars. Chart 1-16 depicts total reported planted vines of cold-hardy red varieties. Frontenac grapes comprise 41 percent of the total planted cold-hardy red varieties. Marquette and GR-7 comprise 20 percent and 15 percent respectively. The Marquette grape was released in 2006. Nebraska appears to have one of the highest adoption rates of GR-7 in all the Northern Grapes Project states.

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 3,440 red cultivar vines are older than 10 years of age, 9,350 are between 4 years and 10 years of age, and 3,360 are younger than 4 years old. Vines younger than 4 years of age have yet to reach maturity and produce a full crop. It is notable that the number of red vine plantings appears to have decreased in the last 4 years.

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



Further, the table reflects the rapid growth of the Marquette grape variety observed in other Northern Grapes Project states. Although the Marquette grape has not grown to represent the highest percent of red grape plantings, it has grown significantly in its share. Ten years ago, there were no Marquette vines in the ground. Within the last four years, the responding vineyards alone report planting nearly 2,500 vines. The other prominent cold-hardy red variety, Frontenac, has been planted in fewer numbers in recent years.

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

Variety	Vines, Younger than 4	Vines, Between 4 and 10 Years	Vines, Older than 10	Total
Baltica	0	0	0	-
Beta	0	0	0	-
Frontenac	544	4,045	2,045	6,634
GR-7	0	1,219	1,219	2,438
King of the North	0	30	0	30
Leon Millet	120	195	0	315
Marechal Foch	0	721	50	771
Marquette	2,544	640	0	3,184
Petite Pearl	0	360	0	360
Sabrevois	0	145	0	145
St. Croix	150	1,330	75	1,555
Valiant	0	45	50	95
Other Red	0	625	0	625
Total	3,358	9,355	3,439	16,152

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

Table 1-3 lists the estimated number of planted acres of cold-hardy red cultivars in Nebraska. These numbers have been extrapolated to represent all vineyards in Nebraska. In Nebraska, there are an estimated 186 acres of grapes planted in cold-hardy red varieties. The Frontenac grape is planted on 76 of those acres.

Table 1-3: <u>Estimated</u> Planted Acres of Cold-Hardy Red Varieties for <u>All</u> Vineyards in Nebraska	
Variety	Total
Baltica	-
Beta	-
Frontenac	76.4
GR-7	28.1
King of the North	0.3
Leon Millet	3.6
Marechal Foch	8.9
Marquette	36.7
Petite Pearl	4.1
Sabrevois	1.7
St. Croix	17.9
Valiant	1.1
Other Red	7.2
Total	186.0
The totals in this table have been extrapolated to represent all vineyards in Nebraska.	

Chart 1-17 illustrates the total planted vines of cold-hardy white varieties. Edelweiss (47 percent) and La Crosse (22 percent) are the most commonly planted vines by the reporting vineyards.

Chart 1-17: Total Planted Cold-Hardy Vines, White Varieties: Nebraska

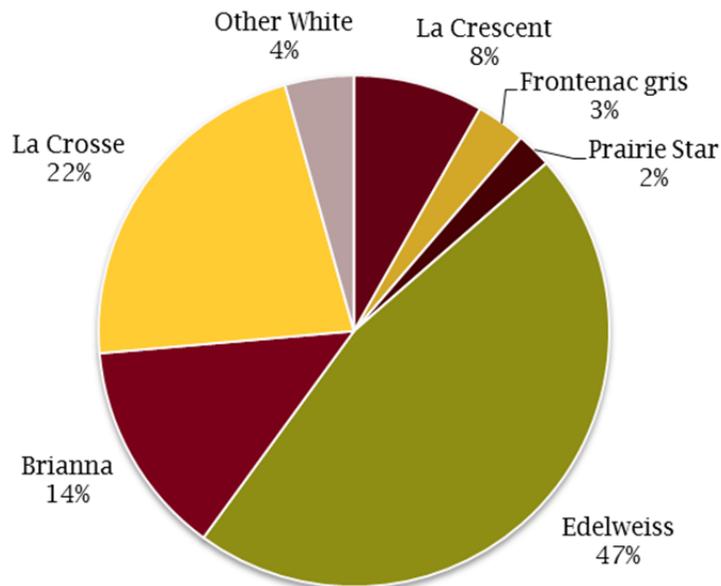


Table 1-4 reports the total reported planted vines of cold-hardy white cultivars. These figures represent only what the vineyards who answered the survey reported. Responding vineyards report 7,700 vines older than 10 years in the ground, 11,600 vines of age between 4 and 10 years, and nearly 3,700 vines younger than 4 years. As with the red varieties, it appears plantings of cold-hardy white varieties have also decreased in the last four years.

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

Variety	Vines, Younger than 4	Vines, Between 4 and 10 Years	Vines, Older than 10	Total
Brianna	336	1,879	900	3,115
Edelweiss	1,794	4,584	4,274	10,652
Espirit	255	0	0	255
Frontenac Blanc	0	0	0	-
Frontenac Gris	116	368	231	715
Kay Gray	0	0	0	-
La Crescent	1,100	785	0	1,885
La Crosse	0	3,070	1,980	5,050
Louise Swenson	0	0	0	-
Petite Amie	0	165	0	165
Prairie Star	0	515	0	515
St. Pepin	50	116	90	256
Other White	50	75	200	325
Total	3,701	11,557	7,675	22,933

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

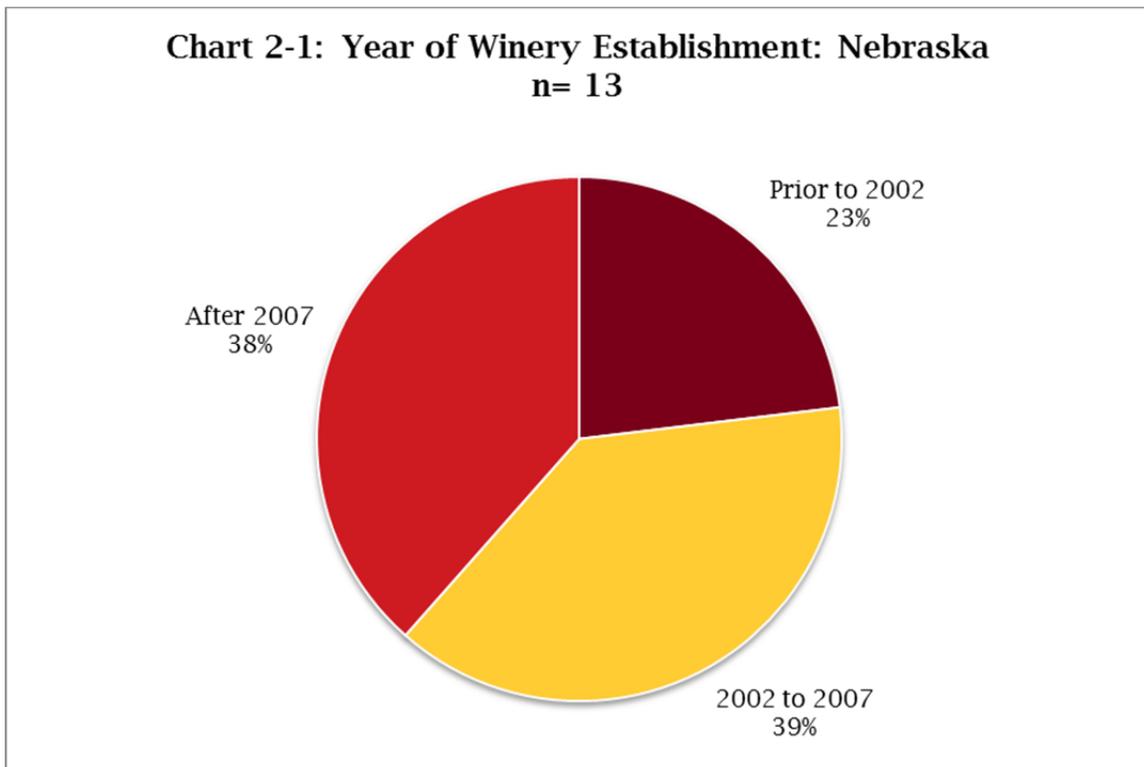
Table 1-5 lists the estimated number of planted acres of cold-hardy white cultivars in Nebraska. These numbers have been extrapolated to represent all vineyards in Nebraska. Edelweiss is planted on 123 acres and La Crosse on 58 acres.

Table 1-5: <u>Estimated</u> Planted Cold-Hardy Acres of White Varieties for <u>All</u> Vineyards in Nebraska	
Variety	Total
Brianna	35.9
Edelweiss	122.7
Espirit	2.9
Frontenac Blanc	-
Frontenac Gris	8.2
Kay Gray	-
La Crescent	21.7
La Crosse	58.2
Louise Swenson	-
Petite Amie	1.9
Prairie Star	5.9
St. Pepin	2.9
Other White	3.7
Total	264.1
The totals in this table have been extrapolated to represent all vineyards in Nebraska.	

WINERY CHARACTERISTICS

Fifteen Nebraska wineries responded to the Northern Grapes Project survey. According to the Alcohol and Tobacco Tax and Trade Bureau (TTB), there were 29 licensed wineries in Nebraska.² Based on these statistics, the response rate for this survey was 52 percent. However, not all respondents reported being licensed at the time of the survey. Our dataset likely includes new wineries still in the start-up phase.

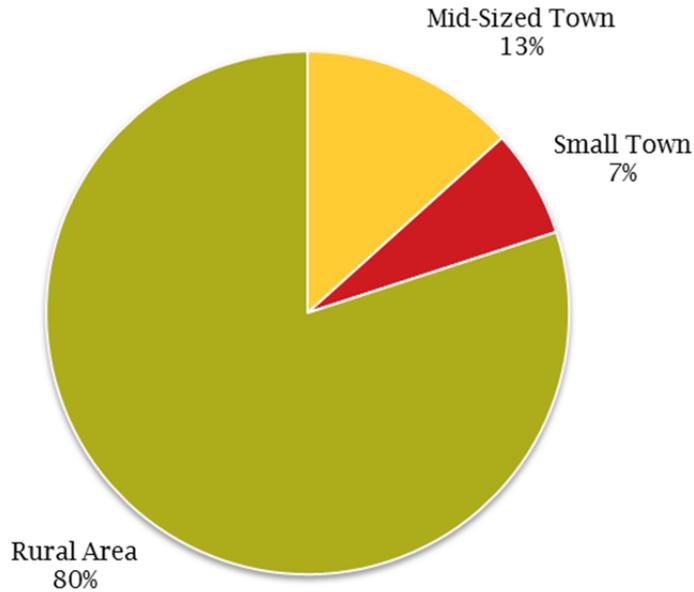
As shown in chart 2-1, growth in the number of wineries in Nebraska continues. Approximately 1 in 5 wineries existed prior to 2002. While growth in the number of vineyards appears to be tapering off, winery growth appears to be continuing.



The majority of Nebraska's wineries (80 percent) are located in rural areas, outside of cities and urban centers, see chart 2-2. The rest are located in small (population under 2,500) and mid-sized towns (populations of under 20,000 residents).

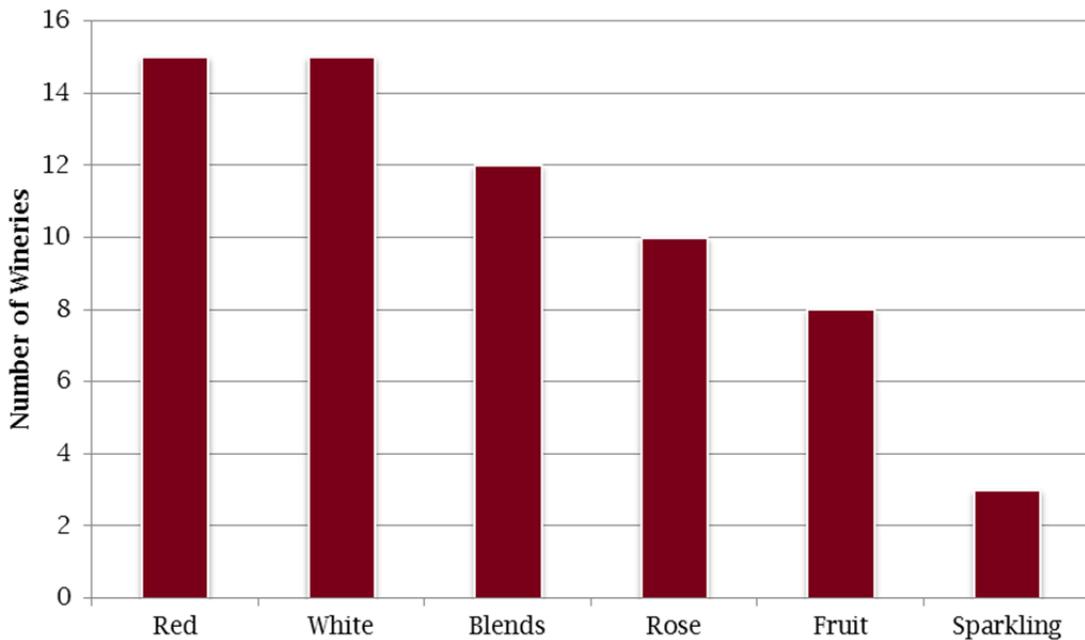
² The number of wineries in each state was taken from a publication by WineAmerica. The publication uses data from the United States Alcohol and Tobacco Trade and Tax Bureau for 2010. This data is the basis of calculations because it provides consistency and uniformity across all states in the Northern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

Chart 2-2: Which Setting Best Describes Your Winery
Location: Nebraska n= 15

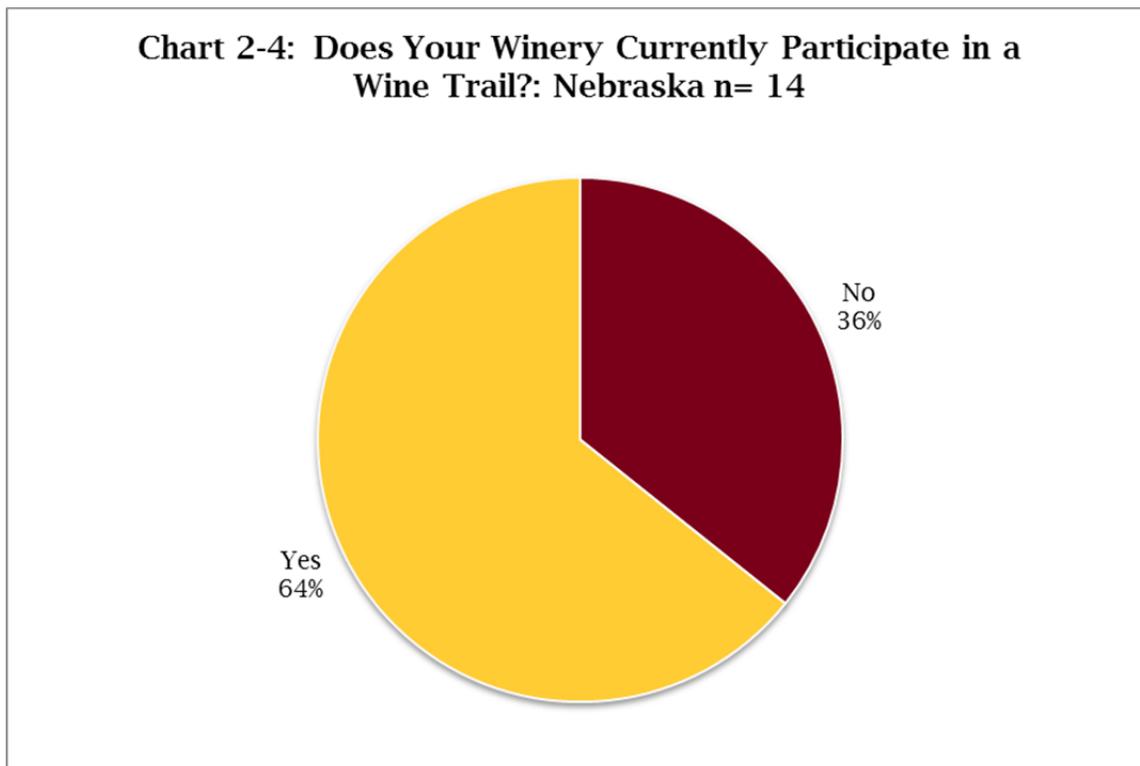


All Nebraska wineries are producing red and white wines, see chart 2-3. Wineries are also commonly producing blends, rose, and fruit wines. Study results show wineries in Nebraska produced 172,000 gallons of wine in 2011 or an average of 5,900 gallons per winery.

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

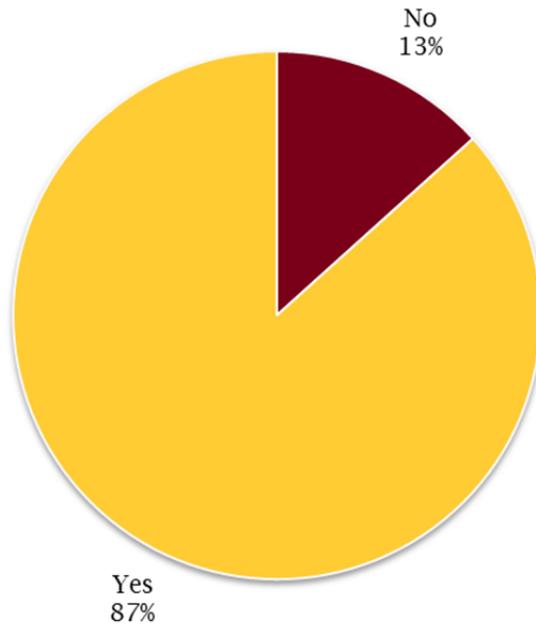


Over two-thirds of Nebraska wineries currently participate in a wine trail. See chart 2-4. This is a higher percentage than other states in the Northern Grapes Project. Wine trails are one method wineries use to draw visitors to their tasting room. Since many wineries in Nebraska are in rural areas, the need to participate in a wine trail may be higher.

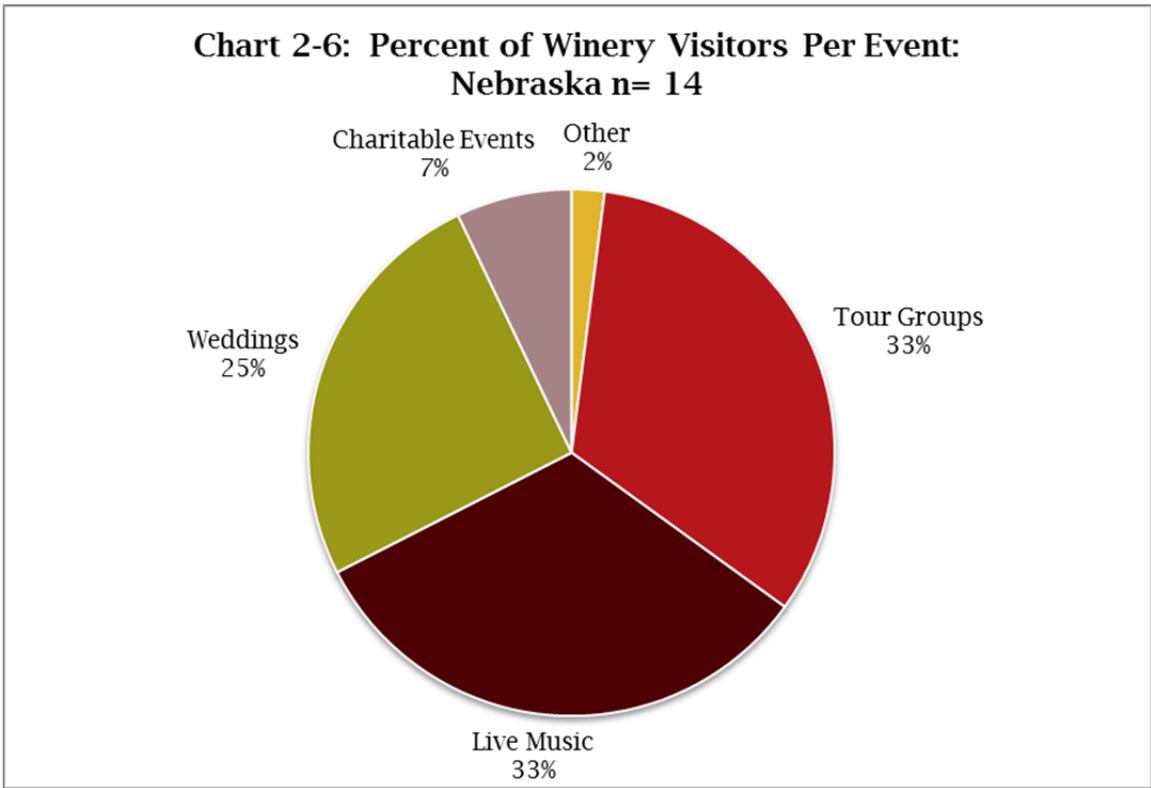


The majority of Nebraska wineries (87 percent) operate a tasting room in conjunction with their winery, see chart 2-5. Ninety-three percent of wineries charge for tastings. Eighty percent of the wineries offer food with their wine service. On average, each winery served 5,900 tasting room customers. Wineries estimate that 42 percent of their tasting room visitors are repeat customers.

**Chart 2-5: Does Your Winery Operate a Tasting Room?:
Nebraska n= 15**



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 (15) hosted 13,400 guests at winery events, roughly half who were from outside the local area. The breakdown of which events these guests attended is shown in chart 2-6. Live music events and tour groups drew the most people to the responding wineries in 2011.

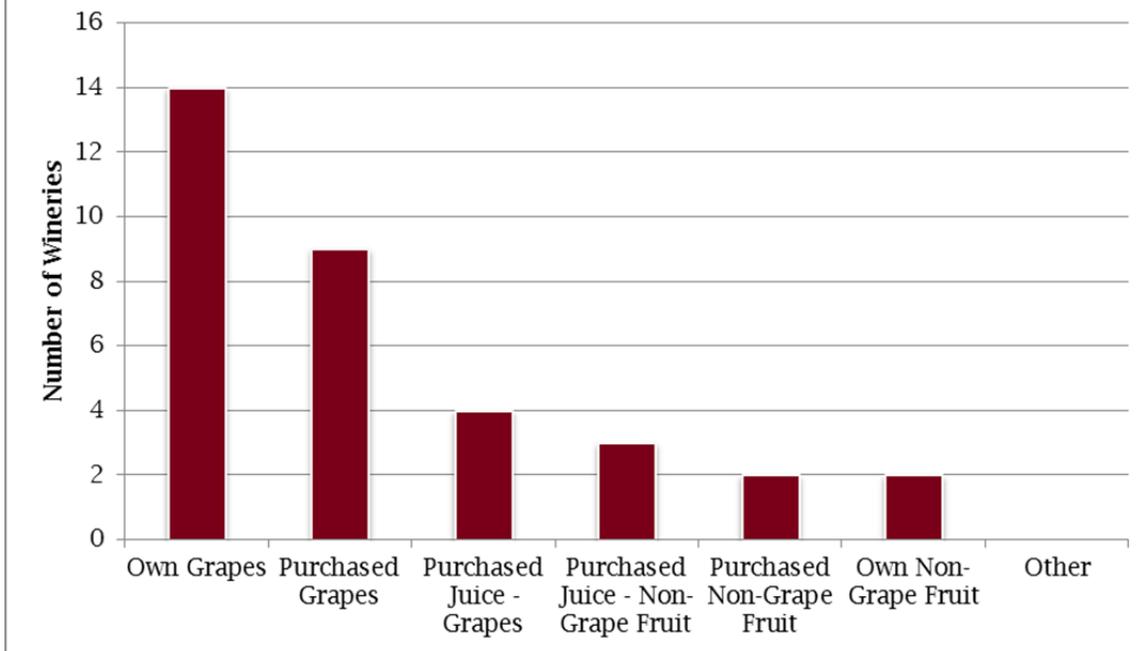


Grape Acquisition

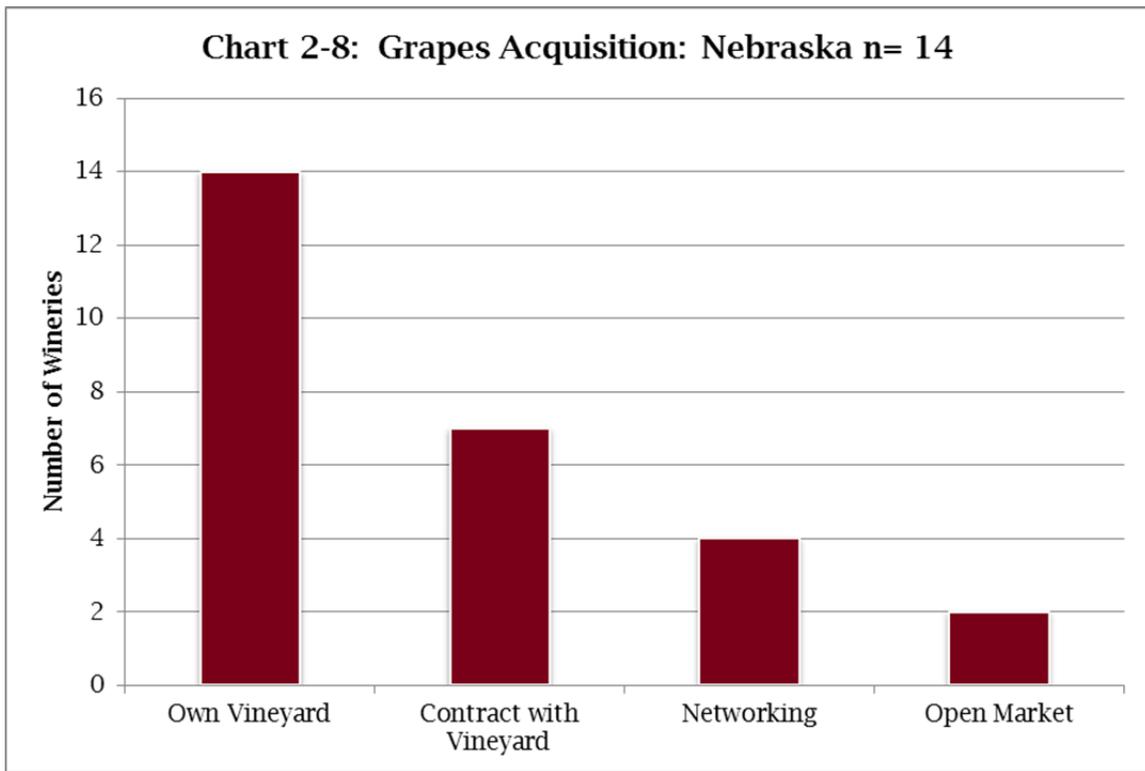
Wineries in Nebraska purchased \$1.4 million of grapes in 2011, from their own vineyards and from other vineyards. On average, each winery spent \$47,000 to buy grapes. Sixty-six percent of the grapes used by these wineries were cold-hardy varieties.

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

**Chart 2-7: Grapes and Wines Used in Wine Production:
Nebraska n= 14**



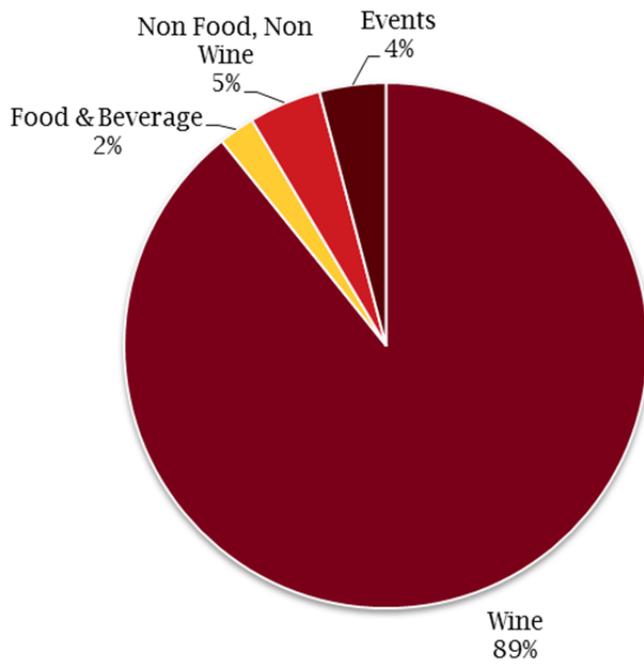
As depicted in chart 2-8, wineries primarily acquire their grapes from their own vineyards. Those who purchase grapes use a combination of contracts with vineyards, the open market, and networking. Purchasing grapes via a broker is not used as an acquisition tool by these wineries.



Winery Sales and Production

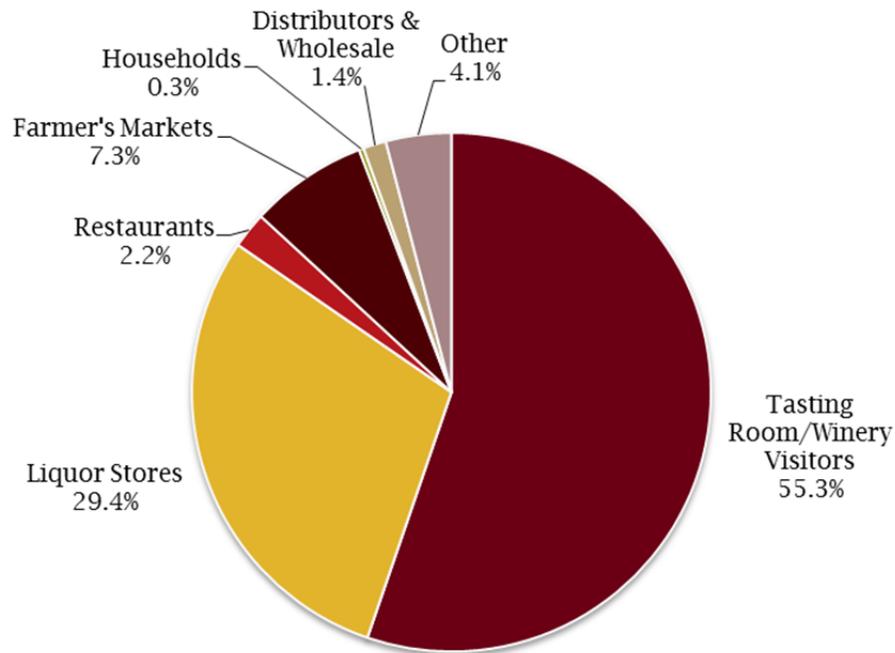
In total, wineries in Nebraska had sales of \$9.7 million in 2011, an average of \$333,000 per winery. Of total sales, \$6.4 million were generated from wines crafted from cold-hardy grapes. Wine sales, including bottles sold and tasting room fees, are the primary source of revenue for wineries, accounting for 89 percent of all sales (see chart 2-9). Wineries produced, on average, 5,900 gallons of wine.

Chart 2-9: Winery Sales by Category: Nebraska n= 14



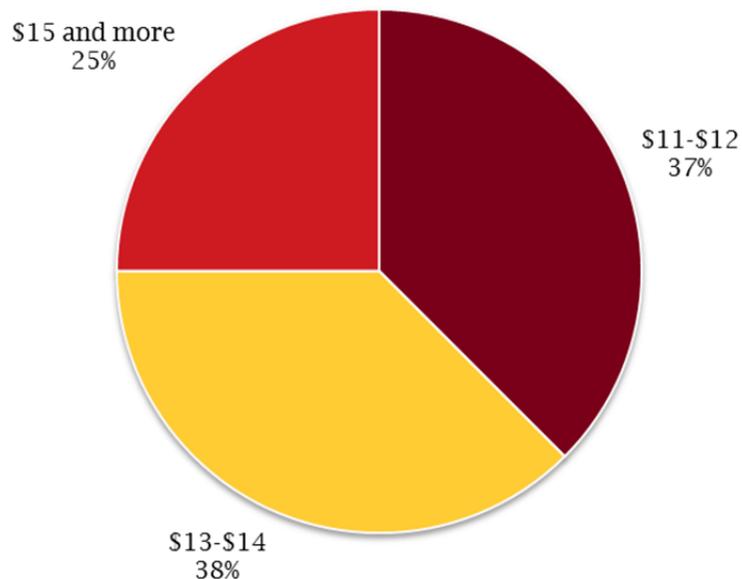
Wineries in Nebraska sold an estimated 1.6 million bottles of wine in 2011 or an average of 19,400 bottles per winery. Over 80 percent of wineries operate a tasting room and approximately half of their sales are through the tasting room or to winery visitors, as shown in chart 2-10. Nearly one-third of sales are via distributors and liquor stores.

Chart 2-10: Percent of Wine Sales: Nebraska n= 14

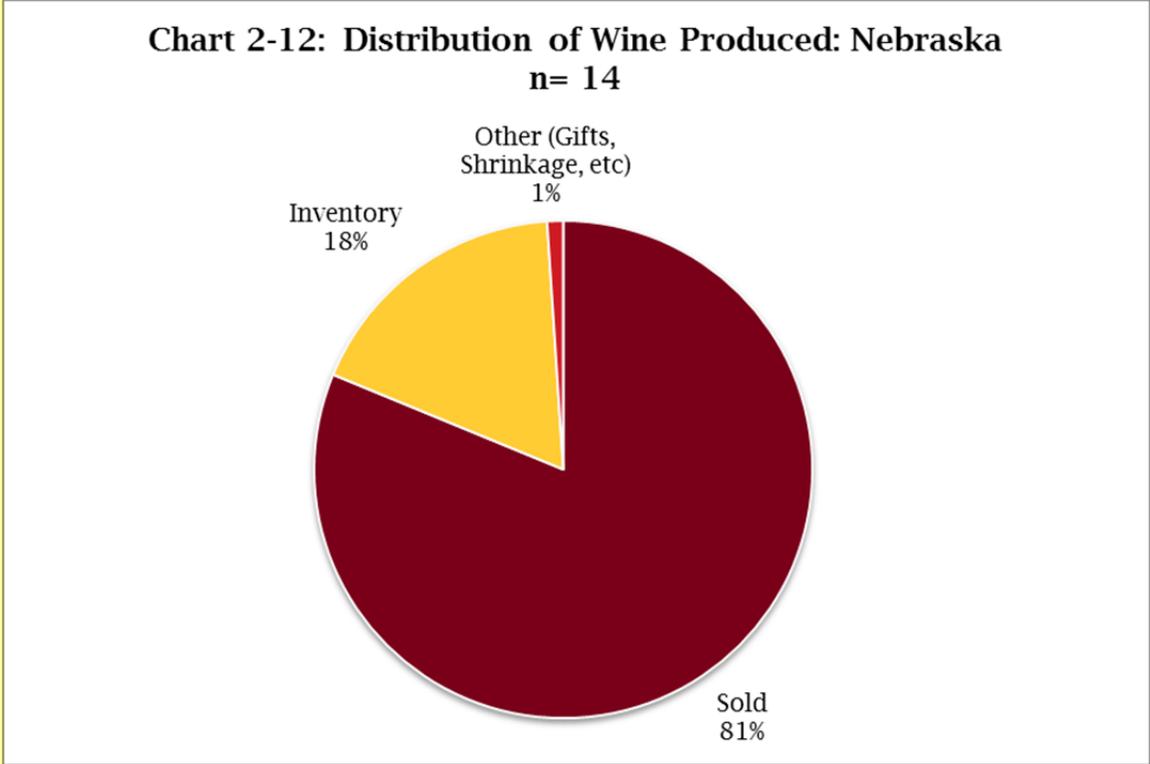


Wineries reported the average price per bottle of wine sold was \$13 in 2011. Chart 2-11 shows the distribution of average wine sale prices. All wineries reported the price per bottle of wine was between \$11 and \$15.

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

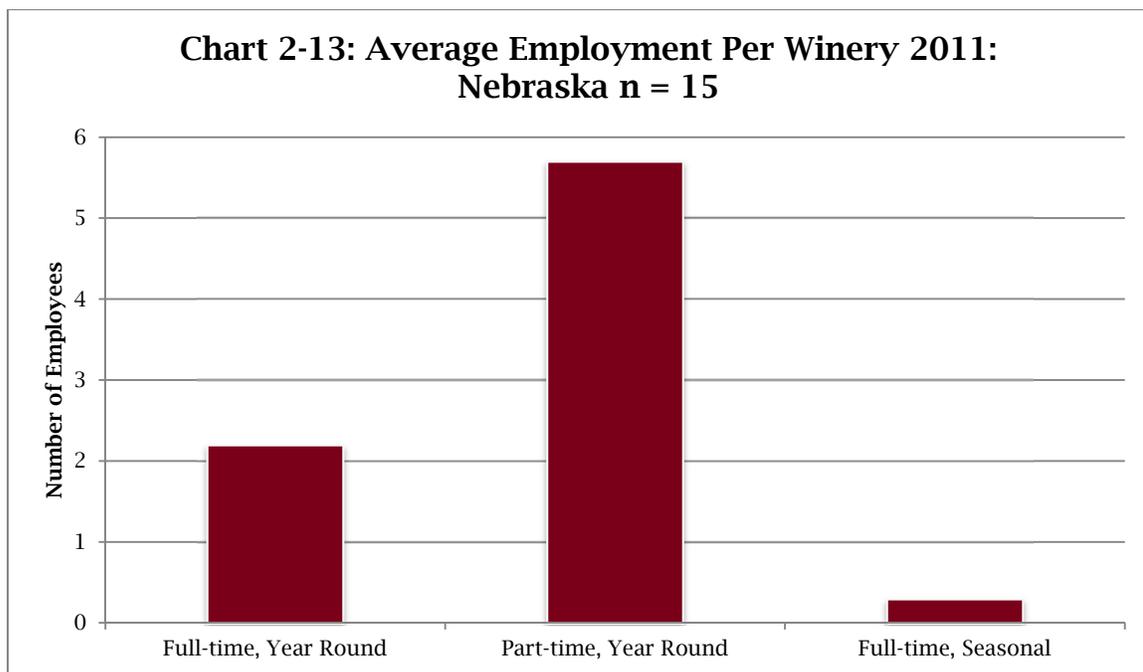


As mentioned, the average responding winery produced 5,900 gallons of wine. The majority of the wine (81 percent) produced was sold, see chart 2-12. Wineries put eighteen percent of the gallons of wine produced into inventory. A small percent (1 percent) of wine produced was utilized in other ways (e.g. gifts, donations, shrinkage, etc.).



Wineries in Nebraska employ 237 individuals. On average, each winery employs 9 individuals; 2 full-time year-round people, 6 part-time, year-round people, and 1 full-time, seasonal person, see chart 2-13.

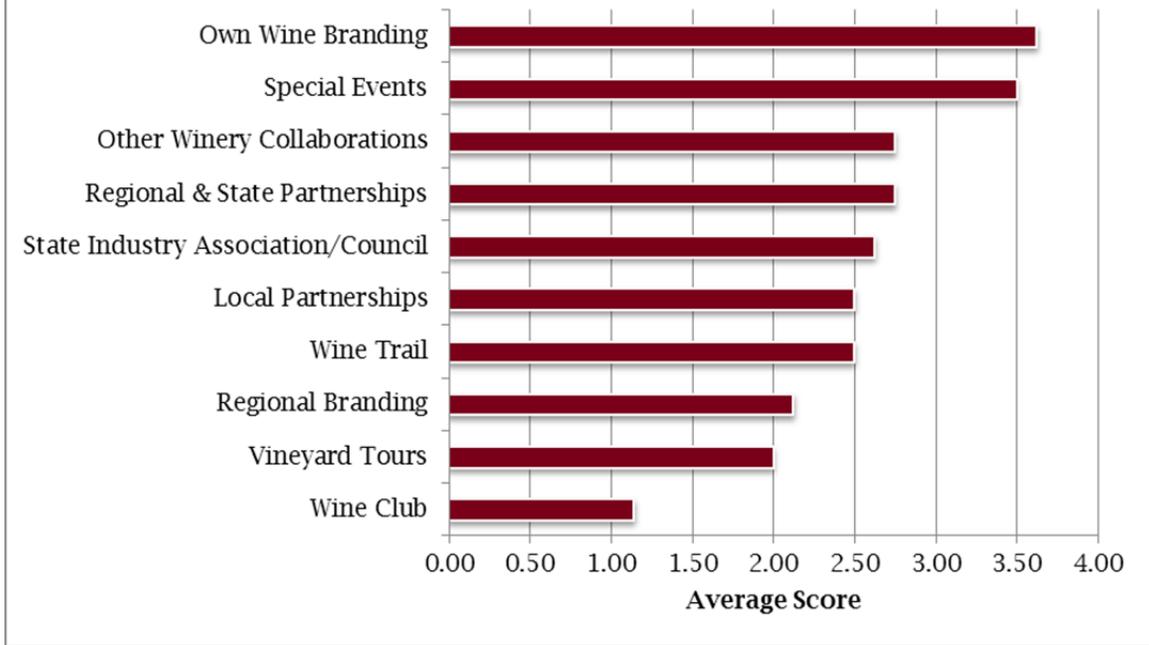
In 2011, wineries paid \$830,000 in labor income (includes wages, salaries, and benefits) with an average of \$29,000 per winery.



Winery Marketing and Collaboration

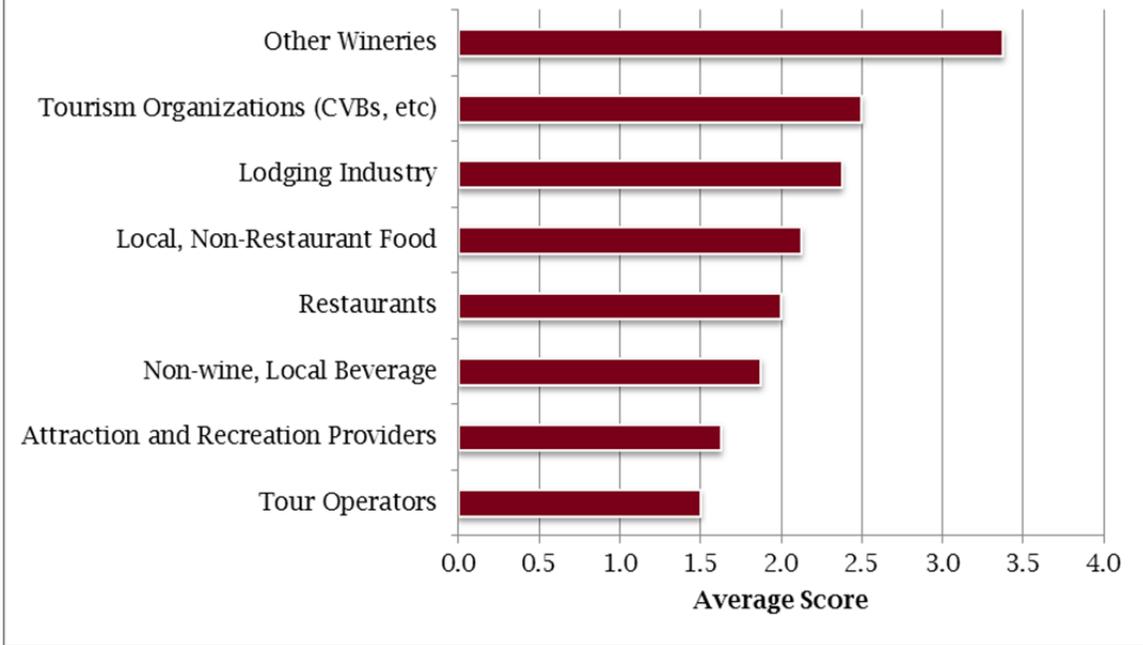
Wineries were asked to rate a list of marketing strategies on a scale where 1 indicated the strategy was “unimportant” for their marketing and 5 indicated it was “very important”. As shown in Chart 2-14, winery owners believe that branding their own wine is the most important marketing strategy they can employ, assigning it an average score of 3.63. Special events were also assigned relatively high scores. Winery owners assigned the lowest average scores to wine clubs, vineyard tours, and regional branding initiatives. Eighty-seven percent of wineries offer vineyard tours.

**Chart 2-14: Importance in Overall Marketing Strategy:
(1=Unimportant, 5=Very Important) Nebraska n= 8**



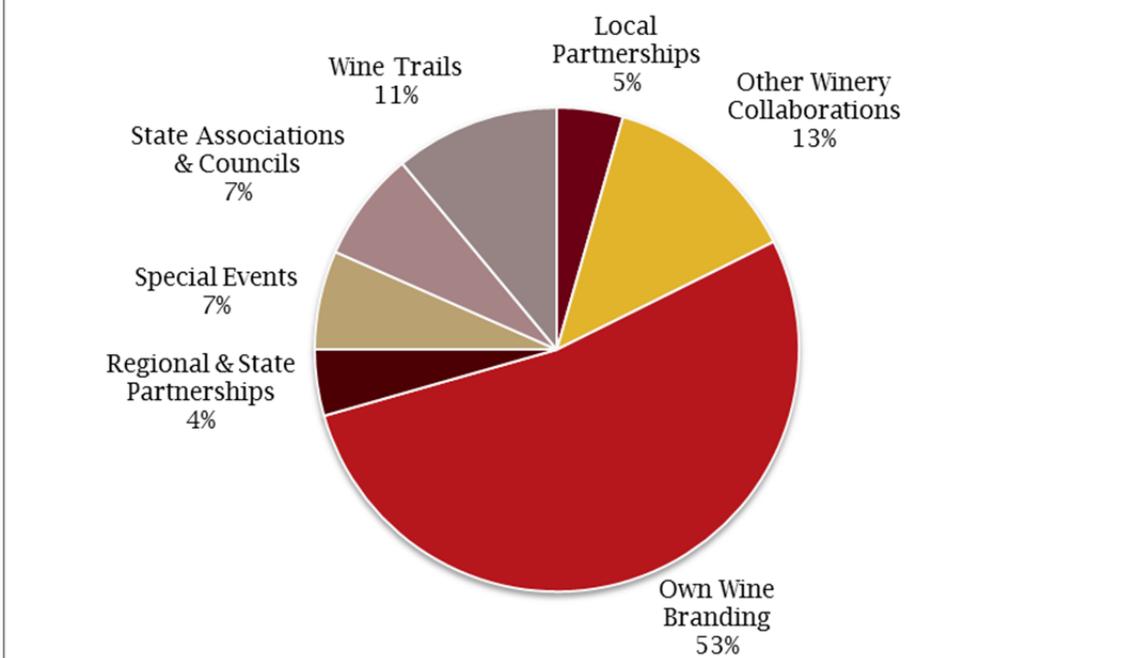
Wineries were also asked about their current collaboration efforts. They were asked, on a scale where 1 equals “none” and 5 equals “a great deal”, “to what extent do you currently collaborate with the following entities?” The highest level of collaboration is among wineries, as shown in chart 2-15. This chart would indicate there is room for improved collaboration in Nebraska winery operations, as all other collaborations earned a score below 2.5.

Chart 2-15: Extent of Collaboration (1=None, 5=A Great Deal) Nebraska n= 8

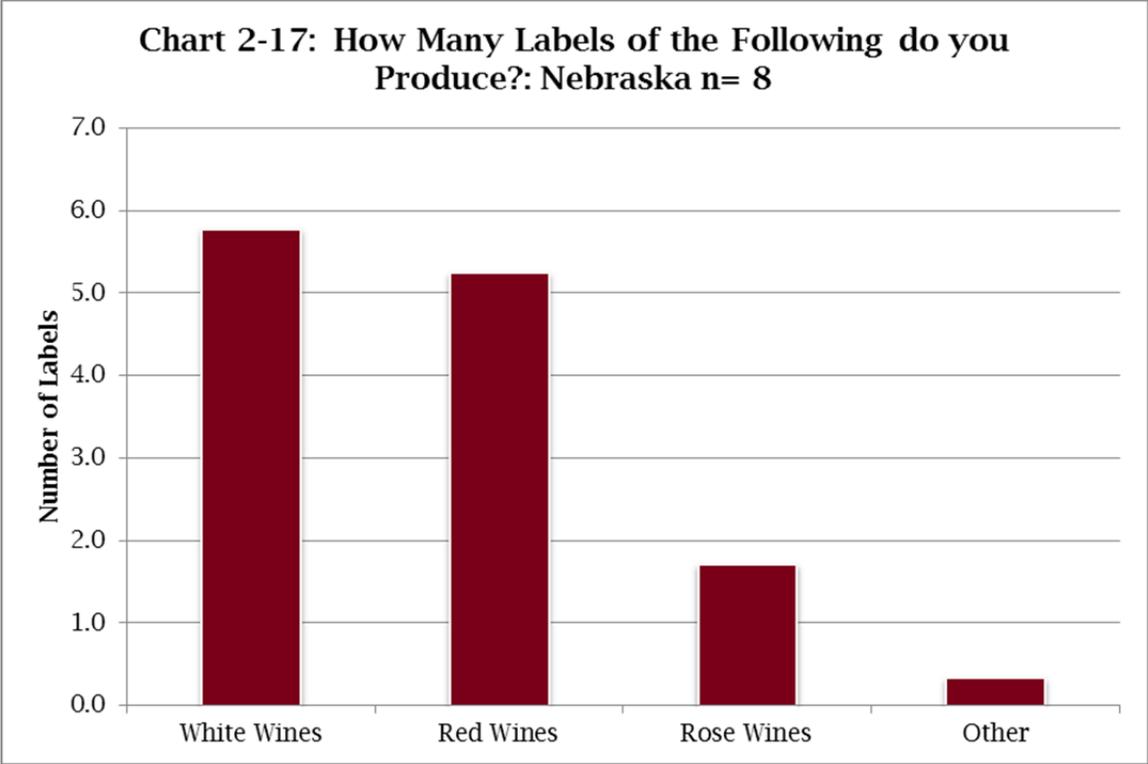


Wineries were then asked how various marketing arrangements influenced their sales. Wineries overwhelmingly indicated that their own wine branding efforts drove the majority (53 percent) of their sales. Other winery collaborations drive an estimated 13 percent of sales and wine trails 11 percent. Chart 2-16 illustrates this point.

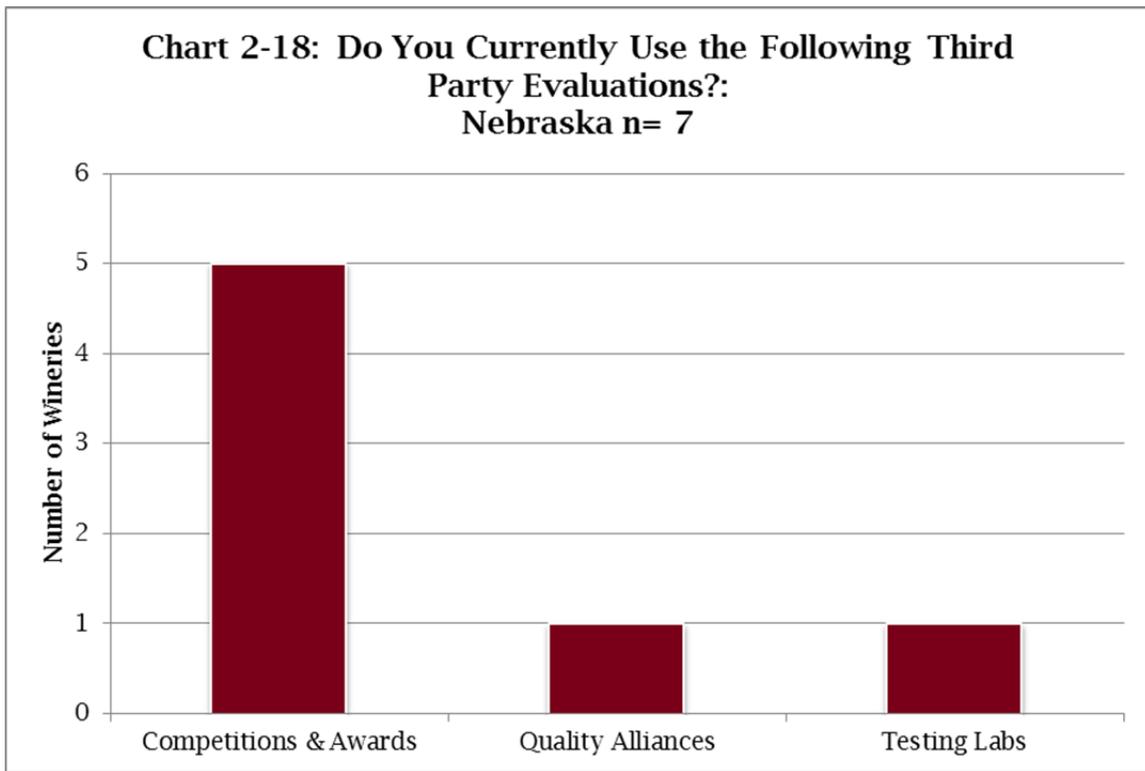
Chart 2-16: What Percent of Current Sales are Attributable to the Following?: Nebraska n= 8



As mentioned earlier, the most commonly produced wines are white and red wines. On average, each winery is bottling 5 labels of each, as shown in chart 2-17.



Competitions 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, shown in chart 2-19, indicate the potential for continued moderate growth in the industry, as 62 percent of wineries plan to expand slightly 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 2-19: Which Best Describes Your Plans for the Next Five Years?: Nebraska n= 8

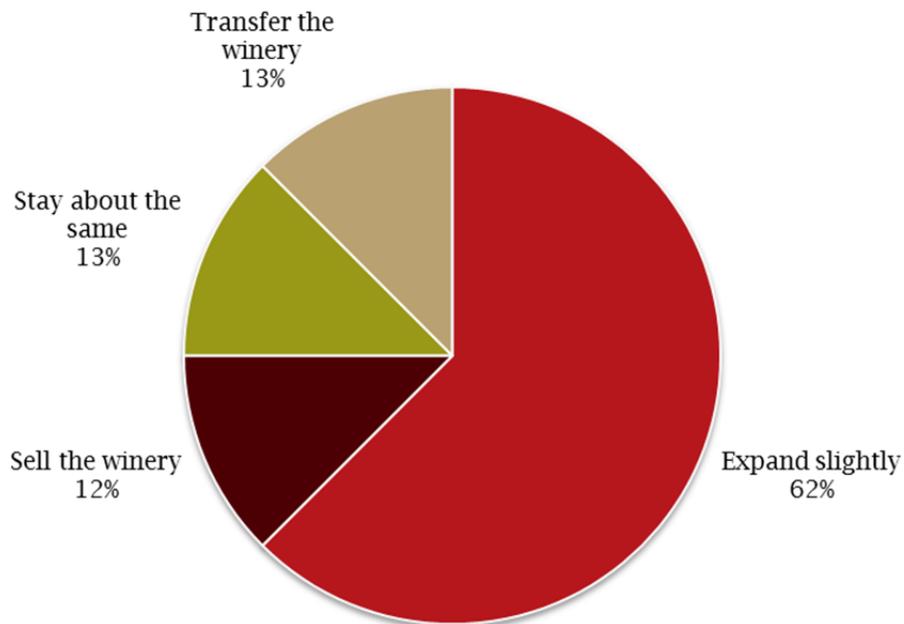


Chart 2-20 depicts winery owners' responses to a question about the challenges to the growth and development of their winery. On a scale where 1 equals "strongly disagree" and 5 equals "strongly agree", wineries were asked to rate a list of issues in relation to each as a challenge to the growth and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

Chart 2-20: The Following is a Challenge to the Growth and Development of my Winery (1=Strongly Disagree, 5=Strongly Agree): Nebraska n= 8



ECONOMIC CONTRIBUTION OF VINEYARDS AND WINERIES IN NEBRASKA

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 Nebraska, 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 (29 in Nebraska) and vineyards (216 in Nebraska) to determine the total direct effect for the state.

Wineries and vineyards contribute to Nebraska'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 grape growing and winery industries in Nebraska.

Nebraska vineyards, in 2011, spent \$3.8 million within the state to operate. This included \$700,000 of payments to their 290 employees. This equates to an average wage of \$2,400 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. They report employing less than 1/10th of a full-time position and less than 1 part-time, year round position per vineyard.

Nebraska wineries, in 2011, spent \$8.3 million within the state for their operations. Of this, \$830,000 went to their 240 employees. Total winery sales, as mentioned in the winery summary, were \$9.7 million in 2011. Of this, \$1.4 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 6 part-time, year-round people, as shown in chart 2-13.

Finally, winery tourists in 2011 spent \$4.7 million during winery visits. These expenditures supported 90 jobs in Nebraska which in total amounted to \$1.7 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, Nebraska, 2011

	Vineyards	Wineries	Winery Tourists
Output	\$3,800,000	\$8,300,000	\$4,700,000
Employment	290	240	90
Labor Income	\$700,000	\$830,000	\$1,700,000

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 Nebraska was \$27.3 million. This includes 1,060 jobs and \$5.6 million in labor income, as shown in table 3-2.

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

	Vineyards	Wineries	Winery Tourists	Total
Output	\$6,500,000	\$12,800,000	\$8,000,000	\$27,300,000
Employment	540	400	120	1,060
Labor Income	\$1,300,000	\$1,800,000	\$2,500,000	\$5,600,000

Estimates by University of Minnesota

Vineyards in Nebraska contributed \$6.5 million to the state economy in 2011. This included payments to workers in the amount of \$1.3 million. The vineyard industry contributed to the employment of 540 people.

Wineries in Nebraska contributed \$12.8 million in economic activity to the state in 2011. Wineries generated employment for 400 workers who received \$1.8 million in labor income.

Winery tourism also contributed significantly to the Nebraska state economy. Spending by tourists visiting Nebraska wineries generated \$8.0 million in economic activity. This includes \$2.5 million in labor payments and 120 jobs.

Cold-Hardy Related Economic Effects

Surveyed grape growers report 66 percent of the grapes grown in Nebraska are of cold-hardy varieties (see appendix 1 for a definition of cold-hardy). Grape growers indicate 66 percent of the grapes grown in Nebraska are from the cold-hardy cultivars, therefore, the assumption is that wineries use 66 percent of cold-hardy grapes in wine production. In 2011, cold-hardy grapes contributed \$17.8 million to the output of the state of Nebraska including \$3.3 million in labor income. They contributed 670 jobs, as shown in table 3-4.

Table 3-4: Total Economic Effects of Vineyards, Wineries, and Winery Tourists Derived from Cold-Hardy Grapes, Nebraska, 2011

	Vineyards	Wineries	Winery Tourists	Total
Output	\$4,300,000	\$8,200,000	\$5,300,000	\$17,800,000
Employment	360	230	80	670
Labor Income	\$890,000	\$820,000	\$1,600,000	\$3,310,000

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 goal was to establish industry baselines and quantify the economic contribution of the industries. This report presents the results for Nebraska.

In 2011, the total economic contribution of the grape growing and winery industries in Nebraska was \$27.3 million. This includes 1,060 jobs and \$5.6 million in labor income. Vineyards contributed \$6.5 million to the total, wineries \$12.8 million, and winery tourists \$8.0 million.

Indications are that the vineyard industry in Nebraska is maturing, especially when compared to the vineyard industry in other Northern Grapes Project states. The rate at which vineyards are being established is declining, with the most rapid growth occurring between 2002 and 2007. The majority of vineyards do not have plans to expand in the near future. Those vineyards planning to grow report they will grow at a moderate pace.

Vineyard operators in Nebraska are becoming increasingly sophisticated in their operations and marketing. The majority of vineyards are the primary agricultural operation for their owner. Vineyards in Nebraska rely relatively less on volunteer labor as compared to their counterparts in other states, choosing instead to use paid labor and owner-operator labor. Contracts with wineries are the primary method used to sell grapes.

Vineyard operators' main concerns in regards to the future growth and development of their vineyard relate primarily to labor. The cost of labor and availability of skilled labor are their primary concerns. This differs from most other participating states who report disease and pests/insects as their primary concerns.

The Frontenac grape is the most commonly planted red cultivar and the Edelweiss grape is the most commonly planted white cultivar in Nebraska. The number of Marquette grape plantings is increasing, but not as rapidly as in other project states.

Wineries in Nebraska continue to grow in number. Only 1 in 5 wineries existed prior to 2002. Over one-third of wineries have opened since 2007. Existing wineries are planning for moderate growth. A handful of wineries are looking at transitioning to new ownership, either by selling the winery or transferring the winery to a family member. Wineries report availability of skilled labor and government policies and regulations as the most significant challenges to their future growth and development.

Wineries rely on their own wine branding initiatives and special events to drive sales. Attracting visitors to the winery is an important strategy for wineries in Nebraska. Over half of a winery's sales are through the tasting room. The overwhelming majority of wineries are located in rural areas, thus placing special emphasis on the need for wineries to be a tourism destination.

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 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.

With the number of winery tourists quantified, researchers need to apply an average spending profile to determine total spending by winery tourists. In Nebraska, the spending profiles from a 2009 study published by Dean Runyan Associates were adjusted for inflation and applied to calculate total spending. Total per person spending was estimated at a conservative \$84 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 Nebraska would be greatly enhanced by 1) doing tasting room customer surveys in Nebraska and 2) developing a spending profile specifically for Nebraska winery visitors.