KENTUCKY WINEGRAPE GROWERS SURVEY
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Christopher Smigell, Amy Poston, and Vaden Fenton, University of Kentucky Department of Horticulture; Stacia Alford, Kentucky Department of Agriculture

Introduction

This survey was conducted at the request of the Kentucky Grape and Wine Council, to be presented in its annual report to the Kentucky Licensing and Occupation Committee. The objectives of the survey were to

- determine the total acreage of the state's commercial winegrape industry,
- determine how much of the acreage is at bearing age,
- assess the number of acres planted of each winegrape cultivar,
- determine the 2008 yields of each cultivar, and
- determine the grower planting intentions for 2009.

Winegrape growers' names were primarily collected from an earlier vineyard survey by the University of Kentucky (Smigell, Bogle and Strang, 2002) and from the Kentucky Vineyard Society membership list. Other names were provided by county agents, grape growers and wineries. The growers were initially contacted via e-mail, using the University of Kentucky Grape Alert List serve, which has over 200 subscribers. Growers were also contacted by telephone. Winegrape growers with a minimum of 250 vines (approximately one half acre) were included in the survey. Acreage owned by wineries is also included.

Not all growers in this survey are selling grapes to wineries. A few sell to hobbyist wine makers, or produce the grapes for their own, non-commercial wine production. Also, table grape varieties have been included in the survey, because their acreage only accounts for less than 2% of the total acreage, and in most cases, the varieties are also being used for wine making.

Synopsis

As of the fall of 2008, there were at least 124 vineyards in Kentucky with between one half acre and 28 acres of winegrapes, for a total of 436 acres. Most of the vineyards have less than four acres of vines. About 90% of all the acreage is concentrated in Central and Northern Kentucky, as are most of the wineries. Survey respondents intend to plant 31 more acres in 2009. Thirty one winegrape growers have taken out all or some of their vines (92 acres total) since 2002.

One half of the 436 acres are planted with French-American hybrid winegrape varieties, and 38% of the acreage has European varieties. The remaining acreage is comprised of American varieties, primarily Norton (Cynthiana), and a third of the acreage planned for 2009 will be planted with Norton. The varieties with the most acreage (in parentheses) are Vidal Blanc (53), Cabernet Sauvignon (47), Chambourcin (47), Norton (43), Cabernet Franc (36), Traminette (31), and Chardonnay (21).

The majority (85%) of Kentucky winegrape acreage is of bearing age. Kentucky vineyardists reported a yield of 501 tons for all varieties, although many growers with mature acreage did not report yields for part or all of their acreage. The average yield for all vines in Kentucky of bearing age was 1.33 tons/acre. This translates to about 80,000 gallons of juice (assuming160 gallons of juice yielded per ton of grapes). Ignoring production losses, this gallonage would produce about 30,000 cases of wine (assuming 60 cases of wine per ton of grapes).

Information collected in the survey

These were the questions asked of growers:

- What varieties of winegrapes are you growing?
- How many vines or acres of each variety do you have?
- For each variety, have the vines been planted for three years or more? (Count the planting year as one year.)
- For each variety, how many pounds or tons did you harvest this year?

- Do you intend to plant any vines next year?
- If so, what varieties, and how many vines of each variety?

Winegrape vineyards accounted for in this survey

Overall, 149 winegrape vineyards were accounted for in this survey. This includes four vineyards to be planted in 2009. There were 124 growers who provided survey data that are growing grapes. Several growers who were included in the 2002 survey could not be contacted. Five are known to be growing grapes, based on county agent reports or recent farm visits by the extension associate for small fruits. These five were included in the survey, and their acreage was estimated based on their 2002 survey acreage. No yields were estimated for these growers. Another 18 vineyards have either been completely taken out or have been neglected for several years.

Vineyard acreage and its distribution by vineyard size

Unless specified by the grower, acres of European (*Vitis vinifera*) cultivars were assumed to contain 600 vines (12 by 6 foot spacing) and acres of French-American hybrid and American cultivars to have 454 vines (12 by 8 foot spacing). Many of the older *Vitis vinifera* plantings in Kentucky were put in with a 12 by 8 foot spacing. Therefore *vinifera* vines planted before 2003 were assumed to have 454 vines, unless the grower indicated otherwise. Only vineyards with a minimum of 250 vines (roughly a half-acre) were included in the survey.

Given these assumptions, the 124 commercial winegrape vineyards in Kentucky have a total of 436 acres, or a little over 230,000 vines planted. In the 2002 Kentucky Vineyard Survey, 77 vineyards had a total of 272 acres. Therefore, there has been a 60% increase in acreage in the past six years.

A little less than half (58 of 124) of all the vineyards in this survey are between a half-acre and two acres in size (Table 1). Another 29% have between 2.1 and 4 acres of vines. Thus, three out of four winegrape vineyards in Kentucky are on four acres or less.

Generally, these small vineyards will have a higher cost per-ton for their product than would larger vineyards, and can be expected to take longer to get a return on investment.

Table 1. Distribution of winegrape vineyards by acreage

Area planted (acres)	Number of vineyards
0 to 2	57
2.1 to 4	36
4.1 to 6	13
6.1 to 8	6
8.1 to 10	5
10.1 to 12	3
12.1 to 14	1
14.1 to 16	0
16.1 to 18	1
18.1 to 20	0
20.1 to 22	0
22.1 to 24	0
24.1 to 26	1
26.1 to 28	1
Greater than 28	0
Total existing vineyards	**124**

Existing vineyard acreage and its distribution

The majority of Kentucky's wineries and vineyards are clustered in either Central or Northern Kentucky. Most wineries are in Central Kentucky, along with 275 acres, or 63% of Kentucky's winegrape acreage. Anderson, Fayette, Washington and Woodford counties have larger acreages than most counties, and together, these four central counties have 135 acres, or about 31% of the Kentucky acreage. Nine operating wineries are within these counties, and another six are in adjacent counties. The northern counties of Campbell, Fleming and Owen also have large acreages. Northern Kentucky counties have about 85 acres, or just under 20% of Kentucky's commercial winegrape acreage, and seven operating wineries.

Table 2. Total acreage and number of growers by county, listed by decreasing county acreage

County	Acreage	No. of vineyards
Anderson	41.8	4
Fayette	39.5	13
Washington	33.4	6
Owen	26.7	3
Fleming	21.4	2
Campbell	20.5	9
Woodford	20.4	4
Jefferson	18.0	5
Clark	17.1	1
Jessamine	14.6	5
Franklin	12.4	4
Nelson	12.1	4
Daviess	11.5	5
Christian	9.8	2
Pulaski	9.2	4
Scott	9.0	3
Carter	7.9	1
Montgomery	7.5	1
Madison	7.0	2
Marion	6.6	3
Boyle	6.0	2
Bath	5.6	2
Shelby	5.2	1
Pendleton	4.7	2
Caldwell	4.2	1
Simpson	4.1	1
Laurel	4.0	2
Carroll	3.6	1
Henry	3.5	1
Hancock	3.4	1
Nicholas	3.3	1
Grant	3.2	2
Kenton	3.1	2
Oldham	3.1	1
Estill	3.0	1
Ballard	2.6	1
Allen	2.4	1

Metcalfe	2.4	1
Lincoln	2.3	1
Hardin	2.0	1
Meade	2.0	1
Lawrence	2.0	1
Bullitt	1.9	1
McCracken	1.9	2
Henderson	1.6	2
Mercer	1.6	1
Bourbon	1.0	1
Bracken	1.0	1
Wayne	0.9	1
Gallatin	0.8	1
Greenup	0.8	1
Warren	0.7	1
Logan	0.7	1
Whitley	0.6	1
Hart	0.5	1
Totals	**435.8**	**124**

Vineyard acreage and distribution by vine type and variety

Nearly one half (48.9%) of Kentucky winegrape acreage consists of French-American hybrid varieties, about one third (38.1%) consists of European, or *Vitis vinifera* varieties, and about one tenth (13%) is made up of American varieties. These percentages are almost the same as in the 2002 survey. The European winegrapes bring a better price than the other types, but also cost more to produce, and are more susceptible to winter injury, late spring frosts, and disease than most French-American hybrid and American varieties.

Table 3. Percentage of total acreage by vine type

Vine type	Acreage	Percent of total acreage
French-American	215.9	49.5
European	163.3	37.5
American	56.6	13
Totals	**435.8**	**100**

Table 4 shows how Kentucky's grape acreage compares to that of the adjacent states. Sources for this data are at the end of this report.

Table 4. Grape acreage for Kentucky and adjacent states, 2007

State	Acreage
Virginia	2400
Ohio	2200
Missouri	1400
North Carolina	1400
Illinois	1080
Tennessee	585
Indiana	560
Kentucky	436
West Virginia	222

The varieties with the greatest acreage are fairly evenly divided between European and French-American types. The only American variety with large acreage is Norton (a.k.a. Cynthiana).

Table 5. Winegrape varieties in Kentucky, listed by amount of acreage

Variety	Vine type	Acreage
Vidal Blanc	Hybrid	52.8
Cabernet Sauvignon	European	47.4
Chambourcin	Hybrid	46.9
Norton	American	43.4
Cabernet Franc	European	35.9
Traminette	Hybrid	31.4
Chardonnay	European	21.2
Riesling	European	18.1
Chardonel	Hybrid	14.7
Seyval Blanc	Hybrid	12.4
Syrah	European	11.3
Cayuga White	Hybrid	11.1
Foch	Hybrid	9.8
Vignoles	Hybrid	9.1
Concord	American	8.2
Pinot Noir	European	5.9
Viognier	European	5.8
Baco	Hybrid	5.7
Merlot	European	5.3
Niagara	American	3.0
Cabernet Dore	Hybrid	3.0
St. Vincent	Hybrid	2.9
Petit Syrah	European	2.7
Reliance	Hybrid	2.5
Gewürtztraminer	European	2.2
Aphrodite	Hybrid	2.0
Lemberger	European	1.9
Sangiovese	European	1.9
Sauvignon Blanc	European	1.8
Mars	Hybrid	1.6
Marquis	Hybrid	1.6
Malbec	European	1.2
Chancellor	Hybrid	1.1
Aurora	Hybrid	1.1
Catawba	American	1.1
Cabernet Dianne	Hybrid	1.0
Crimson Cabernet	Hybrid	1.0
Gold Muscat	Hybrid	1.0
Mourvedre	European	1.0
De Chaunac	Hybrid	0.8
Tempranillo	European	0.8
Muscat	European	0.7
Buffalo	American	0.6

Carmine	European	0.4
Leon Millot	Hybrid	0.4
GR7 (Rubiana)	Hybrid	0.4
Dormfelder	European	0.4
Cape	European	0.3
Sunbelt	American	0.3
Moore's Diamond	Hybrid	0.3
NY Muscat	Hybrid	0.3
Villard Noir	Hybrid	0.2
Isabelle	Hybrid	0.1
NY73 (Noiret)	Hybrid	0.2
Pinot (?)	European	0.1
Pinot Gris	European	0.05
Zinfandel	European	0.04
Zweigelt	European	0.04
Lakemont	Hybrid	0.03
Total		**435.8**

Distribution of vineyard acreage by age

Well managed vines can yield at least a partial crop in their third growing season. The majority (85%) of Kentucky winegrape acreage is three years old or more (Table 6). Cabernet Sauvignon, Vidal Blanc, Chambourcin, Norton, Cabernet Franc and Traminette were the varieties most planted through 2005. With the exception of Cabernet Sauvignon, these same varieties have been the most planted in the last three years (Table 6).

Table 6. Variety acreage distribution by age, listed by amount of acreage

Variety	Acreage at least 3 years old	Acreage less than 3 years old
Cabernet Sauvignon	47.4	2.5
Vidal Blanc	42.7	10.1
Chambourcin	40.8	6.1
Norton	39.8	3.6
Cabernet Franc	26.9	9.0
Traminette	22.5	8.8
Chardonnay	19.5	1.7
Riesling	16.7	1.4
Chardonel	14.7	0.0
Seyval Blanc	11.8	0.5
Cayuga White	11.0	0.1
Syrah	10.1	1.2
Foch	9.7	0.1
Vignoles	8.1	1.0
Concord	8.0	0.2
Baco	5.7	0.0
Pinot Noir	4.9	1.0
Merlot	4.8	0.5
Viognier	4.1	1.7
Niagara	3.0	0.0
St. Vincent	2.9	0.0
Petit Syrah	2.7	0.0

Reliance	2.5	0.0
Gewürtztraminer	2.2	0.0
Sangiovese	1.9	0.0
Sauvignon Blanc	1.8	0.0
Marquis	1.6	0.0
Lemberger	1.3	0.7
Malbec	1.2	0.0
Chancellor	1.1	0.0
Aurora	1.1	0.0
Gold Muscat	1.0	0.0
Mourvedre	1.0	0.0
De Chaunac	0.8	0.0
Catawba	0.8	0.3
Tempranillo	0.8	0.0
Mars	0.6	1.0
Buffalo	0.5	0.1
Carmine	0.4	0.0
Leon Millot	0.4	0.0
GR7 (Rubiana)	0.4	0.0
Cape	0.3	0.0
Sunbelt	0.3	0.0
Moore's Diamond	0.3	0.0
NY Muscat	0.3	0.0
Villard Noir	0.2	0.0
Muscat	0.2	0.5
NY73 (Noiret)	0.1	0.1
Pinot (?)	0.1	0.0
Pinot Gris	0.1	0.0
Dormfelder	0.1	0.4
Aphrodite	0.0	3.0
Cabernet Dore	0.0	2.0
Cabernet Dianne	0.0	1.0
Crimson Cabernet	0.0	1.0
Other	0.0	0.2
Total	**380.7**	**59.7**

Planting intentions for 2009

Four growers will be planting vines for the first time in 2009. Another 29 growers intend to put in additional vines in 2009. About 31 acres are planned, and about a third of those are expected to be Norton.

Table 7. 2009 planting intentions by variety, listed by acreage

Variety	**Acreage**
Norton	11.1
Unknown/undecided	4.0
Vignoles	2.0
Dormfelder	2.0
Moore's Diamond	2.0
Cabernet Franc	1.8
Cabernet Sauvignon	1.7
Chambourcin	1.2

Zinfandel	1.0
Traminette	1.0
Riesling	0.9
Chardonnay	0.7
Vidal Blanc	0.6
Pinot Noir	0.4
Syrah	0.3
Niagara	0.2
Concord	0.1
Vanessa	0.1
Mars	0.1
Merlot	0.1
Seyval Blanc	0.1
Total	**31.5**

Vines removed

Thirty one winegrape growers have taken out all or some of their vines since 2002. Eighteen vineyards totaling 92 acres have either been completely taken out or have been neglected for several years. The neglected vines have been considered removed for purposes of this survey. The following table lists the cultivars and corresponding removed acreages.

Table 8. Acreage of removed or neglected vines

Variety	**Acreage**
Vidal Blanc	11.0
Chardonnay	11.9
Chambourcin	10.8
Seyval Blanc	8.7
Riesling	8.1
Cabernet Sauvignon	7.6
Cabernet Franc	5.7
Foch	5.2
Merlot	3.9
De Chaunac	2.8
Reliance	2.4
Norton	2.1
Sauvignon Blanc	2.0
Syrah	1.4
Chardonel	1.4
Cayuga White	1.3
Traminette	1.1
Baco	0.9
Pinot Noir	0.3
Beaujolais	0.3
Frontenac	0.3
Niagara	0.2
Unknown or mixed	4.3
Total	**91.7**

Table 9 shows the varieties with the most acreage currently planted, plus the acreage removed since the 2002 vineyard survey, and the percent of each variety that has been removed. For the varieties with lower acreages, a single grower removing a few acres can cause a large change in the percentage of vines removed. Therefore, comparing the percentages of vines taken out, and trying to make conclusions about the varieties' relative viability should be done with caution, especially when comparing a variety with higher existing acreage to one with less acreage.

It could be expected that the European varieties would have the highest percentages of vines removed, because they are the least hardy varieties. While the European varieties Riesling and Chardonnay have some of the highest percentages of acreage removed, the European variety Syrah has had a relatively low percentage of vines removed. Some growers have indicated that Seyval Blanc is not sought by the wineries. This may account for the relatively high percentage of this variety taken out.

Table 9. Acreage removed for the most commonly planted varieties in Kentucky

Variety	Vine type	Current state acreage	Acreage removed	Percent of variety removed
Vidal Blanc	Hybrid	52.8	11.0	17.2
Cabernet Sauvignon	European	47.4	7.6	13.8
Chambourcin	Hybrid	46.9	10.8	18.7
Norton	American	43.4	2.1	4.6
Cabernet Franc	European	35.9	5.7	13.7
Traminette	Hybrid	31.4	1.1	3.4
Chardonnay	European	21.1	11.9	36.1
Riesling	European	18.1	8.1	30.9
Chardonel	Hybrid	14.7	1.4	8.7
Seyval Blanc	Hybrid	12.4	8.7	41.2
Syrah	European	11.3	1.4	11.0

2008 Vineyard Yields

Vines three years old or more should be expected to yield grapes. There were 376 acres of vines in this age range, and the total yield for the state was 501 tons, providing an average yield of 1.33 tons/acre. Expected yields range from 2-5 tons/acre for European varieties, to 5-8 tons/acre for French American hybrids, with some of these varieties potentially yielding much more.

Several growers reported drought as a cause of crop loss. Unsuccessful disease and animal control were often cited as well. Therefore, in years without drought, and as growers improve crop and pest management, yields can be expected to increase substantially. This is a critical point to remember, as several growers were unable to sell grapes they had expected to sell to Kentucky wineries in 2008. Several winery owners have reported that their current tank capacities are full.

Survey respondents did not provide as complete information on yields as they did on acreage. In some cases, yields were not given, or given for only some varieties. Other respondents provided a combined yield of all their varieties. Some survey respondents reported zero yields for a variety, other respondents gave no yield number for a variety, and so it was not known if this meant the grower had zero yields or just did not provide data. For these reasons, the following yield data needs to be considered with caution. To get some idea of the average yields of the more commonly planted varieties, a subset of only growers who reported a yield value (including zero yield) were included in calculations for Table 10.

Table 10. Reported 2008 yields by variety, in descending order of yield				
Variety	**State yield (tons)**	**No. of growers reporting a yield**	**Avg. yield/vine (lb.) and yield/acre (tons)**	**Yield range (tons/acre)**
Vidal Blanc	94.5	27	10.5 (2.4)	0-7.3
Chambourcin	57.9	29	8.3 (1.9)	0-5.3
Cabernet Franc	52.9	27	8.3 (2.5)*	0-6.8
Cab. Sauvignon	51.0	29	7.2 (2.2)*	0-5.3
Traminette	40.3	15	9.9 (2.2)	0-6.1
Chardonel	35.2	13	9.1 (2.1)	0-4.6
Chardonnay	33.0	19	7.5 (2.3)*	0-6
Riesling	26.4	14	6.8 (2.0)*	0-5.6
Norton	24.5	30	5.5 (1.2)	0-5.4
Seyval Blanc	19.2	11	5.1 (1.2)	0-4.9
*** tonnage based on 600 vines/acre, all other varieties' tonnage based on 454 vines/acre**				

Citations

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