

Grapevine Production in California

Daniel Geisseler and William R. Horwath

Early Production

Records indicate that grape cuttings were planted at the Mission San Diego as early as 1781, possibly even before that. By the early 19th century grapes were grown in small quantities at several missions ^[1].

By the time of the Gold Rush, the vineyard area had reached a few hundred acres and grapes were sold to high prices in Los Angeles and San Francisco ^[3, 10]. As a consequence of the lucrative prices, many vineyards were planted and the area reached 56,000 acres in 1880 ^[10]. However, due to Pierce's Disease in the 1880s, areas in the south became unsuitable to vines and the industry was forced to move to central and northern California ^[10].

Despite this setback, California's vineyard area continued to expand, reaching

350,000 acres by 1910 ^[10]. However, demand did not grow nearly as fast and the resulting overproduction led grower prices tumble ^[8].

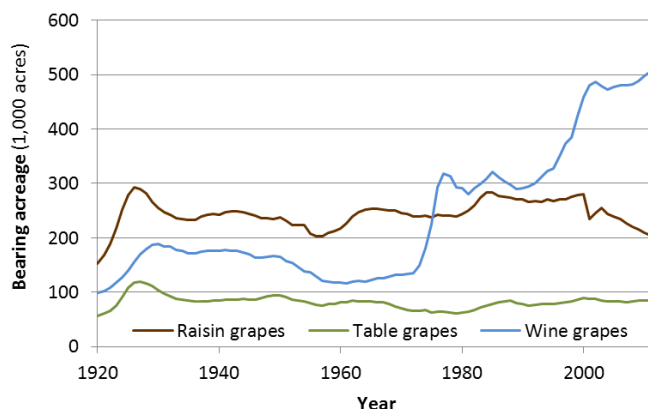
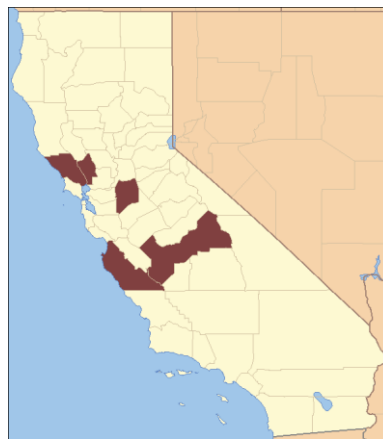


Figure 1: Area of bearing vineyards in California since 1920 ^[13].

Wine Grapes

During prohibition, the number of active wineries in California shrunk to a dozen, which survived by producing sacramental and medicinal wines. Wine production shifted to private homes and bootleggers' establishments, which greatly affected quality. The wine grape area even increased during prohibition, reaching a peak in 1927 (Figure 1) ^[10]. This is no surprise considering that the prices realized peaked at \$ 82 per ton in 1921 ^[13]. However, the increased acreage together with the low quality of the wines led again to overproduction and the prices crushed. In the 1930s, the price was generally below \$ 20 per ton ^[10, 13]. The number of wineries grew quickly after prohibition was repealed and more than 400 wineries were listed



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Figure 2: Location of the five leading wine grape producing counties in California ^[12].

1934^[9]. However, low quality due to poor production practices, inadequate aging, and less desirable grape varieties, was still an issue. With consumer demand growing slower than production, overproduction was once again inevitable^[9].

Between 1920 and 1973, the wine grape area ranged from 100,000 to 200,000 acres and was considerably smaller than the area for raisin production (Figure 1). With increasing consumer interest, the statewide acreage of wine grapes rose sharply in the 1970s, and more than doubled within 4 years, reaching 318,000 acres in 1977^[12]. The wine grape area now exceeded that of raisin grapes. The San Joaquin Valley and the emerging Central Coast wine-growing region contributed most to the expansion^[6]. Most of the plantings were of varieties for fine red table wines. This changed the characteristics of the California wine industry, as most of the wine produced until then was in the appetizer or dessert category. By 1978, over 83% of the total wine produced was classified as table wine^[3].

The boom continued and the number of wineries increased from approximately 330 in 1975 to almost 2,500 in 2006^[14]. The boom was associated with a shift in demand towards higher quality table wines. This trend was largely initiated by the now famous 1976 wine tasting in Paris, where several California wines were voted superior to French vintages^[5, 14].

With increased demand, plantings increased again in the 1990s, with the fastest growth on the North and Central Coast^[5]. Predominantly varietal grapes, such as 'Chardonnay', 'Zinfandel', 'Cabernet Sauvignon' and 'Merlot' were planted^[5]. Between 1995 and 2002, the bearing acreage increased from 328,000 to 486,000 acres. Since then, the area has increased at a slower pace, reaching 506,000 acres in 2012^[12]. California now accounts for 90% of all U.S. wine production^[15].

Despite the shift of wine production to the coastal area, San Joaquin is still the county with

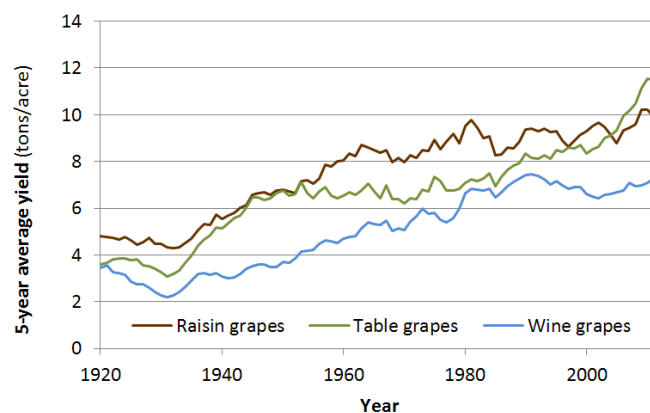


Figure 3: Grapevine yields since 1920 in California^[13].

the largest area of bearing wine grapes. In 2012, the 109,500 acres accounted for 22% of the area in California. Other important wine grape counties are Fresno, Sonoma, Napa and Monterey, which have a share of 9 to 12% each (Figure 2)^[12]. Wine grape production differs considerably between the coastal and the inland regions. In the coastal regions, production of high-quality wine dominates, while in the inland regions lower-quality wines sold in jugs or boxes at low prices are prevalent^[14]. This division is also reflected in the yields. The average yield in 2011 and 2012 in Fresno and San Joaquin Counties was 9.5 tons/acre, while it reached only in 3.6 tons in Napa and Sonoma Counties^[2]. Overall, the wine grape yield averages some 7 tons/acre in California (Figure 3)^[12].

In 2012, 38% of the bearing acreage was planted to white wine varieties, with 'Chardonnay' being by far the most popular variety^[13]. 'Chardonnay' production has increased tremendously since the 1970s, among other reasons because it is a versatile grape that can grow in a wide range of soils and climatic conditions and is also popular with consumers^[14]. The most popular red wine varieties were 'Cabernet Sauvignon', 'Zinfandel', 'Merlot', and 'Pinot Noir'^[13].

Raisin Grapes

Since the early 1920s, the area of bearing raisin grapes has remained relatively constant, ranging from 200 to 300 thousand acres (Figure 1)^[12]. In 2012, the acreage of bearing raisin grapes was 205,000 acres in California. 72% of the harvested raisin area was located in Fresno County, followed by Madera County which had a share of 14% (Figure 4)^[12].

In the 1940, the vineyards of California produced 40% of the world's raisins^[10]. In 2011/12, virtually all U.S. raisins were produced in California, accounting for 30% of the world production^[7, 11].

The first raisin variety, Muscat of Alexandria['] was introduced in 1861 and was initially planted in the Fresno area in 1873 on 25 acres^[10]. 'Thompson Seedless' was introduced in 1872 and soon became the dominant variety^[10]. Today, 'Thompson Seedless' is still the dominant variety, accounting for approximately 90% of California's raisin production^[13].



Figure 4: Location of the two leading raisin grape producing counties, Fresno and Madera, in California^[12].

The market trends for raisin production are not completely decoupled from the trends in the wine and table grape market, as 'Thompson Seedless' grapes are used as table grapes and can be crushed for the production of lower-quality wine products^[4, 6].

Table Grapes

The table grape area has been relatively constant in California since the 1920s, ranging from 60,000 to 120,000 acres (Figure 1)^[12].

Initially produced mainly for local consumption, shipments of table grapes to the Eastern U.S. increased in the early parts of the 20th century thanks to increased demand and improved transportation^[10]. Today, 98% of the U.S. table grapes are produced in California^[7].

Table grape production is concentrated in the southern San Joaquin Valley, with 85% of the harvested area being located in Kern and Tulare County in 2012 (Figure 5)^[12]. A number of varieties are planted, with 'Crimson Seedless' and 'Flame Seedless' currently being the most popular^[13].



Figure 5: Location of the two leading table grape producing counties, Kern and Tulare, in California^[12].

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Daniel Geisseler is an Extension Specialist in the Department of Land, Air and Water Resources at the University of California, Davis.

William R. Horwath is professor of Soils and Biogeochemistry in the Department of Land, Air and Water Resources and the James G. Boswell Endowed Chair in Soil Science at the University of California, Davis.

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