

Vine Balance and Crop Estimating

If you consider a utopian vine for wine grapes it would be in perfect balance every season, yielding just the right amount of fully mature fruit to make great wine and enough canopy to provide the necessary leaves to drive metabolic functions and nothing in deficiency or excess. This, of course, rarely exists in reality except in some of the best terroirs.

Terroir is an important concept to vine balance because as wine growers we seek places that will manifest a balanced vine. The soil is well-drained enough to prevent too much vegetative growth but with also making enough available water and nutrients at the right time to maintain a healthy and productive vine. The climate offers just enough rainfall at the correct moment in the growth cycle to limit berry size and promote full ripening of the fruit. The correct selection of scion, clone and rootstock for the particular site allows the fruit to reach full maturity and promote balance in the vegetative and reproductive needs of the vine. Finally but not the least important, the viticulture inputs that you, the grower, have in the entire process of the planting and cultivation of the vine, from pruning to harvesting the grapes. All of these concepts and practices are directed at creating a vine of a particular size and balance. The better the site, the more these qualities are inherent. If a site is out of balance in some way then viticulture band-aids become necessary and it becomes a constant battle for balance. Vine balance is achieved well before a vine is ever planted. Very careful site evaluation is required to grow a plant that can produce wine of the intended style and price point the wine grower desires. Consider the concept of “quality” between wine growers in Napa Valley and the San Joaquin Valley. Both can grow excellent grapes but ultimately their wine style and vine balance requirements are different. For growers in cold climates, there is the added consideration of achieving vine balance to promote cold hardiness. It is well known that over cropping a vine can lead to winter injury.

Crop level can be one of the viticulture band-aids that can help push a vine into balance by diverting some vegetative vigor into fruit production. But crop is also one of the key components of quality in any given growing season. Along with proper canopy management, there may not be any viticulture practice that will influence fruit quality more than correct yield per vine. Too much crop can result in thin, diluted wines. Too little crop can push a grape variety out of its characteristic flavor profile (e.g. at 1 ton per acre Pinot Noir may taste more like Syrah). So getting the right balance of fruit to leaf area is a critical requirement in each growing season. This is very specific to particular soils and mesoclimates and is influenced by viticulture practices and choice of scion and rootstock.

Even in many of the greatest vineyards in the world crop thinning, or green harvest, is practiced. An experienced grower knows just by looking at a vine whether the crop is too heavy or light or just right. But for the grower with less experience a statistical method of crop estimating can be very important to accurate yield determination and adjustment. There are many systems to estimate yields. Among the worst are guessing from your truck or tractor seat, asking your neighbor what his yields are, or looking at historical state-wide crop data. Your vineyard is unique and crop loads will vary according the seasonal conditions and your viticulture practices. You should find a system that you are comfortable using, test it, and, if it is accurate, stick with

it. There is no right or wrong method, just the one that works for you on your site. If you are lucky and good at guessing, maybe that's good enough. A grower should begin by using balance pruning methods to adjust vine and crop size into balance. Balance pruning is one way of measuring the relative vigor of a vine and the size of crop it can support. Of course, vineyards and vines are very dynamic systems so these parameters are a moving target. But you want to try to be within the limits, not sticking to a single number.

In Oregon growing high quality Pinot Noir is a matter of achieving a delicate balance between crop size and vine size. At Temperance Hill Vineyard, early yield trials at 1, 2, 3 and 4 tons per acre were done to find out what the optimal yield was for each block for quality and productivity. Four ton wines were thin and unattractive. Three ton wines were definitely moving in the right direction. One ton wines were too fleshy and jammy (almost Syrah-like) but yields between 2-2.5 t/a were considered correct for the optimal balance between wine quality and grape quantity (no sense cheating yourself out of any grapes/wine by reducing yield to even a berry less than the acceptable quality threshold). Experiment at your own vineyard, on distinct vineyard sites, to determine the optimal yield according the style of wine you or your contracted wine maker wishes to produce.

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