

Vineyard Management Practices

Vineyard management and the role of viticulturists include monitoring and controlling pests and diseases, nutrition, irrigation, canopy management, monitoring fruit development and characteristics, deciding when to harvest, and vine pruning during the winter months. Additional details on some of these elements of management are provided below.

Trellis systems

Trellis systems are the main way we achieve the canopy microclimate and hence yield and quality for a particular variety and wine style. There are many different types of trellis systems but in general the higher the vigour of a site the larger the canopy surface area needed and therefore a suitable trellis system is needed to accommodate this.

Vertically shoot positioned trellis

Vertically shoot positioned trellis (VSP) systems are trained vertically upwards and are suitable for low to medium vigour vineyards. That can be mechanized for pruning, harvesting and other management practices such as trimming and leaf removal.



VSP trellis

Photo courtesy of Patrick Iland

Scott Henry Trellis

The Scott Henry trellis system was developed in Oregon and is a vertically divided system where shoots are trained upwards and downwards. This produces two different zones of fruit and suits vines with greater vigour.



Scott Henry trellis
Photos courtesy of Patrick Iland

Lyre trellis

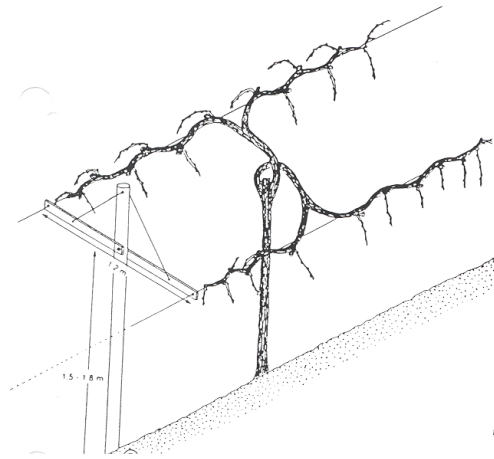
This trellis system is a divided typically used in high-yielding vineyards and was developed by Dr. Alain Carbonneau in the 1980s in the Bordeaux region of France. It is now widely used throughout the world. Canes are trained upwards rather than down and expose developing bunches to more light and provides greater air movement helping to prevent disease.



Lyre trellis
Photo courtesy of Patrick Iland

Geneva Double Curtain Trellis

The Geneva Double Curtain (GDC) trellis system is a horizontally divided system developed in New York State. Shoots are vertically shoot positioned downwards to devigorate the shoots and are most common used in areas of high vigour.



Geneva Double Curtain Trellis

Image: from Viticulture Volume 2, Dry and Coombe.

Winter Pruning

Pruning is the removal of living shoots, canes and leaves. Spur and cane pruning are the most common types of pruning used in vineyards. Pruning is most commonly performed in the winter months when the vines are dormant. Pruning influences the form and size of the vine, the balance between vegetative and fruit growth and quantity and quality of the fruit produced.



Spur pruning

Cane pruning

Weed management

Weeds can be a big problem in vineyards as they can compete with the vines for water and nutrients. Vineyard managers use different practices to control the weeds that grow under-vine. The most commonly type of control are herbicides which are substances that are toxic to plants and are used to destroy unwanted vegetation. Cultivation and mowing are also used to control weeds under-vine.



Herbicide application

Under-vine cultivation

Pest and disease control

Pests and diseases can be controlled by a combination of good canopy management practices that promote light and air flow through the canopy and by the use of pesticides and fungicides. Often regular control programs are used for more common problems such as downy and powdery mildew. Practices are most commonly applied in spring when pests and diseases are most prevalent in the vineyard.



Spray application of fungicide to vineyard

Irrigation management

Irrigation is a common practice in many vineyards around the world; especially vineyards that have low to medium rainfall. When applying water to a vineyard we use different methods such sprinklers, drippers or flood irrigation. To maintain yields and fruit quality we monitor soil moisture content and/or vine water status to determine when to apply water. Water quality is also important as for example high levels of sodium and chloride can have negative effects on vine growth and fruit quality.



Soil monitoring in the vineyard

Shoot thinning

Shoot thinning can be an effective tool for controlling the spacing of shoots and reduce the density of the canopy. This is best done early in the season and shoots without bunches or damaged bunches can be removed.



Shoot thinning

Photo courtesy of Peter Dry

Shoot trimming

Shoot trimming depends on how vigorous the vine is and is used to improve fruit set and the microclimate of the vines.



Shoot Trimming

Leaf removal

Leaf removal is commonly applied around the bunch zone in cooler climates to improve fruit exposure; leading to improved fruit composition and reduced disease incidence. This practice is most commonly applied several weeks before veraison.



Leaf Removal

Photo courtesy of Peter Dry

Bunch thinning

Bunch thinning is performed after flowering and fruit set to remove bunches early in development that may be undersized or poorly-set in seasons when fruitfulness is high but the amount of vegetative growth is relative low and may not be able to ripen the fruit.

Bird Management

Bird damage can be a problem in many vineyards and a number of strategies are used to prevent them from damaging fruit in a vineyard. Chemical, visual, acoustic and physical barrier methods of prevention can be used; for example netting is used to keep birds out of a vineyard.



Application of bird netting being to a vineyard