

Growing Grapes

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Grapes are native to all continents in the Northern Hemisphere. There are 2 types of major importance.

The **European grapes** (*Vitis vinifera*) are most familiar. Most commercial table and wine grapes are European. Most European grape varieties perform better in inland Orange County where the summer is quite warm. Within 15 miles of the coast they must be treated for Powdery Mildew disease.

The **American grapes** (*Vitis lambrusca*) originated in the Northeastern United States. Most American grape varieties need little heat to perform and are resistant to Powdery Mildew disease. Typical American grapes like *Concord*, have tougher skins and softer flesh.

The **Hybrid grapes** are American grapes that have been bred with other species (usually European). Hybrid grapes often combine characteristics of both parents. In coastal Orange County the recommended hybrids combine the mildew resistance of American grapes with the tender skin and crispy flesh of European grapes.

We offer grape plants grown on their own roots. Many commercial vineyards acquire grafted plants that use a root-stock that is tolerant of Phylloxera (an insect that infects roots) however the University of California is not yet convinced of their value in areas where Phylloxera is not present and the root-stock does alter the flavor.

Table Varieties:

Blueberry (Hybrid American) Seedless, medium size round berry with purple-blue skin. Hint of blueberry flavor. Mildew resistance A-

Concord (American) Seeded large round berry with tough, black skin. Juicy and sweet with an outstanding foxy flavor. Ripens mid-summer. Good for table, excellent for juice

and jelly. Performs well throughout Orange County. Will produce good fruit with just a few hours of direct sunlight. Mildew resistance A+

Einset (Hybrid) Seedless, large berry with deep red skin. Outstanding flavor (hint of strawberry) with firm flesh. Harvest mid-summer. Mildew resistance A- **HIGHLY RECOMMENDED** limited quantities available.

Flame (European) Seedless medium size berry with red skin and firm, crispy flesh of very good quality. Good for table and raisins. Ripens mid-summer. More reliable when grown well away from the coast (10 miles+). This is a very popular commercial variety. In central Orange County mildew may destroy the crop more than 60% of the time. Mildew resistance D

Interlaken (Hybrid) Seedless medium size, round berry with greenish-yellow skin. The strong, sweet flavor combined with tender skin and crispy flesh makes this an outstanding variety. Mildew resistance B

Jupiter (Hybrid Muscat) Seedless large, oval grape with reddish blue to deep blue skin. Excellent flavor and sweetness with firm flesh. **STAFF FAVORITE.** Mildew resistance A.

Marquis (Hybrid) Seedless large, round grape with light yellow green skin. Flavor is a mild Concord firm flesh. Mildew resistance B

Mars (American Hybrid) Seedless, large berry with deep blue skin. Concord-like flavor. Best production when well established. Best mildew resistance among seedless grapes A+

Neptune (Hybrid) Seedless, large berry with pearly greenish skin. Flavor similar to Thompson seedless. Mildew resistance B-

NY47616 (Hybrid) Seedless, large berry with blue skin. Fantastic Concord flavor. Mildew resistance A.

Reliance (Hybrid) Seedless, large berry with a red blush. This is supposed to be an improvement over Suffolk Red. Mildew resistance B+.

Remailly (Hybrid) Seedless, very large berry with light green to light yellow skin (brownish in excessive sun). Extra firm, meaty flesh and flavor similar to Thompson Seedless. Mildew resistance B.

Spartan (Hybrid) Seedless, small berry with light green skin. Firm flesh has flavor similar to Thompson Seedless. Mildew resistance B-

Suffolk Red (Hybrid Russian/American) Seedless, large berry with a red blush. This has been the taste test winner of the Hybrid grapes. Mildew resistance B+ CURRENTLY OUR BEST SELLER

Sunbelt (Hybrid American) Seeded, large round berry with tough blue skin. This daughter of Concord was selected for more even ripening and better quality in hot climates. Mildew resistance A

Thomcord (Hybrid) Seedless large berry with nearly black skin. Flavor and flesh texture is halfway between Concord and Thompson Seedless. Harvest mid-late summer. Mildew resistance A RECOMMENDED

Venus (Hybrid) Seedless large berry with nearly black skin. Concord-like flavor with firmer flesh and more tender skin. The clusters are unusually tightly packed. Incredibly productive even when grown in part sun. Very good for table or wine. Mildew resistance A RECOMMENDED.

Wine Grapes:

Gary admittedly has little experience growing wine grapes. When the variety performs best in cool summer climates we assume that it wants summer high temperatures that average below 85°F. This is usually found within 10 miles of the coast or above 4000 foot elevation in the local mountains.

Cabernet Sauvignon Red wine. Small, round seedy berry with black skin that ripens late. Best in cool summer climates. Except for susceptibility to Powdery Mildew disease it is relatively easy-to-grow. Adaptable to most soils, but ripens earlier on gravely soils.

Chardonnay White burgundy wine and the most popular in California. Small round berry that ripens early. Best in cool summer climates. Easy-to-grow and prefers clay, chalky or limestone soils.

Merlot Red wine. Medium size, round berry with bluish-black skin. Best in cool summer climates. Prefers clay, chalky or limestone soils.

Pinot Noir Burgundy wine. Small round berry with black skin in small pinecone-shaped clusters. Best in cool summer climates. Difficult to grow, susceptible to many diseases, but quite popular because of the quality of the wine.

Shiraz (Syrah) Red wine. Large, long, loose bunches on a vigorous, disease resistant vine. Prefers poor soil and hot climates. The most popular wine grape in Australia.

Zinfandel Red wine. Medium size, round berry with purple to black skin in large, tight bunches. Ripens fairly early. Vigorous vine. Excellent for cool or warm climates.

Location

American & Hybrid grapes can be grown anywhere they can receive at least half sun. A full day of sun will result in larger clusters and better flavor and sweetness, however I am continually amazed at the excellent production of many of these varieties under marginal conditions.

European grapes have to be located where there is excellent air circulation, or where they can be easily treated for Powdery Mildew disease. Give European grapes at least a half-day of sun, but most do best with a full day. Many vineyards have a rose garden nearby because during the year roses tend to show symptoms of Powdery Mildew 2 weeks before the grapes are affected.

Soil & Irrigation

Grapes require a well-drained soil. The soil type can be anything from gravel to clay, but drainage is a must. As with any other plant we do not recommend incorporation of organic matter into the soil. We do recommend mulching the surface with organic matter to provide insulation and nutrition. Drainage can be improved by raising the planter and/or incorporation of pumice, perlite, decomposed granite or sand. Raised beds are most beneficial.

Grape plants prefer average to ample moisture. Moisture stress during bloom can cause poor fruit set. Lack of water will lead to undersize fruit. Inconsistent watering can cause fruit to split. Drip or trickle irrigation is widely used in California. Keeping the leaves and fruit dry does prevent certain diseases.

Wine grapes are often grown under mild moisture stress to produce smaller fruit with a higher sugar ratio and higher acidity. This may be difficult to achieve in a home garden if plants in the surrounding areas require more irrigation.

Fertilization

Grapes do not require much fertilizer. Excessive feeding results in rampant growth at the expense of fruit quality and quantity. We recommend organic fertilizers.

Diseases

Powdery Mildew can cause total crop failure on most European grapes. American or Hybrid varieties are resistant, but can still be affected on the worst years or in locations with poor air circulation. Powdery mildew is a surface fungal infection that affects both foliage and fruit. If not controlled the skin of the berries will crack (and spoil) before harvest. Organic products include various horticultural oils and plant oils applied as a spray repeated weekly during mildew weather. Mildew is promoted by our typical early-May through mid-July gloomy weather. (Iceberg roses planted nearby will pick up Powdery Mildew in spring about 2 week before the grapes.) Sulfur dust is also an effective treatment.

Pierce's Disease is the most serious local disease that you may or may not encounter. It was originally called **Anaheim Disease** after it destroyed the Anaheim Colony vineyards in the 1870's. Most European grapes are affected. Some American and some hybrids have shown tolerance. This bacterial infection is spread primarily by insects called **sharpshooters**. So far I haven't seen literature suggesting that pruning tools can cause infection, but I would think it possible. The sharpshooter sucks sap out of the stem causing an infection that severely limits the flow of sap beyond that point. The infection spreads quickly upwards and more slowly down the stem. The foliage on the stem gets a scorched look. Either the leaf's edge or sections of the leaf turn yellow or red with scorched edges. Any developing fruit shrivels and the following years the growth on the affected branch is underdeveloped or fails altogether.

Cutting off infected branches before the infection spreads is the only way to cure a grape plant. Badly infected plants should be removed. There is no treatment that can cure the infected portion. Treating surrounding vegetation for Sharpshooter insects can help. The main problem with Pierce's Disease is that it can infect many plants other than grapes, but have no outward symptoms.

Shaping the Vine

Generally grapes are excellent producers and without any training will produce a bumper crop. The reasons for training grapes are to limit the size of the vine, lower the cost of maintenance, improve the quality of the grape, and control the harvest period. Around the World there are probably over a hundred named training methods. Vineyards often use different systems for different varieties or different climates. In inland areas foliage cover is essential for preventing sunburn on the fruit. In coastal areas it is important to have less foliage cover for better air circulation. The goal is to have the clusters of fruit covered by 1-1/2 layers of leaves. If the production branches are covered too deeply there is insufficient light to get quality or sustain production. Here I will list the most common methods.

1. **Heading** The grape plants are trained like little trees with no support system used. For varieties like Zinfandel with low vigor, this is quite popular.
2. **Single Fruit Zone** The grape plants are trained on wires so that the developing fruit forms a straight line running down the vine row. This is by far the most popular design. The vines can be trained straight up, allowed to hang straight down, or anything in between, so long as the bunches are hanging at the same height.
3. **Divided Fruit Zone** The grape plants are trained on wires so that the developing fruit forms two straight lines running down the vine row. The fruit lines are in parallel rows (separated by at least 2 feet) either side by side or stacked vertically. When the lines are stacked vertically, the bottom and top do not mature at the same time or with the exact same fruit character.

On farms there is a set distance between rows (3-12 feet) and plants (3-8 feet). In experiments the harvest volume went up as the distance between rows decreased, however, the spacing of plants along the row made little difference. Of course small distances between rows makes maintenance more difficult. The size of farm equipment usually dictates the distance between rows. There are some vineyards that use overhead trellises that cover the entire plot.

Please note that farm methods promote a crop that ripens all at once, making harvesting simpler.

Homeowners may prefer a crop that ripens over an extended period. The less uniform your training method is, the longer the harvest period. Grape clusters high off the ground may ripen a month before clusters close to the ground.

The table grapes in my own yard have no set design. Four vines are growing on small trellises, one is on a wrought iron fence, and two others are on top of our patio lattice. All produce more than we can eat.

Winter Pruning

Grapes produce fruit on branches growing off of year old wood. This means you must save some of last year's growth to have fruit this year. Grapes will produce fruit without pruning. Proper winter pruning will create a more uniform, high quality crop. There are several ways of doing this.

1. **No Pruning** There are some vineyards that don't prune at all except to skirt the vines to keep leaves off the ground. Production is higher but quality suffers. There are variations on this theme.
2. **Spur Pruning** This is traditional for wine grapes. Year old branches are cut back to 1-3 nodes depending on vigor.
3. **Cane Pruning** This is traditional for table grapes. Year old branches are cut back to 2-3 feet long.