

AN INTRODUCTION TO CALIFORNIA RIESLING

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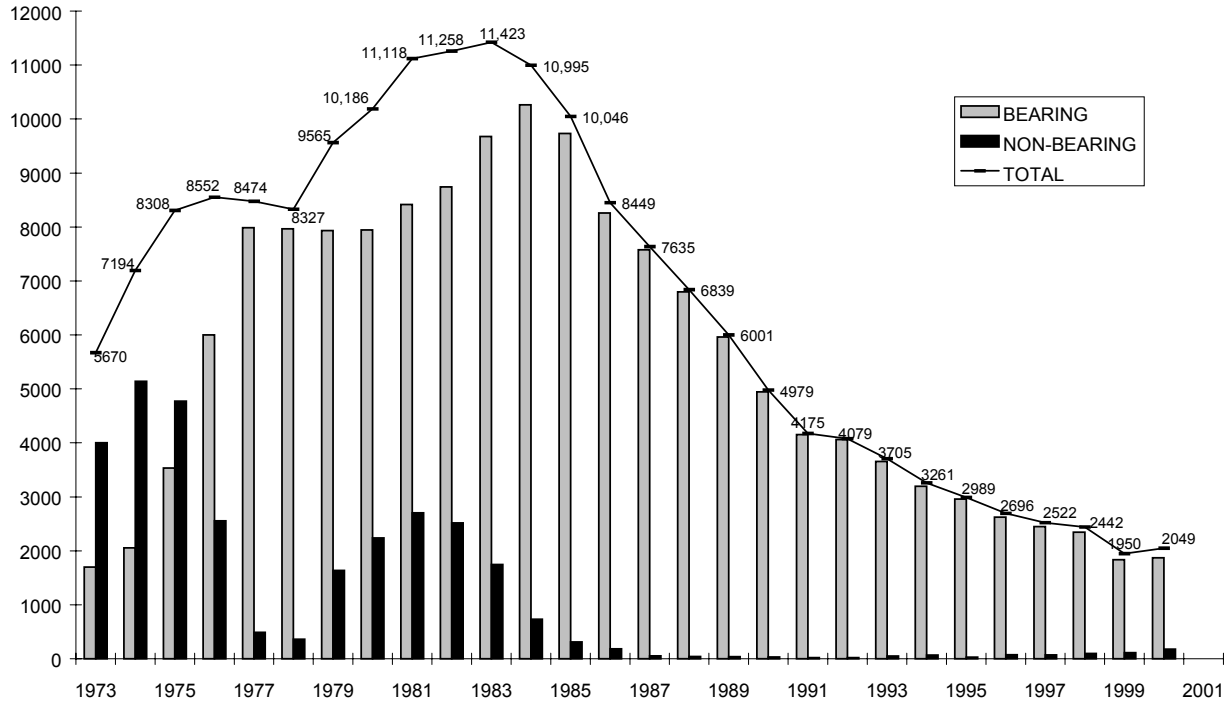
Benjamin Franklin said, “Wine is a constant proof that God loves us and loves to see us happy.” California has been growing grapes for nearly two hundred years. It all started with Father Junipero Serra who was probably the most important man in the history of California. In 1769 he took a party of daredevils to the uninhabited harbor of San Diego. It was there that he built the first of twenty-one missions. Into the soil by that mission, as at the rest of them later he put some vines from a Spanish grape, still today called the Mission grape. *Vitis vinifera* had been introduced to California. ⁽¹¹⁾

Riesling arrived in the USA with European immigrants in the middle of the 19th century, and was first planted here by the Hungarian nobleman Agoston Haraszthy at his Buena Vista Winery in Sonoma County, California in 1857. ⁽⁷⁾ He is deservedly called the father of modern commercial winemaking in America ⁽¹¹⁾ Riesling vines were also brought to Sonoma by Emil Dresel from his hometown in Geisenheim in 1859. ⁽¹⁰⁾ At about the same time Haraszthy arrived, the German Francis Stock planted Riesling in San Jose, California and supplied cuttings to George Belden Crane in St. Helena, Napa County, California, who was followed by Charles LeFranc in 1862 in Santa Clara County, California. ⁽⁷⁾

What enabled the variety to establish itself in California successfully, along with the wine industry as a whole, was the economic boom which the 1849 gold rush brought to the state. ⁽⁷⁾ Wines from German varieties, particularly Riesling, Sylvaner, and Traminer, were what first brought some small fame to the tiny California wine industry in the 1870’s. During those years it became common to refer to the true Riesling grape as the Johannisberg Riesling, after the famous estate Schloss Johannisberg in the Rheingau. For years the Johannisberg Riesling was standard California nomenclature, coming back into fashion after repeal when varietal labeling caught on. Subsequently, the BATF, in a ruling on January 2, 1996, declared that the designation Johannisberg Riesling could not appear on American-made wine after January 1999. ⁽¹⁰⁾ On appeal by the industry this date has been pushed back to January 2006 to allow wine producers more time to make the transition.

Much of the growth in popularity of California premium table wines in the 1950’s and the 1960’s was generated by young fruity slightly-sweet White Riesling and Chenin Blanc. ⁽¹⁰⁾ In fact, during this time Riesling was considered one of the top four wine varieties along with Cabernet Sauvignon, Pinot Noir, and Chardonnay. This popularity crested in the late 1970’s and early 1980’s after which White Riesling became harder to sell in the broader market and has so far made only slow and modest progress in the face of Chardonnay’s dominant position as the white grape variety of which most American wine drinkers are aware. ⁽⁷⁾ ⁽¹⁰⁾ California’s Riesling “boom” came to its peak at the beginning of the eighties.

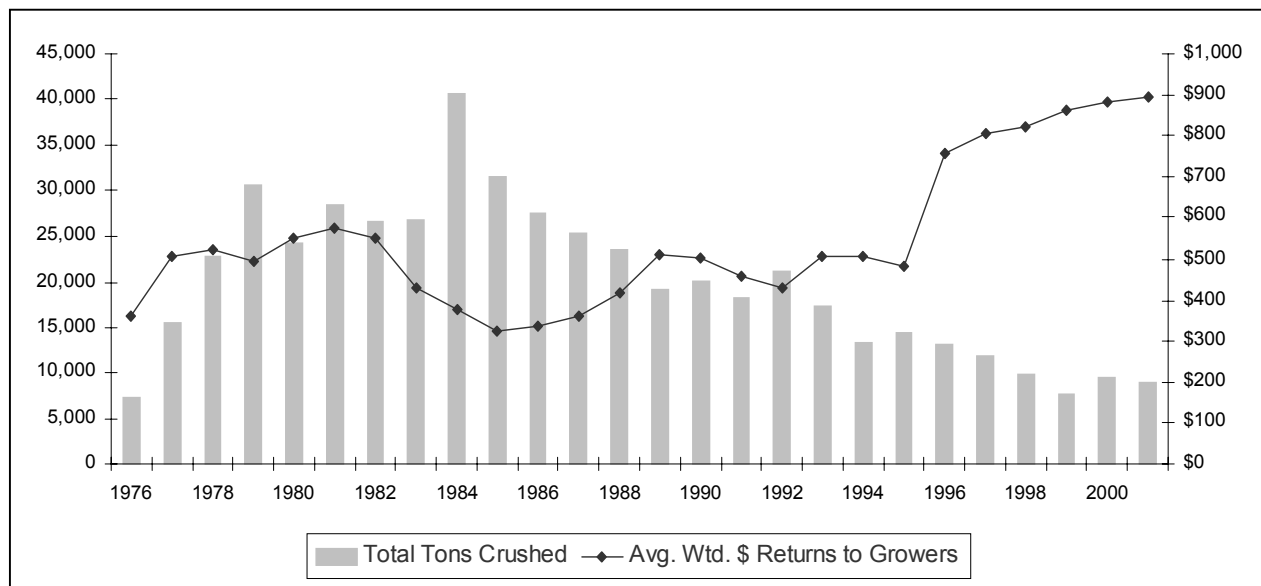
Riesling Grape Acreage



Source: California Grape Acreage Report

Figure 1 demonstrates growth in Riesling acreage in California from the early 70's to the mid 80's where total acreage, bearing and non-bearing, grew from 5,670 in 1973 to a high of 11,423 in 1983. At the peak in 1984 total bearing acreage for Riesling was 10,261.⁽³⁾ This growth was most likely supported by Gallo's interest in Riesling at the time and the use of Riesling as a blending varietal. Certainly at that time, the interest in Chardonnay, and its subsequent ascension as the pre-eminent white grape varietal in California, had an impact on the sustainability of Riesling growth. The impending dominance of Chardonnay not only affected Riesling but the entire white wine grape market as well.

In fact, total acreage for Chardonnay, bearing and non-bearing in 1973 was 7,368.⁽³⁾ By 1983 total acreage of Chardonnay was nearly double that of Riesling when Riesling was at its peak. As Riesling plantings began to decline in favor of Chardonnay beginning in 1981, Chardonnay continued to accelerate to a staggering 89,272 bearing acres in 2000 while at the same time Riesling had declined to 1,873 bearing acres.⁽³⁾



Source: Preliminary Grape Crush Report

Figure 2 shows the relationship of total tons crushed and average weighted returns to growers. This graph reflects the relationship of supply and demand and market cycles. As plantings increased, the average returns to growers decreased significantly, especially during the period of 1983-1985. As Riesling planted acreage decreased beginning in 1985, the average returns to the growers began to increase. Yes, over a 25 year period market cycles in our business influenced these relationships as well as the inflationary factor. As we move into the 90's when economic growth was strong and demand was high for California wines, healthy growth in returns to growers were reflected in these trends. Interestingly enough, although Chardonnay has enjoyed significantly higher average returns since 1975 when Riesling and Chardonnay returns were about the same, in 2000 Chardonnay and Riesling average returns to growers are once again very similar. In fact Riesling is slightly higher. This reflects a balanced supply situation for Riesling and the specific requirement that it be grown in a cool climate where returns are inherently higher. This, in a market where Chardonnay production is more than 60 times as great as Riesling but much of the Chardonnay production is grown in the warmer interior of California where returns to growers are significantly lower.

The fashion for drier French style white wines, and particularly for the Chardonnay variety, was already beginning to make itself felt by the mid eighties. ⁽⁷⁾ Riesling, once considered one of the top four wine grape varieties during the 60's and 70's has given way to the dominance of Chardonnay in the 80's and 90's. Yet, distinctive wines are being made from Riesling in California where several producers have well-established reputations for their White Riesling. ⁽¹⁰⁾ Especially in a market where knowledgeable consumers are looking for interesting white wines that are anything but Chardonnay.

IN THE VINEYARDS

Riesling is distinguished by the hardness of its wood, which helps make it a particularly cold-hardy vine, making it a possible choice for relatively cool wine regions.⁽⁹⁾ In California, it is most commonly grown in the cooler production regions, with the majority of the acreage found in the central coast. Vine vegetative growth can vary significantly from weak to moderately vigorous depending on the climatic region, soil characteristics, moisture availability, and rootstock selection. Adaptable to a wide range of soil types, the highest vigor will be on fertile soils with high moisture availability.⁽¹⁾

Riesling has no known incompatibilities when certified budwood is used to propagate the planting stock. In the coastal areas Riesling has been successfully grown on rootstocks 5C, 5BB, 3309, 11OR, and Freedom. Rootstock experience is limited due to the low acreage replanted to the variety in the late 1980's and 1990's.⁽¹⁾ A number of growers who planted in the 1970's and 1980's developed their vineyards on available AXR1 or the vines were rooted on their own stock.

For quality wines there should be a blend of clones to increase complexity of flavors. In California FPMS 2 is sourced from Geisenheim 198Gm which has lower crop yields with wines of elegant fruitiness and pronounced flavor, but with all components in good balance. FPMS 3 and 9 (non-certified) is sourced from Geisenheim 110Gm which has an extremely fruity, slight Muscat flavor and in warmer sites is regarded as not typical of German Riesling wines. FPMS 4 is from an unknown source, FPMS 10 is from the Martini Vineyard and FPMS 12 is clone 90 from Neustadt, Germany.⁽¹⁾

Local growers on the central coast aren't certain of the origin of the clones in their vineyard. Apparently the UC Davis 100 series clones which many of the older established vineyards have planted are simply various heat treatments of the same clone. This has also been referred to as the Goheen selection wood.⁽⁶⁾⁽⁴⁾ Other references were made to the Lider Nursery super clone and a River Road clone⁽⁵⁾ and there are probably other such designations depending on the origin of the budwood.

Terrior and microclimate require a different approach to how a vineyard is managed within a region⁽⁴⁾ Training and trellising is mixed and has evolved over the years. Riesling was traditionally head trained and cane pruned due to the small cluster size. Where bud fruitfulness is low, cane pruning may still be the best option for higher production.⁽¹⁾ Most vineyards are using the vertical-shoot-positioned (VSP) trellis system. There is some interest in the Smart-Dyson system as well, although probably more suited to high-vigor sites.⁽¹⁾ Cordon training and spur pruning, both unilateral and bilateral, is employed in most vineyard operations today. Due to Riesling being a small cluster variety, the need for high bud count is mandatory. According to one grower they can be as high as 96 buds per vine.⁽⁶⁾ A normal bilateral cordon would have 10 spur positions on each side (unilateral would have 20) with optional kicker cane for insurance leaving approximately 20 buds per vine. At 1½ bunches per spur position and 3 bunches per pound a normal crop would yield 5-7 tons per acre on a 12' x 7' spacing. Tighter spacing, such as 10' x 6', or even more dense, is being developed by some growers now especially as they replant.⁽⁴⁾⁽⁵⁾ Hedge pruning has also been employed in some vineyards on the central coast. This system gives protection from sunburn and windburn

and sets a slightly higher crop. No leaf picking is considered with this system. ⁽⁴⁾ Leaf picking is utilized on cordon and cane pruned systems on the east and north side of the vines, which allows in available light without sunburn, and minimizes the effects of windburn. ⁽²⁾⁽⁵⁾⁽⁶⁾

Irrigation management is critical on the central coast where normal annual rainfall is 10-15 inches. Irrigation regimes vary and a combination of overhead and drip systems are utilized. Growers build reserves during the summer until veraison. Water management and consumptive use and application methodology is a key to prevent water berry and resulting burst and only using drip irrigation late season to prevent water on clusters. Depending on site and microclimate irrigation is discontinued post veraison or a watering is done just prior to harvest. Some growers use a pressure bomb or computer system to determine water requirement. Overhead sprinklers are used for frost protection and support cover crop development. ⁽²⁾⁽⁴⁾⁽⁵⁾⁽⁶⁾

Mildew pressure is considered moderate to high in the central coast. This is due to relatively high humidity and the use of overhead sprinklers. Normally a combination of sterile inhibitors and sulfur are used for control. Sterile inhibitors are used early before the canopy develops. Then a 7-10 day sulfur regime is used to veraison.

Riesling, due to its genetic background, is highly susceptible to rot (Botrytis cinerea), which is not consistent with California winemaking. There are three key components to reducing the incidence of rot in Riesling. High bud and resulting cluster counts, reduces the size of the fruit, and develops a looser cluster, which prevents the berries from splitting, due to internal pressure of the cluster (berry against berry). It is important to watch late season applications of water. A fertilizer program, which has nitrogen at a low rate is necessary to prevent enveloping the fruit in a full canopy. The emphasis should be on potassium and calcium to build better cell structure in the skins. If there is a Botrytis rot problem developing in Riesling, which occurs at 16+ brix, there are several methods which arrest and stop further advancement of the disease. Leaf removal and the resulting exposure to wind and light is extremely beneficial. There are many compounds which are available for the control of Botrytis, from a copper sulfur spray, which is hundreds of years old, to new products coming out each year. ⁽⁶⁾ Normally a spray application would be applied before the cluster fills out and closes to get complete coverage within the cluster. ⁽⁴⁾⁽⁵⁾ Growing small and open canopies, which are modified by trimming, is another method for managing Botrytis infection. ⁽⁶⁾ A certain level of Botrytis infection is desirable in California winemaking to enhance the aroma and flavor profile of a wine.

Most growers try to keep inputs to a minimum. Owl boxes are being utilized by many growers now with great success for the control of rodents in the vineyard. ⁽⁴⁾ Insect pressures such as orange tortrix, which feed in the cluster causing berry breakdown and resulting rot, has to be monitored closely. Riesling can sustain relatively high populations of sucking insects such as thrip and hoppers before needing a spray. The insect which has a major effect on the canopy of Riesling is mite, especially at late season. Mite should be closely monitored and sprayed at the low end of the threshold. ⁽⁶⁾ Natural alternatives for insect control include use of a lignin product on roads for dust, permanent cover of white clover and rye for dust in the rows and the introduction of predator mites. For control of thrips, poppies are planted that host the predator bug and attract the thrips. A multitude of different flowers are utilized in the cover crop as insect

attractants. Oil seed radish is used for control of nematodes, and winter peas, oats and dicon radish are especially useful for clay soils. Sudan grass is planted in the spring for wind protection. ⁽²⁾

Riesling is highly suited to machine harvesting due to fairly thick skins, small berries and easy detachment from the rachis. Hand picking is very costly due to the small berry size. ⁽⁶⁾ Depending on the extent of Botrytis infection and customer desire, a combination of hand and machine harvest may be needed. It may be necessary to remove Botrytis infected fruit first by hand, which will then allow for enhanced development of the clean fruit suitable for machine harvesting. ⁽⁴⁾ Of course, in certain situations clean Botrytis infection is encouraged for the production of select late harvest wines which obviously require careful hand harvesting.

WINEMAKING

Rieslings are made by smaller producers in a dry or off dry style. Larger producers make wines in an off dry to slightly sweet style. Then there is the whole discussion around late harvest wines.

Current winemaking dictates that Riesling grapes are hand picked or machine picked in California mid October and into November in the cooler growing regions. The average ° brix at harvest over the last 25 years has been 21.4. Although many producers pick on flavor at higher brix with some resultant Botrytis infection and flavors of dried apricot or peach, and yet still retain sufficient acidity to balance the higher sugar.

The fruit is normally whole cluster pressed to combine the entire free run and press to the receiving vat. The juice is then settled for ≤ 24 hours at $\approx 50^{\circ}$ F (10° C). The option to add bentonite to the settling tank is considered and normally the addition is made to the fermenter. After settling, the now clear juice is racked to the fermenter where a natural tartaric acid addition may be needed to adjust pH to ≈ 3.0 and resultant balance in total acidity. Yeast is added in dry form such as Cote de Blanc (Epernay II) and/or cultured from a slant i.e. Steinberg Strain. In late season Premier Cuvee, (Prisse de Mouse) may be used to facilitate fermentation completion on a timely basis.

Fermentation is carried out at $\leq 50^{\circ}$ F (10° C) and in late season as the cellar ambient temperature decreases, it becomes increasingly difficult to complete the fermentation. The wines are normally arrested at the desired residual sugar level by immediate and rapid refrigeration combined with appropriate SO₂ addition, or by centrifugation. Necessary cold stabilization is required and follows prior to bottling.

Late-harvest dessert wines are traditionally made in California from Riesling due to the susceptibility to Botrytis infection. The retention of acidity through the very late stages of ripening allows the grapes to become concentrated by dehydration and still retain sufficient acidity to balance the high residual sugar. ⁽¹⁾ Of course, selection at harvest is critical and conditions must be ideal during the vintage to develop the “Noble Rot”. The individual cluster and/or berry selection determines the appropriate concentration of sugar which affects the resultant style of the wines. Yields are sparse and processing the “dehydrated” fruit is difficult. It is difficult to assign a desired sugar level to the late harvest style of Riesling as it varies from vintage to vintage. The concentrated liquor of the pressing undergoes a long slow fermentation, while at the same

time trying to achieve higher fermentation to equilibrium. That point at which the yeast no longer function as a result of higher alcohol and high residual sugar. Greatness is achieved. Truly the nectar of the Gods.

MARKETING

Of course marketing is about all those “Ps”; that is; product, pricing, packaging, promotion, and placement. The product must be fruit-forward, true to varietal style, and focused on a consistent flavor profile. Adopting a pricing philosophy that highlights the “value” of the wine vs. the competitive frame is necessary. With the packaging, the focus is on the brand name and sub-brand product identifier. Promotions highlight the various occasions to the consumer and to highlight the “casual, straightforward” style and character of the wine. Promotion and advertising programs are designed to increase the level of awareness for the brand and to encourage loyalty. The strategy is to create the mood and feeling surrounding those occasions where the quality of the moment demands a reliable, quality-driven wine. Highlighting the beauty and quality of the winery, winemaking and its product associations create this mood. Distribution goals need to be set. Determine the balance between on-premise and off-premise. A large brand may choose a relationship of 20% on-premise and 80% off-premise, whereas a smaller “boutique” brand may reverse this relationship, or choose to sell entirely in the on-premise environment. A distribution goal may be to maintain greater than or equal to distribution in on and off-premise channels than the competitive frame. At Fetzer, in the on-premise, the focus is on restaurants with a spicier cuisine. In the off-premise, Riesling is marketed and promoted with other whites that are not Chardonnay, promoted several times during the year, and promoted separately. It is marketed to a consumer with a sweeter palate who is looking for something that is not White Zinfandel. We must remember that in the U.S. we talk dry but drink sweet! The Thanksgiving holiday is the largest promotion and selling opportunity for Riesling.

A review of Nielsen scan data reveals some interesting trends. Of course, Nielsen data only represents the grocery store channel, but probably much of the Riesling is sold through this channel. Using the assumption that the Nielsen data represents about 40% of the total US market we can make the following projections for Riesling on a depletion basis. Washington State is the leader at 450,000, cases followed by California at 400,000 cases, and Oregon at 90,000 cases. The total of all other states represents 110,000 cases. The import market is 280,000 cases and the total for the U.S. market is 1,330,000 cases.

Some observations when reviewing the data: for the first time in 2001, Nielsen case and \$ sales of Washington State brands exceed that of California. Over the past two years, the growth of Washington State brands has been about twice that of the California brands. Imported brands have grown case volume by twice the rate of domestic brands. The #1 brand in case and \$ sales is the import Schmitt Sohne (16% share of \$). The #2 brand in case and \$ sales is Chateau Ste Michelle (16% share of \$). Fetzer is the overall #3 brand in case and \$ sales (9% share of \$). The largest Nielsen markets for Riesling are Seattle (12% of \$) and Portland (12% of \$). Each of these markets are almost the same size as the total state of California (13% of \$).

The table below represents a summary of Nielsen data for total US depletions for the calendar years 1999, 2000, 2001 as well as a look at the leading brands performance during the same time period. The exciting take away from this data is that Riesling has been experiencing strong growth or the past three years. As consumers look for white wine alternatives to Chardonnay, Riesling could once again regain the prominence it once held as a truly interesting white wine variety when made in a dry or off dry style. These wines grown in the appropriate cool climate regions of California have tremendous flavor and aroma complexity and develop nicely over time with proper cellaring. Clearly the lack of recognition of Riesling wines greatness in the US is due to a general lack of wine culture. In fact it is due to no more than a lack of awareness. Riesling wines simply aren't promoted strongly enough in the US to make a big impact. ⁽⁷⁾

SUMMARY TOTALS								
TOTAL BRANDS								
STATE OR IMPORTED	CY 1999-9L		CY 2000 9L		CY 2001 9L		1999-2001 Growth	
	Case Vol	\$ Sales	Case Vol	\$ Sales	Case Vol.	\$ Sales	Case Vol.	\$ Sales
	429,184	\$33,358,729	494,345	\$39,276,544	537,275	\$44,561,776	22.30%	33.60%
SUMMARY BY STATE AND IMPORTED								
Washington	141,022	\$10,391,484	165,402	\$12,618,751	177,492	\$14,489,222	25.9%	39.4%
California	145,907	\$11,390,351	152,823	\$12,851,890	161,823	\$14,209,247	10.9%	24.7%
Oregon	32,785	\$2,548,902	36,123	\$2,901,278	34,442	\$2,896,881	5.1%	13.7%
Other States	46,832	\$3,326,000	47,932	\$3,506,642	50,445	\$3,776,333	7.7%	13.5%
Imported	72,638	\$5,701,992	92,065	\$7,397,983	113,073	\$9,190,093	55.7%	61.2%

BRANDS BY STATE (in descending order of 2001 Sales \$)

BRAND	STATE OR IMPORTED	2001 9L		1999-2001 GROWTH	
		CASE VOL	\$ VOLUME	CASE VOL	\$ SALES
Schmitt Sohne	Importers	86,060	\$6,991,840	63.5%	70.4%
Chateau St. Michelle	Washington	82,990	\$6,939,228	34.7%	42.2%
Fetzer	California	47,439	\$4,079,239	26.5%	34.0%
Kendall-Jackson	California	21,961	\$2,608,964	28.6%	28.2%
Ste. Chapelle	Idaho	38,982	\$2,583,768	2.1%	5.6%
Hogue	Washington	22,502	\$2,005,467	19.4%	43.6%
Columbia Crest	Washington	22,761	\$1,777,229	46.7%	53.8%
Columbia	Washington	18,485	\$1,449,590	22.5%	35.8%
Bridgeview Vynds	Oregon	16,305	\$1,271,265	25.3%	33.9%
Beringer	California	14,017	\$1,200,043	-40.0%	-30.0%
Covey Run	Washington	16,849	\$1,194,170	-0.3%	16.0%
Robert Mondavi Coastal	California	11,467	\$1,160,995	127.8%	134.4%
Rosemont Estates	Importers	10,454	\$941,774	45.6%	49.9%
Turning Leaf	California	10,517	\$925,566	57.5%	71.3%

Source: Nielsen scan data

References

1. Bettiga, L. Wine Grape Variety. Riesling. University of California Cooperative Extension. Unpublished.
2. Boyer, Rick. Jekel Vineyards. Greenfield, California. Personal communication.
3. California Grape Acreage. California Agricultural Statistics Service. 1973-2000.
4. Hampton, Dale. Hampton Farming Company. Santa Maria, California. Personal communication.
5. McFarland, Kelly. General Vineyard Services. Gonzales, California. Personal communication.
6. Petrovic, William D. San Bernabe Vineyards. King City, California. Personal communication.
7. Pigott, S. Riesling. pp 178-179 (1991).
8. Preliminary Grape Crush Report. California Department of Food and Agriculture. 1976-2001.
9. Robinson, J. The Oxford Companion to Wine. Second Edition. Riesling. pp 580-582 (1999).
10. Sullivan, Charles L. A Companion To California Wine. pp 395-396 (1998).
11. Younger, W. Gods, Men and Wine. Hutchison, John N. Drinking in America. Chapter Ten, pp. 449-459 (1966).