

ARIZONA VINEYARD SURVEY - 2013

September 2014



Compiled by:
USDA – National Agricultural Statistics Service
Arizona Field Office

Submitted to:
Arizona Wine Growers Association

Executive Summary

- The results presented in this report represent the first set of comprehensive statistics on Arizona's growing vineyard industry.
- The survey was sponsored by the Arizona Wine Growers Association and conducted by USDA's National Agricultural Statistics Service. The survey consisted of a census of known Arizona vineyards. Ninety-six potential operations were included. Sixty-four reported planted acres in 2013. Twenty-six reported no acreage in 2013. Six operations did not participate. A final response rate of 94 percent was achieved.
- The report includes basic descriptive statistics including total statewide acreage, yield and production; acreage, yield and production by region, county and variety; total value of production; indications on the use of production practices and types of production losses; and expectations on future planting intentions.
- Highlights included:
 - Statewide value of production totaled \$2.2 Million.
 - Seventy-four percent of all wine grape production came from the Willcox region.
 - The top five varieties in terms of planted acres were Cabernet Sauvignon, Syrah, Grenache, Zinfandel, and Merlot.
 - The top five varieties in terms of production were Syrah, Grenache, Cabernet Sauvignon, Mourvedre, and Sangiovese.
 - Arizona growers intend to plant an additional 350 acres by the end of 2016.
 - Spur pruning was used by 67 percent of all growers and was the most common practice used.
 - Nearly 41 percent of all growers reported losses from birds and/or animals in 2013.

Arizona's Vineyard Industry – 2013 A 2.2 Million Dollar Industry

The value of grapes grown by Arizona vineyards totaled \$2.2 Million.

| Region | Value of Production 1/ | Total Value |
|--------------------|---------------------------|------------------|
| | <i>-dollars-</i> | <i>-percent-</i> |
| Sonoita/Elgin | 385,000 | 17 |
| Willcox | 1,667,000 | 75 |
| Verde Valley | 143,000 | 6 |
| Other Regions 2/ | 32,000 | 2 |
| State Total | 2,227,000 | 100 |

See footnotes on page 12

| County | Value of Production 1/ | Total Value |
|--------------------|---------------------------|------------------|
| | <i>-dollars-</i> | <i>-percent-</i> |
| Santa Cruz | 385,000 | 17 |
| Cochise | 1,658,000 | 75 |
| Yavapai | 143,000 | 6 |
| Other Counties 3/ | 41,000 | 2 |
| State Total | 2,227,000 | 100 |

See footnotes on page 12

Acreage, Yield and Production by Region and County

Arizona vineyard operators planted a total of 950 acres in 2013. Harvested acres totaled 750 leaving 200 acres as non-bearing. Sixty-seven percent of all acreage planted and 74 percent of all production came from the Willcox region.

| Region | Acres Planted (bearing & non-bearing) | Acres Harvested | Yield Per Acre | Total Production |
|-----------------------------|--|-----------------|------------------------|------------------|
| | <i>-number-</i> | | <i>-tons per acre-</i> | <i>-tons-</i> |
| Sonoita/Elgin | 200 | 175 | 1.5 | 265 |
| Willcox | 640 | 500 | 2.0 | 1,010 |
| Verde Valley | 70 | 60 | 1.2 | 75 |
| Other Regions ^{2/} | 40 | 15 | 1.3 | 20 |
| State Total | 950 | 750 | 1.8 | 1,370 |

See footnotes on page 12

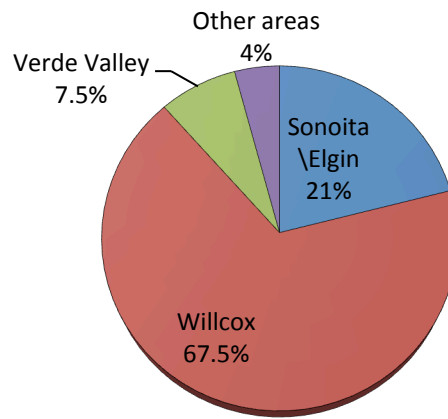
Santa Cruz and Cochise counties account for 87 percent of all planted acreage and 93 percent of all production. Eighty percent of the non-bearing acres in the state are also grown in those two counties.

| County | Acres Planted (bearing & non-bearing) | Acres Harvested | Yield Per Acre | Total Production |
|------------------------------|--|-----------------|------------------------|------------------|
| | <i>-number-</i> | | <i>-tons per acre-</i> | <i>-tons-</i> |
| Santa Cruz | 200 | 175 | 1.5 | 265 |
| Cochise | 630 | 495 | 2.0 | 1,005 |
| Yavapai | 70 | 60 | 1.2 | 75 |
| Other Counties ^{3/} | 50 | 20 | 1.3 | 25 |
| State Total | 950 | 750 | 1.8 | 1,370 |

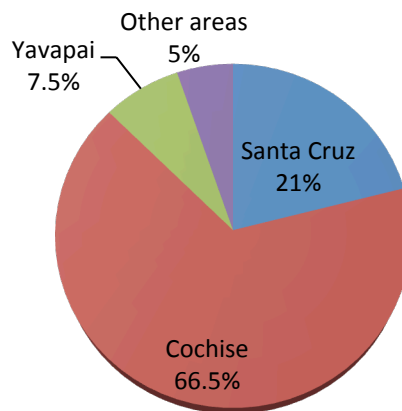
See footnotes on page 12

Arizona's Vineyard Industry - 2013

Planted Acres by Region, 2013



Planted Acres by County, 2013

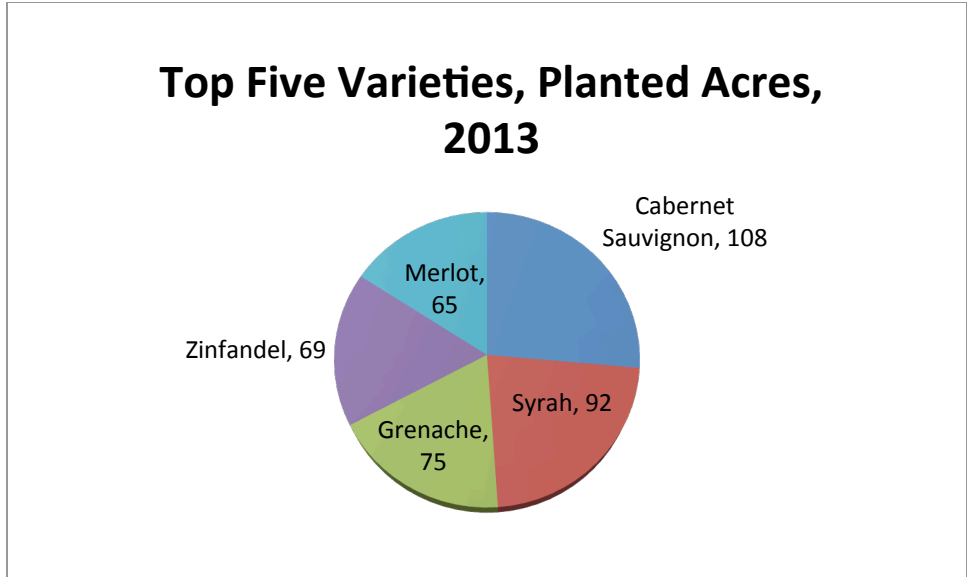


Acreage, Yield and Production by Variety

The top five varieties in terms of acreage were Cabernet Sauvignon, Syrah, Grenache, Zinfandel, and Merlot accounting for 43 percent of all planted acres. In terms of production, the top five varieties were Syrah, Grenache, Cabernet Sauvignon, Mourvedre and Sangiovese accounting for 50 percent of the state's total production.

| Region | Acres Planted (bearing & nonbearing) | Newly Planted Acres in 2013 | Acres Harvested | Yield per Harvested Acre | Total Production Used or Sold |
|--------------------|--------------------------------------|-----------------------------|-----------------|--------------------------|-------------------------------|
| | | <i>- number -</i> | | <i>-tons per acre-</i> | <i>-tons-</i> |
| Barbera | 8 | 0 | 3 | 2.7 | 8 |
| Cabernet Franc | 11 | 0.5 | 9 | 1.2 | 11 |
| Cabernet Sauvignon | 108 | 5.1 | 81 | 1.3 | 105 |
| Chardonnay | 46 | 0.8 | 30 | 1.1 | 32 |
| Chardonnay | 11 | 0.2 | 8 | 1.5 | 12 |
| Graciano | 75 | 3.7 | 66 | 2.7 | 180 |
| Grenache | 25 | 1.5 | 10 | 1.7 | 17 |
| Malvasia Bianca | 15 | 4.5 | 6 | 2.8 | 17 |
| Malbec | 65 | 3.5 | 53 | 1.4 | 72 |
| Merlot | 57 | 0.7 | 53 | 2.0 | 104 |
| Mourvedre | 9 | 3.3 | 4 | 1.3 | 5 |
| Muscat | 6 | 1.5 | 3 | 1.0 | 3 |
| Nespoli | 46 | 3.3 | 36 | 1.8 | 65 |
| Petite Sirah | 14 | 0 | 13 | 1.4 | 18 |
| Petit Verdot | 7 | 0 | 5 | 0.8 | 4 |
| Pinot Gris/Grigio | 9 | 1.0 | 6 | 0.8 | 5 |
| Pinot Noir | 30 | 0.5 | 22 | 1.6 | 35 |
| Riesling | 8 | 0 | 5 | 0.8 | 4 |
| Roussanne | 45 | 3.7 | 38 | 2.7 | 104 |
| Sangiovese | 28 | 4.5 | 22 | 1.2 | 26 |
| Sauvignon Blanc | 92 | 2.4 | 89 | 2.1 | 189 |
| Syrah/Shiraz | 56 | 4.5 | 49 | 1.6 | 79 |
| Tempranillo | 22 | 0 | 18 | 3.3 | 60 |
| Viognier | 69 | 1.0 | 53 | 1.5 | 78 |
| Zinfandel | 88 | 1.8 | 68 | 2.0 | 137 |
| Other 4/ | | | | | |
| Total | 950 | 48.0 | 750 | 1.8 | 1,370 |

See footnotes on page 12



Number of Vineyards Expecting to Plant Additional Acreage in the Next 1-3 Years, by Region

A majority of growers intend to expand operations in the next 1-3 years. By the end of 2016, an additional 350 acres are planned. If realized, acres planted would total 1,300 statewide.

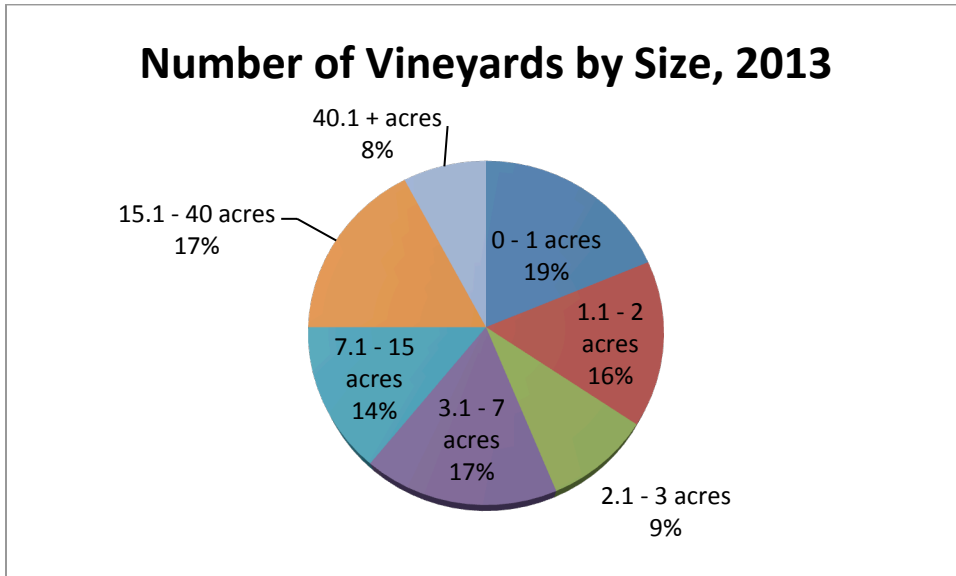
| Region | Growers with Intentions to Plant Additional Acres | Expected to Plant in Next 1-3 Years |
|--------------------|---|-------------------------------------|
| | <i>-number-</i> | <i>-acres-</i> |
| Sonoita/Elgin | 6 | 35 |
| Willcox | 20 | 235 |
| Verde Valley | 8 | 50 |
| Other Regions 2/ | 7 | 30 |
| State Total | 41 | 350 |

See footnotes on page 12

Number of Vineyards by Size

The number of vineyard operations who reported acreage planted in 2013 totaled 64. Thirty-five percent of the operations had less than 2 acres. Twenty-five percent had more than 15 acres.

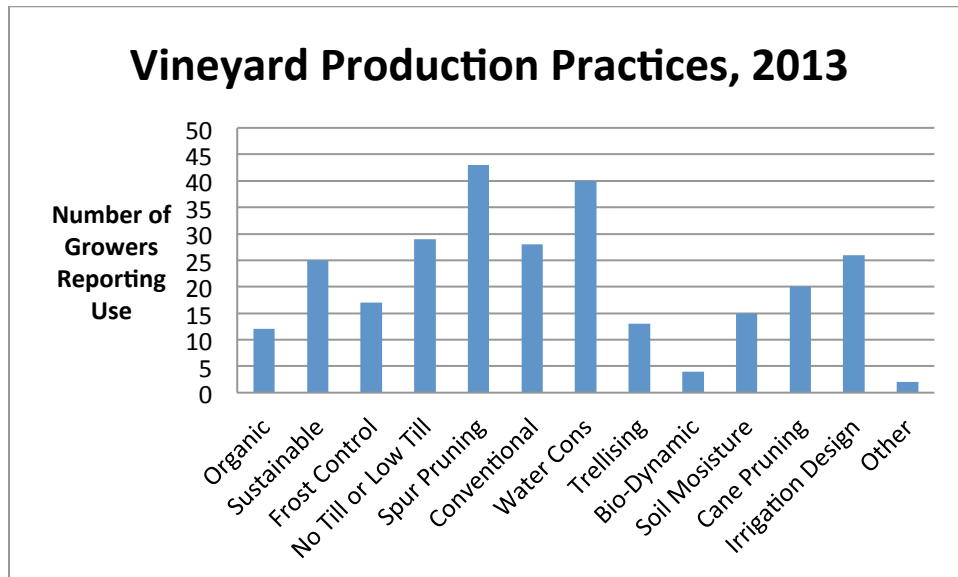
| Vineyard Size (acres planted) | Number of Operations | Percent |
|----------------------------------|-------------------------|------------|
| 0 to 1 acres | 12 | 19 |
| 1.1 to 2 acres | 10 | 16 |
| 2.1 to 3 acres | 6 | 9 |
| 3.1 to 7 acres | 11 | 17 |
| 7.1 to 15 acres | 9 | 14 |
| 15.1 to 40 acres | 11 | 17 |
| 40+ acres | 5 | 8 |
| State Total | 64 | 100 |



Production Practices Used by Arizona Vineyards

The most common practice used by vineyard operations was Spur Pruning which was used by 67 percent of all growers. The next two most widely used practices were Water Conservation and No Till or Low Till Soil Preparation.

| Practice | Growers Reporting Use |
|--|-----------------------|
| | <i>-number-</i> |
| Organic Viticulture | 12 |
| Conventional Viticulture | 28 |
| Sustainable Agriculture | 25 |
| Frost Control Systems | 17 |
| No Till or Low Till Soil Preparation | 29 |
| Spur Pruning | 43 |
| Cane Pruning | 20 |
| Water Conservation | 40 |
| Trellising, other than Vertical Shoot Position (VSP) | 13 |
| Bio-Dynamic Systems | 4 |
| Soil Moisture Monitoring | 15 |
| Irrigation Design | 26 |
| Other | 2 |

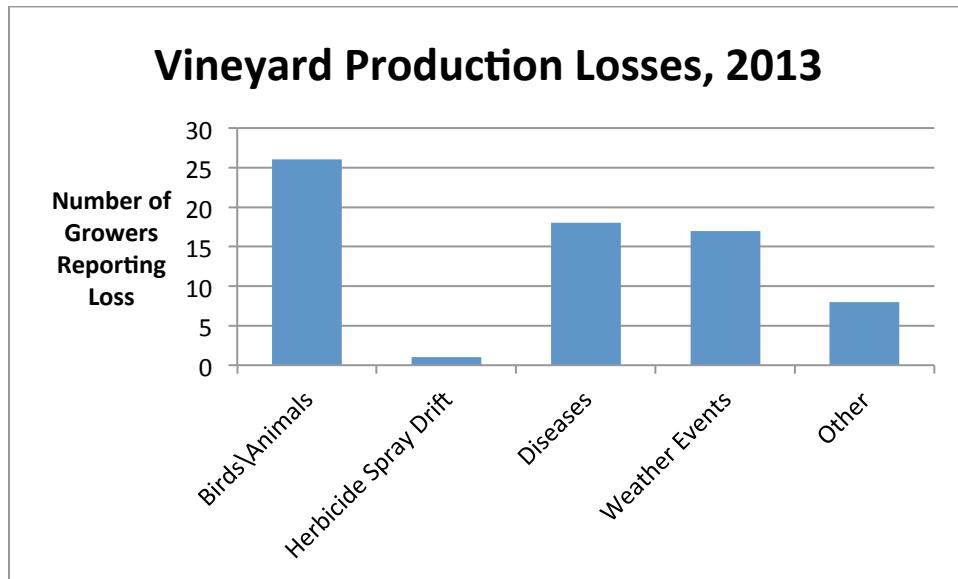


Production Losses Reported by Arizona Vineyards

Nearly 41 percent of all growers reported losses from Bird/Animal damage during the 2013 season. Diseases and Weather Events were also common.

| Type of Loss | Growers Reporting Loss <i>-number-</i> |
|-----------------------|---|
| Birds/Animals 5/ | 26 |
| Herbicide Spray Drift | 1 |
| Diseases 6/ | 18 |
| Weather Events 7/ | 17 |
| Other 8/ | 8 |

See footnotes on page 12



Arizona's Vineyard Industry - 2013

SURVEY METHODOLOGY:

This study was sponsored by the Arizona Wine Growers Association to provide basic baseline information about the size of the Arizona Vineyard industry. The report does not cover the winery side of the industry, just growers of wine grapes although many of the vineyards also have wine making operations.

Statistical samples were drawn from lists provided by Arizona Wine Growers Association and lists of grape growers maintained by USDA's National Agricultural Statistics Service (NASS). An un-stratified sample of 96 possible vineyard operations was selected to represent the entire universe of Arizona wine grape growers. The intent was to conduct a census of all growers to minimize the statistical effect of nonresponse. After an extensive data collection phase a final response rate of 94 percent was obtained. Sixty-four samples reported positive acres in 2013. Twenty-six samples reported no acreage in 2013. Six potential growers did not participate. NASS adjusted the data to account for the six nonresponse samples by using survey averages from those that did report. The size of the six nonresponse cases were known so averages from all like-sized operations were used to impute data for those six reports.

Data collection started in early 2014 with the first survey mailing. A postcard reminder followed ten days after the initial mailing. After providing time to return the survey form, a second mailing took place. Telephone data collection followed along with a limited amount of face-to-face data collection. Staff from the Arizona Wine Growers Association also assisted by promoting survey participation. Data analysis started in May 2014 and the report was delivered to the survey sponsor in September 2014.

Arizona's Vineyard Industry - 2013

FOOTNOTES:

1/- Virtually all of the grapes produced in Arizona were used by each vineyard's winery operation. Very little of the Arizona grape production is actually sold so publishing a value of grapes sold was not possible. Growers in the survey were asked the price per ton they thought they could get if they were to sell their 2013 production. The survey averages were applied to tons produced to produce a statewide value of production not a value of production sold.

2/- Other regions include Gila, La Paz, Mohave, and Pima counties.

3/- Other counties include Gila, Graham, La Paz, Mohave, and Pima counties.

4/- Other varieties include Aglianico, Albarino, Aleatico, Arinto, Aromella, Canaiolo, Champanel, Charbono, Chardonel, Cinsaut, Concord, Counoise, Gewurztraminer, Grenache Blanc, Mission, Nero d'Avola, Noble, Norton, Picpoul Blanc, Primitivo, Seyval Blanc, Sagrantino, Souzao, Symphony, Teroldego, Thompson Seedless, Tinta Cao, Touriga Nacional, Traminette, and Vermentino.

5/-includes bees/wasps, beetles, rabbits, crows, raccoons, javalina, rodents, thrips and leafhoppers.

6/-includes crown gall, Pierce's disease, rot, powdery mildew, eutypa, nematodes, red blotch and grey mold.

7/-includes rain, frost, hail and wind.

8/-includes irrigation failure and unskilled workers.