



**Timely Viticulture**

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"Timely Vit" is designed to give those in the Maryland grape industry a timely reminder on procedures or topics they should be considering in the vineyard.

# Balanced Pruning I - A Critical Step in Maintaining and Adjusting Vine Balance

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A major theme of viticulture is that for a vine to consistently produce high quality fruit it must be "in balance." That means that the amount of vegetative growth (shoots and leaves) is just right to properly ripen the reproductive growth (fruit load). Too little fruit may lead to an over-vigorous vine, shaded fruit and lower quality. Too much fruit may decrease vigor to a point where there is not enough photosynthetic area to properly ripen the crop leading to under-ripe fruit and reduced quality.

The first step in achieving proper vine balance is choosing the proper training system for that variety on that site. The next step to annually adjust and maintain that balance is through dormant pruning. Mature grapevines require annual pruning to remain productive and manageable. An average grapevine will have 200 to 1000 buds on mature canes capable of producing fruit. If all of the buds were retained it would result in the over-cropping scenario described above.

To avoid this situation, researchers have developed a method of pruning to balance the fruit productivity and vegetative growth that will give maximum yields without reducing vine vigor or wood maturity. This procedure is appropriately referred to as "Balanced Pruning," as the amount of pruning is based on the vigor of the vine.

Here are some of the specifics of proper balanced pruning:

- The way to quantify vigor is through vine size, which is determined by the weight of one-year-old cane pruning.
- To balance prune a grapevine and estimate the vine size, roughly prune the vine, leaving enough extra buds to provide a margin of error.
- Then weigh the one-year-old cane prunings (small spring scale) that you just cut off and apply the weight to the pruning formula to determine the number of buds to retain per vine.
  - For Concord vines, the pruning formula is 30+10, which means leave 30 buds for the first pound of prunings plus 10 buds for each additional pound. A vine with three pounds of prunings would require a total of 50 buds, 30 for the first pound plus 10 for each additional pound.
  - Here are some other variety examples and their "typical" bud count formula. Remember, each variety

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will behave differently in different environments, so these are meant to be suggestions and used as a starting point and adapted for the vigor of your site.

| Variety       | Formula |
|---------------|---------|
| Cab Sauv      | 20+20   |
| Cab Franc     | 20+20   |
| Chardonnay    | 20+20   |
| Riesling      | 20+20   |
| Seyval        | 5+10    |
| Vidal         | 15+10   |
| Other Hybrids | 20+10   |
| Concord       | 30+10   |
| Niagara       | 40+10   |

- To final prune that vine, continue to prune the spurs or canes until you have remaining the number of buds you calculated from the pruning weight formula for that vine.
- Remember we are ultimately looking for 3-5 shoots per linear foot of row during the growing season, depending on the cluster size of the specific variety. Future *Timely Viticulture* issues will address timing and other critical issues.
- The critical point is to balance your vine. You need to use you experience with site, variety and area of the vineyard. Try to look at and evaluate each vine individually.
  - If the variety and site is vigorous and the vine was overly vigorous last year, you need to leave longer canes or more spurs (more buds) to give more shoots and clusters this year which should help to balance the vines.
  - If the vine had less than desired vigor last year, you need to leave shorter canes or fewer spurs (fewer buds). Reduced number of shoots and clusters this year should help to increase the vigor of the vines.

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