



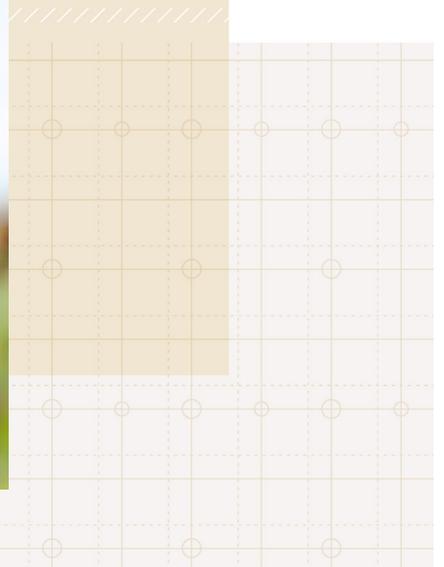
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Minnesota Grape Production Statistics: 2019

ESTIMATES FOR THE YIELD, PRODUCTION, AND PRICING DATA OF THE MINNESOTA GRAPE
INDUSTRY

Authored by Matthew Clark and Brigid Tuck



Minnesota Grape Production Statistics: 2019

SURVEY RESPONSES SHOW THE ESTIMATES FOR YIELD, PRODUCTION, AND PRICING DATA FOR THE EXPANDING MINNESOTA GRAPE INDUSTRY FOR THE 2019 HARVEST SEASON

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Authored by:

Matthew Clark, PhD Assistant Professor of Grape Breeding and Enology, Extension Specialist

Brigid Tuck, Senior Economic Analyst, Center for Community Vitality

Report Reviewers:

Drew Horton, Enology Specialist, University of Minnesota

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INTRODUCTION

Grape growers in Minnesota were invited to participate in a survey in spring 2020 about their grape production from the previous season. Data were collected on the total acres in production, total acres planted, total yields, yields by variety, and the sales and prices received for each cold-hardy variety. These survey results were compared to the five-year variety yield average (2015-2019) to visualize trends for the industry over time.

DEMOGRAPHICS

The survey data were curated to include the results from thirty-four respondents who identified as commercial vineyard owners or operators in Minnesota. Individual vineyard operations were not identified by the survey, but the zip code was used to identify spatial trends across the state. Twenty-one counties in Minnesota were represented in this report (Figure 1). This sample greatly underestimates the total acreage planted in Minnesota as compared to previous reports by these authors, and known plantings throughout the state are not represented in the 2019 data. Unlike states such as California that have a check-off system to collect crush data, Minnesota relies on self-reporting through this survey mechanism.

The total number of reported acres planted in Minnesota was 176.33 acres, with 121.33 acres in production in 2019. The average vineyard size was 5.18 acres with 3.57 acres in production. The largest reported vineyard was 25 acres and the smallest 0.25 acres. The median vineyard was 3.30 acres. Two-thirds of the vineyards were five acres or less. Figure 2 shows the distribution of vineyards by number of acres planted that were reported.

Reporting Vineyards in Minnesota by County

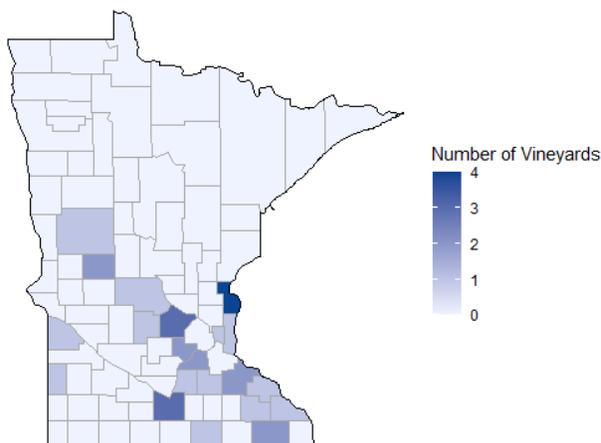


Figure 1. Map of Minnesota counties showing the reporting 34 vineyard operations and their location in the state.

Vineyard Acreage in Minnesota

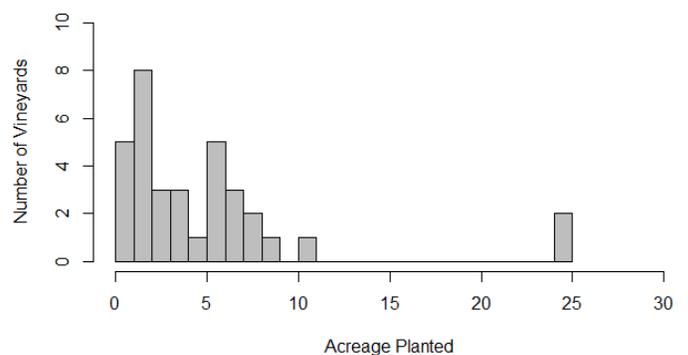


Figure 2. Distribution of reporting vineyards by number of acres planted

Markets

Survey respondents were asked about which market channels were used for selling their grapes. We asked what percent of grapes were sold to the following outlets: own winery, other winery, broker, or other venue. Thirty-eight percent of vineyard owners and operators reported selling exclusively to their own winery. Twenty-six percent sold grapes exclusively to other wineries. Forty-six percent of vineyard operators sold to their own winery and other channels. Other non-winery outlets for grapes including amateur winemakers and for their own use. Some respondents indicated that they were unable to find a buyer. Of all the grapes sold in the state by volume, 65.12 percent were sold to a grower's winery, 32.11 percent to another winery, 1.52 percent to other outlets, and 1.25 percent through a broker or third party (Figure 3).

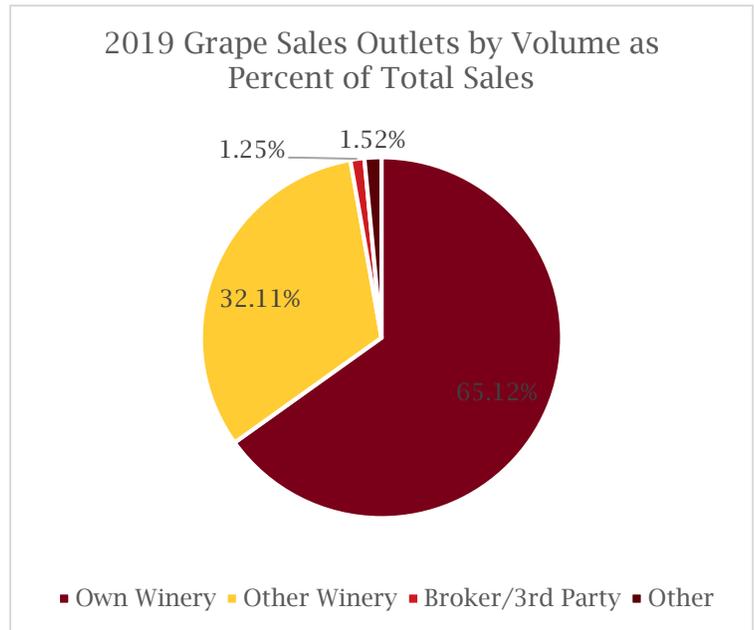


Figure 3. Percentage of grapes sold through various outlets.

2019 Survey Results

The grape growers reported their 2019 production and sales data and is summarized in Table 1. The total yield reported was 510,512 pounds, which equates roughly to 4,208.7 lb/ac or 2.10 ton/ac. The highest yielding vineyard reported 5.5 tons/ac. Crop loss was reported for many growers due to diseases, injury, and feeding by wild animals. The average price for grapes in 2019 (calculated based on the averaged reported by each vineyard) was \$0.74/lb and ranged from \$0.50/lb to \$4.00/lb for table grapes.

Fewer varieties were reported in the 2019 survey than in previous years. 'Marquette' was the highest produced with 102,076 lb (Table 2). This was followed by 'Frontenac' (83,435 lb), 'Frontenac blanc' (75,994 lb), and 'Frontenac gris' (62,276 lb). The aromatic varieties 'La Crescent' and 'Brianna' followed. 'Marquette' comprised the largest proportion of total reported yield at 21.1 percent (Table 3). The "other" category included varieties for which less than four growers reported production of sales including Crimson Pearl, Kay Gray, La Crosse, Leon Millot, Marechal Foch, Sabrevois, Somerset Seedless, TP 3-1-3N, and Verona.

Table 1. Production and price data reported for the 2019 Minnesota grape harvest from 34 respondents.

	Total Acres	Acres Producing	Pounds Produced	Price/lb	lb/Acre
Total	176.3	121.3	510,512	--	--
Average	5.18	3.57	15,015	\$0.76*	4,026
Lower Range	0.25	0.25	200	\$0.50	800
Upper Range	25	24	101,500	\$1.25	14,000

*The average provided from each operation was used in calculating this average.

Pricing data was collected based on grower-reported survey results, and the average price variety was calculated in two ways. First, the average was established following the commonly recognized mean value by variety. The second calculation was the weighted average priced comprised as the total weight of grapes sold at each price by variety by grower. These results were then averaged. The weighted average provides a comprehensive and accurate assessment for prices, as it accounts for the volume of grapes sold at a certain price point. This reduces the influence of small volumes of grapes sold at extremely high or low prices.

The average prices ranged from \$0.73 to \$0.93 for wine grapes (Table 2). The weighted average prices were slightly higher, in general, but was not true for all varieties reported. Because the “Other” category included table grapes such as ‘Somerset Seedless’, the prices were higher. One grower reported selling this variety at \$4.00 per pound. The lowest reported price for wine grapes was \$0.50 and the highest was for ‘Marquette’ at \$1.50 per pound.

This survey does not collect the average acreage planted per variety. However, we are able to follow trends in popularity by assessing the number of growers who reported producing each variety. Twenty-three of the 34 respondents reported growing ‘Marquette’. Other popular varieties include Frontenac, Frontenac blanc, Frontenac gris, and La Crescent. Several newer varieties were reported including Itasca, TP 3-1-3N, Verona, and Crimson Pearl. Most growers reported producing more than a single variety of grape. In addition to being grape growers, eleven survey respondents reported growing several other fruit crops for wine (6) and non-wine making purposes (5). The list of fruit produced included apple (8), raspberry (4), rhubarb (4), pear (2), and one grower each for strawberry, aronia, bush cherry, blueberry, elderberry, red currant, and black currant.

Table 2. Production and price data by variety for Minnesota 2019 grape harvest.

Variety	Total Yield (lb)	Sold Yield (lb)	Average Price/lb (\$)	Weighted Price/lb (\$)	Lower (\$)	Upper (\$)
Brianna	29259	23331	0.77	0.81	0.60	1.00
Edelweiss	3748	2991	0.81	0.81	0.70	1.00
Frontenac	83435	65385	0.79	0.79	0.50	1.00
Frontenac blanc	75994	73841	0.89	0.89	0.70	1.50
Frontenac gris	62276	45053	0.81	0.75	0.50	1.00
Itasca	11486	11049	0.84	0.87	0.75	1.00
King of the North	2488	2000	-	-	-	-
La Crescent	49360	47689	0.81	0.86	0.65	1.00
Marquette	102076	94761	0.92	0.90	0.50	1.50
Petite Pearl	6770	6661	0.74	0.72	0.70	0.80
Prairie Star	4125	3580	-	-	-	-
St. Croix	17728	17728	0.73	0.73	0.50	0.85
St. Pepin	2806	1773	0.83	0.83	0.80	0.90
Other	32590	29993	1.11	0.75	0.65	4.00

* Due to low sample size, the “other” category also includes the Crimson Pearl, Kay Gray, La Crosse, Leon Millot, Marechal Foch, Sabrevois, Somerset Seedless, TP 3-1-3N, and Verona

Five years of data were compiled to show general production trends from 2015 through 2019. Shown in Figure 4, are the top produced varieties and the average production over the five years. Year to year variation may reflect inconsistencies in under sampling the grower population, as reflected in the low survey response rate relative to the number of growers in the state.

Crop Loss

Winter injury to buds was reported as one of the key reasons for crop loss in 2019 for the most widely planted varieties including the Frontenac group. Up to 100% loss was experienced by some growers on ‘Marquette’, ‘Frontenac blanc’, ‘Petite Pearl’, and ‘Brianna’. Frost damage was reported for all varieties for many growers. At least one grower reported hail damage. Growers continue to report bunch stem necrosis in ‘Marquette’, which included “stem rot” and “premature berry shrivel” as descriptors from the respondents. Wild animals that browse on plants or feed on the fruit (birds and raccoons) were also reported to cause damage. Insect pests such as spotted wing drosophila (*Drosophila suzukii*; SWD) were reported to cause damage. Although SWD are present in vineyards across the state, it is very unlikely they are a primary cause of crop loss, and more likely to behave as other fruit/vinegar flies that feed on fruit damaged from mechanical injury including berry splitting and cracking around the pedicel.

Table 3. Grape yields reported for Minnesota 2019 harvest by percentage.

Variety	Number of Growers	% of All Grapes Sold
Brianna	9	6.0%
Edelweiss	5	0.8%
Frontenac	18	17.2%
Frontenac blanc	17	15.7%
Frontenac gris	18	12.9%
Itasca	6	2.4%
King of the North	4	0.5%
La Crescent	17	10.2%
Marquette	23	21.1%
Petit Ami	-	-
Petite Pearl	6	1.4%
Prairie Star	3	0.9%
St. Croix	6	3.7%
St. Pepin	5	0.6%
Other	--	6.7%

Although winter injury was indicated as a top reason for crop loss, research shows that trunk disorders may be acting independently or in conjunction with cold weather events to cause vine decline and death. These trunk disorders are difficult to diagnose, although UMN researchers are working to characterize the many different species involved. Our current recommendation is to manage winter injury and trunk disorders using similar best practices. This includes retraining suckers to establish multiple trunks of different ages, planning for and replacing trunks, and rejuvenating cordons and spurs.

Summary

Approximately 80 farm wineries are active in Minnesota and this survey reports on only 34 grape producers, nine of which are not wineries themselves. This survey is able to provide some insights on grape production and sales in the state, but represents a subset of commercial grape growers in Minnesota. The intent was to provide a snapshot of the 2019 harvest season and give both growers and wine producers estimates of pricing and trends to assist in budgeting, establishing fair prices, and fiscal planning. Crop loss continues to affect growers in the state at all times through the year. Winter injury and associated trunk disorders, bud injury, and frost were some of the top reasons for crop loss.

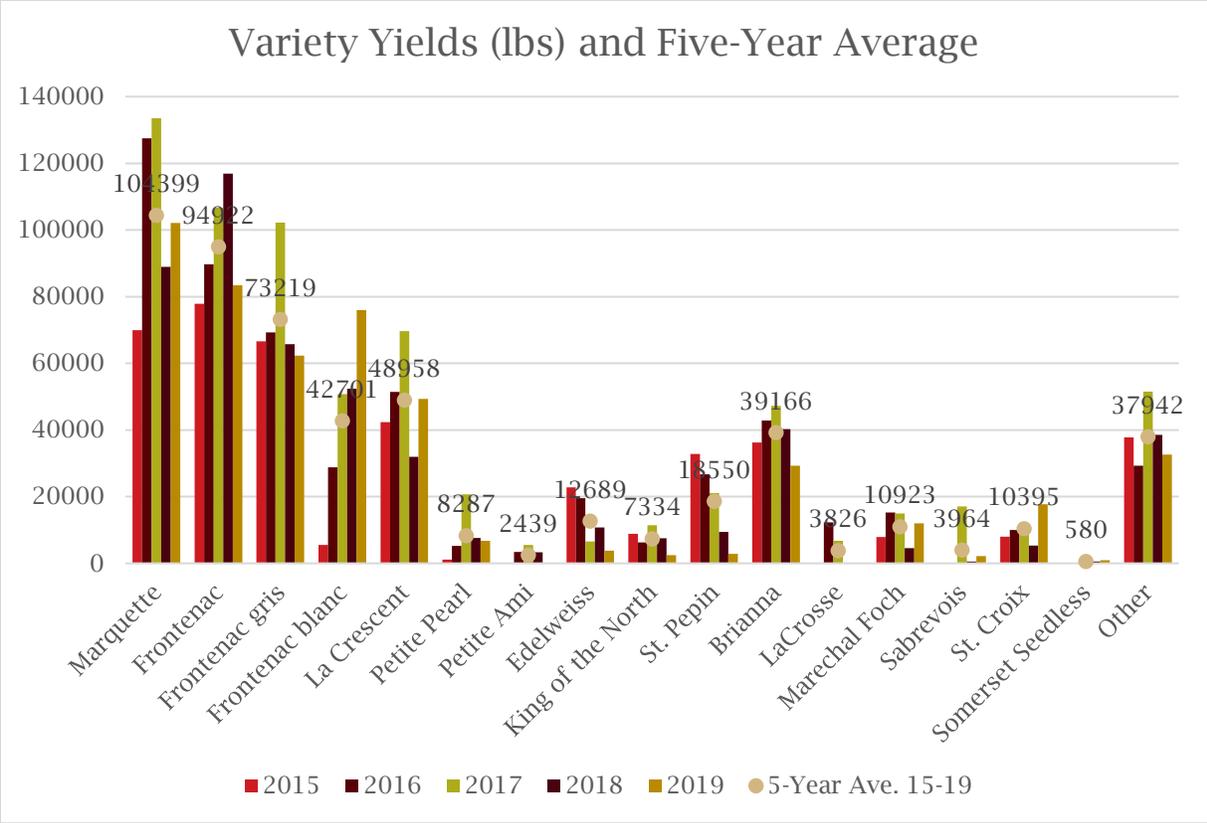


Figure 4. Yield data for five years (2015-2019) of top producing cold-hardy grapevines in Minnesota based on 34 survey respondents. Five-year average is shown as the value and tan dot.