

Vine Balance – What Does It Mean And Why It Is Important to You?

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Concept of Vine Balance

- Early research by Partridge (MI), Ravaz (France), Winkler (CA), and Shaulis (NY).
- The state in which grapevine vegetative and reproductive growth are in "balance." That is, the amount of fruit produced on a vine is appropriate to the amount of canopy it has.
- Defined and calculated as the ratio between yield and vine size (Crop Load). Often measured as the yield: pruning weight ratio.
- Value of 5-10 represents a vine that is in balance for vitis vinifera cultivars. The value may be higher for hybrid cultivars.

Consequences Of Vines Not In Balance

- Vines with yield : pruning weight ratio of 5-10 are generally in balance
- Vines with yield: pruning weigh ratio's less than 5-10 are under cropped, overly vigorous, have poor bud fruitfulness, reduced fruit set, lower yields, higher disease pressure, reduced fruit composition and poor winter hardiness. Improvements in canopy microclimate can be achieved by hedging and leaf removal, but this also increases production costs.
- Vines with yield: pruning weight ratio's greater than 5-10 are over cropped and do not have adequate leaf area to ripen fruit adequately. Fruit quality and winter hardiness can be reduced.

Vine Balance Tenets

- Vine size or vegetative growth (often measured by pruning weight) is influenced by site capacity, cultivar selection (both scion and rootstock), cultural practices, and environmental conditions during the growing season.
- Vine size (pruning weight) is the summation of shoot growth (and leaf area) over the growing season.
- Approximately 5-14 cm² of leaf area is required to ripen 1 g of fruit.
- Grapevines with large, medium, or small vine size can be in balance.
- Low crop level does not always equal high quality.
- Vines that are in balance produce the highest fruit quality.

Practical Indicators of Vine Balance

- Yield: pruning weight ratio (5-10)
- Pruning weight (0.2-0.4 lb./ft of canopy)
- Dormant Cane Weight (20-40 g/cane)
Pruning weight/shoot number = cane weight
- Leaf area: crop weight ratio. (A good indicator, but not too practical.)
