

## Overview of the California Grape Industry

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The California grape industry is comprised of three major segments--wine, raisin, and fresh table grapes. Some grapes are also used in other products such as brandy, grape juice, grape juice concentrate, canned grapes, and frozen grapes. Grapevines are planted on 285,000 hectares in climates ranging from cool coastal valleys in northern California, to intermediate, warm interior valleys in central California, and to the extreme, hot desert areas in southern California.

Wine grapes are primarily planted in the cooler climate coastal valleys from northern to southern California and the warmer climate interior central valleys (San Joaquin and Sacramento valleys). The coastal valleys primarily produce premium, varietal table wines from cultivars such as Chardonnay, Riesling, Sauvignon blanc, Cabernet Sauvignon, Zinfandel, Pinot noir, and Merlot. Of these, Chardonnay and Cabernet Sauvignon are the leading cultivars, which have experienced relatively high prices at the winery and increased plantings in recent years. Total plantings of these districts now encompass 54,000 hectares.

The climate of the coastal valleys is strongly influenced by the Pacific ocean which moderates temperature and provides cool night-time temperatures, of particular importance during grape ripening. This marine influence on temperatures enhances fruit composition and the ultimate quality of premium table wines. Many coastal districts receive adequate rainfall to grow and ripen grape crops. Supplemental irrigation may be provided as needed by sprinkler or drip irrigation, particularly during the development of new vineyards.

The warmer interior regions primarily produce dessert wines, brandy, grape concentrate, and generic table wines. Vineyards are generally higher yielding because of the longer growing season, more uniform, deep soils, and consistent water supply through irrigation. Cultivars are chosen for adaptation to warmer climates and high yielding characteristics. Thus, the cultivars French Colombard, Chenin blanc, Sauvignon blanc, Thompson Seedless, Barbera, Ruby Cabernet, Grenache, Zinfandel, and Rubired are of importance. Approximately 80% of California's annual grape crush comes from this area. Wine cultivars are utilized from 77,000 hectares, plus some raisin and table cultivars for brandy and concentrate production.

About 40% of the wine grapes in California are machine harvested; only about 5% of the acreage is machine pruned. The use of both mechanization practices is increasing.

Fresh table grapes are produced in the interior districts, beginning in May in the Coachella Valley desert district, advancing northward into the southern San Joaquin Valley in late June, and ending in the central San Joaquin Valley in October. Late season table grapes are held in cold storage to supply fruit until February. Thereafter, and into May, shipments of table grapes from Southern Hemisphere producers such as Chile dominate the U.S.A. market.

California table grapes are produced on 50,000 hectares. Total shipments are about 60 million 10.5 kilogram packages annually. The principal cultivars are Thompson Seedless, Flame Seedless, Emperor, Perlette, Ruby Seedless, and Ribier.

Raisin grapes are primarily grown in the central and southern San Joaquin Valley. Harvest and drying occurs from late August to early September when grape sugar accumulation in high and dry weather prevails. Most raisins are naturally sun-dried in the vineyard on paper trays.

Approximately 73,000 hectares of vineyard are utilized annually to produce 375,000 metric tons of raisins. The principal cultivar is Thompson Seedless.

The paper that I am presenting at your Annual Meeting is on a very important topic concerning grape growers, vintners, and the general public, i.e. nitrogen. It is important to growers because it represents their greatest expenditure for fertilizer and can have a major impact on grape composition, composition, and quality. Nitrogen can be readily managed for efficiency of use, yet it still presents concern for pollution by  $\text{NO}_3$  in our water supplies. Other concerns are the effects of N as an essential yeast nutrient during fermentation and the possible formation of ethyl carbamate in wines from N compounds. Consequently, grapevine N utilization and efficiency of application are receiving increased attention in research in many viticultural areas, including California.