

Vineyard Training Systems

Trellis systems

- Grapevines will not grow successfully without a support system
- Trellis systems provide adequate sunlight, improve maintenance and profitability, maximize yields, minimize diseases and develop strong and straight trunks.
- All modern trellis systems are now made from metal not wood.
- Today there are numerous styles of trellis systems available
- The vineron must consider the anticipated vine vigor and canopy size before selecting a trellis system.
- Trellis systems will differ for machine harvested vineyards vs. hand-picked vineyards
- Highly vigorous grapevines will require durable and expansive systems to accommodate the growth of the vine.
- In my research I discovered 64 different trellis systems; I have only mentioned the major systems in this guide.

There are four main systems for training vines, each with variations. They are Bush Vine Training or Gobelet, Replacement Cane Training, Cordon Spur Training and Parral or Pergola Training. To best understand each system, carefully review all of the material in this guide and review the illustrations provided on the main page of the website. http://vinodiary.com/?page_id=482

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Bush Vine Training or Gobelet – The vine is spur-pruned and trained as a free standing plant and does not use a trellis system. The design of this system allows the plant to retain heat and ripen grapes into to night. Vines are resilient to disease but are difficult to harvest. It is also important not to let the fruit shoots drop to the ground. This is a very ancient way of growing a vine and is typically found in warmer regions such as Rhone, Beaujolais, Rioja and older vineyards in Australia. This model is not suitable for damp regions where rot may occur and is also susceptible to spring frost. **Also called Alberello**

Replacement Cane Training – Each year new canes are trained along lateral wires. Refers to the Guyot System which can be single or double. Most commonly used trellis system for low yield high quality fruit. Fruiting canes are trained in one direction for Single Guyot and in a “T” formation for Double Guyot, along wires that run just above the trunk. Shoots that emerge from the canes can be trained in an upward or downward direction depending on the variety of vine and desired exposure. Shoots are attached to a second wire located either above or below the cordon. Shoots emerge horizontally and can be manually directed to the desired position. There are two styles of Guyot named after Dr Jules Guyot, a 19th century French scientist.

- **Single Guyot** – each vine has one cane preserved each year, for the generation of next years many fruiting canes, and one spur, which is for the generation of the replacement cane
- **Double Guyot** – system widely used in Bordeaux, each vine has two canes and two spurs, the canes being trained in opposite directions along wires. The best way to handle small clustered varieties.

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Cordon Spur Training – The trunk of the vine is low to the ground and grown horizontally with either one (unilateral) or two (bilateral) permanent cordons that are never pruned away. Each cordon contains a number of spurs that are pruned each year and yield the growth of new wood. The unilateral cordon system is often referred to as the *Cordon de Royot System*. The bilateral cordon system is the most commonly used and has many variations. Cordon systems can train shoots in both upward and downward positions depending on the type of vine.

- **Vertical Shoot Positioning (VSP)** – Type of bilateral cordon where shoots are trained vertically in order to expose the fruit to the sun early in the season. With no foliage below the cordon, this increases air flow to cool and dry the grapes after rainfall. This also prevents diseases associated with prolonged water exposure. Since the cordons are generally waist high, access to fruit is very easy for harvesting. Commonly used in cooler climate zones. Used for moderate to high vine vigor. *Also used in Replacement Cane Training in Guyot systems.*
- **Geneva Double Curtain** – Complex system rarely seen in new vineyards. Consist of a highly trained trunk-one or two trunks-that are grown vertically-3 to 5 ft high-with cordons stretching out at a 90° angle from the trunk(s). The formation creates a curtain of foliage and fruit that hangs down on each side. Used for moderate to high vine vigor.
- **Lyre or U-shaped Trellis** – Very much like the Geneva Double Curtain system except the canes are trained up rather than down. This system exposes the fruit to more heat and airflow. This is great for protecting vines against mildew and diseases. More commonly used in high yield vineyards. Developed in the 1980's in Bordeaux, France by Dr. Alain Carbonneau. Used for moderate to high vine vigor. *Also used in Replacement Cane Training but it is very rare.*

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- **Scott Henry** – Developed by former aerospace engineer Scott Henry from Henry Estate Vineyards in Oregon. A variation of the VSP system that uses four canes instead of two, vines are spaced 7 feet apart. This system helps to ripen fruit and decreases yield in soils that are very fertile. The system has two canopies, one that is trained up and one that is trained down. This system produces high quality fruit but is expensive and labor intense. Used for moderate to high vine vigor. *Also used in Replacement Cane Training but it is very rare.*
- **Smart Dyson** – Similar to the Scott Henry system except there are only two cordons instead of four. The **S-D** system was developed by Richard Smart and John Dyson. Canes are trained both vertically and downward off the cordon. Highly adaptable to major varieties and works well with mechanical harvesting. **S-D** system increases yield and is beneficial for varieties with high vigor.
- Other systems such as **Chablis, Goblet, and Smart Henry** are in use as well. Information on these systems seems to be less available at this time. Perhaps these should be revisited at a later time.

Parral or Pergola Training – Vines are trained high on canopy-like structures where the grape bunches hang down below the cover of leaves. Beneficial in hot climates. An old world tradition of training vines that is being abandoned for more modern systems. Most of my research led to the training of grapes of the American species rather than *V. vinifera*.

- **Factory Roof** – type of pergola commonly used for table grapes.