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# Technical letter by Nick Goldschmidt - September 2024

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I write to you from the days before the 2024 harvest. I find that this moment in the year is worse than the actual harvest itself. The anticipation is more stressful than the main event.

My first vintage was in 1982 at Lincoln University in the South Island of New Zealand. They didn't even have a wine course at the time but of course today it is one of the more famous wine schools. 42 vintages x 2 means 84 vintages completed. I should be much older than I am. Scary is that I feel young for my age?

Since we last sent a letter in February things seem to be somewhat the same. For Goldschmidt Vineyards (GV) August was one of one of our biggest months in shipments period. We saw this in 2008 and 2018. Our wines are such great value we always win in a recession. I just wish when times were good, we did as well. "Badged wines" always make a comeback when times go back to normal, so this time let's keep it going 😊. It's important for big sales OND for us as these sales help pay the growers. All of them are small and rely on us paying them on time so please do your best to "over ship" for us. Haha!

I am always the eternal optimist. The industry is currently complaining how tough it is out there. I think that when it gets tough the opportunities that arise are amazing. For me grapes and wine are a labor of love. I love what I do, and I will persist even in the wake of bad news. That's the value function in several models of action: we are more likely to do things we value or love. Yes, we have a choice, but I choose to continue to do what I love - bringing great quality and value to you all. Thank you for being a friend of Goldschmidt wines and enjoy my technical update once again!

**An update on the 2024 harvest taken one per week. Youngest video first**

1. 10/8/2024

   https://www.youtube.com/watch?v=oCs1d5u3AfE&t=1s

2. 9/20/2024

   https://www.youtube.com/watch?v=e4dhwkWeVOM&t=39s

3. 9/10/24

https://www.youtube.com/watch?v=uNAJed0-3mI&t=9s

4. The reason wine grape prices will not fall – 100% dumping

   https://www.youtube.com/@goldschmidtvineyards7183/search?query=2024%20harvest

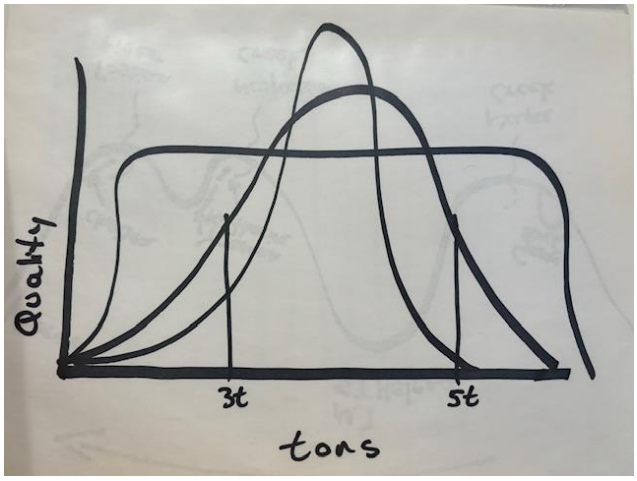
**In this Technical Letter I will focus on Yield and its misconceptions**. Folks tend to ask me what our yields are, and I just say 3t as that's what everybody thinks is the right answer.

# Yield v Quality

What's the deal with yields? Or terms like "crop load," or "vine balance?" What does it mean to "green harvest" or to "restrict yields?" Why would one do that? Is 3t/acre better than 6t/a? How is wine character changed by adjusting to different crop levels?

Here is the chart that says it all. You can under crop a vineyard as easily as over crop. You just need to know what the vineyard can do. Changing the crop load in a heavier soil has less effect on changing the quality. On a thinner soil a change in load can have a dramatic effect on Quality. Ultimatum, Yeoman and Game Ranch show exactly this.

Details below and, yes, I was ruthless in trying to keep this short …




## General Fruit Thinning

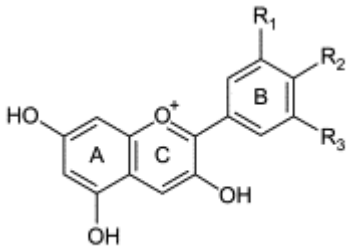
Fruit thinning is one of the most mysterious viticultural practices. It involves habit, compulsion, penance and fear that has very little to do with farming but everything to do with wine. Fruit thinning is extremely emotional, and science often has very little to do with this incredibly costly and often wasteful practice.

As a farmer and a vineyard consultant I've struggled to understand the process of fruit ripening, and how the ripening is affected by different amounts of fruit. I believe there is an impact on

quality, but economics is a huge factor. The loss of one cluster left on the vine is scary but that cluster is only worth what you can sell it for, and if that thinned fruit cannot go into the bottle of wine, it is worthless; it is, in fact, a negative as it will decrease the value of the complete wine.

Fruit thinning as a standard quality vineyard practice is a recent phenomenon. The practice of fruit thinning originally evolved in high-end estates in cooler growing regions. Like we always did in Marlborough NZ, but due to botrytis usually. The basic principle with fruit thinning is that with less fruit on the vine, the rate of sugar accumulation is increased in the fruit that remains. Leaves make sugar through photosynthesis, and the vine transports that sugar to the fruit, where the sugar slowly increases in concentration during the ripening period. clusters.

Earlier anthocyanin production can result in more color in the fruit at harvest. Anthocyanins complex with tannins in the wine, softening the mouthfeel and enhancing mid-palate concentration. Other ripening parameters are almost certainly enhanced; anthocyanins are just easier to measure, so that is why they are so often studied. Anthocyanins are purple but when they complex they move to red.




**Basic chemical structure of anthocyanins**

For a modern, dark, concentrated wine style, early fruit thinning at levels that are sugar low, has a big effect on alcohol levels, but it can have a slight effect on other aspects of wine style too. If you think about the shift in style in Bordeaux (or Napa Valley) from the '80s to the present, higher alcohol, blacker color, and darker fruit character have become routine. Global warming can be blamed but I can make the argument the fruit thinning does the same.

For an effect on wine flavor—physiologically pushing the fruit into a riper spectrum—fruit thinning must be done very early, well before veraison. The process is ideally conducted by seed hardening, which occurs halfway between bloom and veraison, and signals the beginning of ripening which starts well before color change. If done later in the season it will increase sugar accumulation in the remaining fruit, but in my experience, it won't change the fruit character much. A loose rule of thumb for fruit thinning is that every week after seed hardening 10% more fruit needs to be thinned to get the same result. **This is a lot of fruit and generally winemakers fruit thin well after this. Completed around 90% Veraison**


# Color Thinning

This is simply a sorting process, and it has no impact on the way the remaining fruit ripens. At veraison, fruit color change is not uniform; instead, the berries and clusters darken one at a time, over a period of time. It's standard practice these days in high end vineyards to try and create more uniformity by thinning off the lagging green clusters at the tail end of veraison. Getting rid of the less ripe fruit is now standard and is another way we have effected style making the wines less green or even less Cabernet like?

Reposts say that if you harvest at 26 Brix then thinning is irrelevant. Most wineries in Napa pick over this number anyway. However I think once over 25 Brix even, you have removed terroir. Waiting for 26 Brix may have been an issue in cool vintages like 2010 and 2011

**To summarize: color thinning eliminates some green character and lowers acidity for an earlier harvest date in cool climates but doesn't have a whole lot of impact if the fruit is given a long extended hang time in a warm climate.**

# Do Lower Yields Always Produce Higher Quality Wines?

The assumption that vineyard yield and wine quality are inversely related is deeply ingrained. No one would argue that yield and quality are related but my experiences show how complex the

subject is and how misleading generalizations are, such as lower yields, old vines and non-irrigated vineyards produce better wine. The highest quality wines of Bordeaux and Burgundy have come from the highest yielding vintages and the worst wines have come from the lowest yielding vintages. The famous California Cabernet Sauvignon that won the 1976 blind tasting in Paris was produced from the vineyard's first crop. As vines weaken from old age, yields drop but the quality is not necessarily better. And irrigation (rain in Bordeaux and Burgundy), by reducing vine stress, is indispensable to what are acknowledged to be some of the world's great wines.

# Pruning (# shoots/vine)

Pruning establishes the number of buds retained per vine. Buds produce shoots on which the clusters are born, so the greater the number of buds per vine, the greater the potential yield. The actual yield will depend on flowering, berry set, crop thinning and other techniques. Since shoots produce leaves, pruning determines the vine's leaf area and so the vine's ability to produce sugar— aroma, tannin and color compounds essential to wine quality.

Proper pruning will create a balance between the vine's leaf area and the number of clusters. If leaf area and crop level are not balanced, the vine is either under cropped or overcropped.

# Bud Fruitfulness (# clusters/vine)

The buds that are retained at pruning will produce shoots with more or less clusters depending on the amount of direct sunlight and heat the buds received during the previous spring. During that time, the microscopic grape clusters—flower clusters at this point—are being formed in the minute, developing bud. High temperatures and abundant direct sunlight—normal conditions in California—favor clusters and higher yields. Lower temperatures and cloud cover—more common to Bordeaux and Burgundy—diminish fruitfulness and yields. Light on the bud effects fruitfulness int eh following year

I remember when I was at Simi in 1995 we had a very poor Spring. Cloudy and low light. The vintage was great, but it certainly affected the yield in 1996. 1996 itself though was great with good light and as a result I remember only too well running out of tanks in 1997.

## Flowering (potential # berries/cluster)

Flowering or bloom occurs in April or May in California and June in Bordeaux and Burgundy. The flower cluster (which becomes the grape cluster after fruit set) contains up to 1,000 flowers. Bloom is the opening of the flowers in the spring following budbreak. Sections of a vineyard will bloom earlier where the soil warms more rapidly due to more favorable sun exposure. Cooler weather delays flowering and can be detrimental to quality by allowing flowering to take place over a longer period.

## Fruit Set (actual # berries/cluster)

Fruit set occurs when a pollen grain fertilizes an individual flower, and the grape berry starts to grow. Only 20-30% of the flowers on a cluster set, the exact percentage determines the berries per cluster. Set is delayed by excessively low or high temperatures (water stress), rain or high humidity. Poor berry set not only decreases yield but affects quality by preventing uniform ripeness within a cluster at harvest.

This lack of understanding has taken hold because talking about low yields sells wine. Growers like to talk to the press about low yields who in turn like to hear things like this. The wine writers all know how to taste wine, but when they get into technique, they don’t know enough about it. To look at the vineyard, your eyes must be trained. I can look at a vineyard and predict yield but it has taken me years to learn.

I want to mention Biodynamic and “natural wine” producers. There is a move away from fruit thinning. Some of the Biodynamic producers believe that it interrupts the vines’ natural ripening process or “rhythm”, while some of the natural winemakers and other traditional or “old school” producers think that the mix of less ripe fruit with the riper fruit is an important part of the wine balance and longevity.

There is a point of diminishing returns with fruit thinning. The difference between 2.5 tons per acre and 3.5 tons per acre in the Napa Valley, where the vines could easily ripen 5 tons per acre to conventional standards of sugar and acid, is probably nil. Yet people insist on thinning to an extreme that makes no sense. High-end winemakers thin fruit to a level that has no scientific grounding.

# Green Crop Thinning & Overcropping

When a vine is carrying more fruit than it can ripen, it is overcropped. Green harvesting or crop thinning is the removal of excess grape clusters to ensure that those remaining clusters will fully ripen. Growers usually err on the side of leaving more crop on the vine. If excess crop is realized through good fruitfulness, flowering and set, it can be reduced

Green harvesting is a controversial issue, not only as to whether it should be done, but when it should be done. Grapevines compensate for fewer clusters by producing larger berries. My comment on this is that it is done if too many mistakes have been made. Wrong rootstock, wrong clone, too much fertilizer and wrong pruning means too much crop.

Overcropping dilutes flavor intensity, and the consequences extend to the following year. Excess crop exhausts the vine by depleting its stored energy reserves causing sluggish growth the following spring leading to reduced fruitfulness, excessive vegetative growth, shading of clusters and delayed maturity.

Conversely, an under cropped vine will have equally detrimental effects on quality. Excess foliage covers fruit and clusters deep inside the canopy are definitely greener to the ones on the outside. When a vine is in balance, further reducing yields. Herbal or vegetal flavors such as asparagus or bell pepper come from sunlight sensitive compounds called pyrazines and are in

from the skin of Cabernet, Merlot, Cabernet Franc and Sauvignon Blanc. High levels of pyrazines are found in fruit that has been shaded by excessive foliage. Growers pull leaves and position shoots to improve the light environment around the clusters. A high leaf to fruit ratio, while good for ripening, is bad for the flavor.

**Somewhere between overcropping and undercropping the vine is in balance, a balance between foliage (canopy, leaf surface area, shoot length) and the number of clusters. This balance creates more fruit in some sites and less fruit in other sites, meaning that yield cannot be talked about without discussing a specific growing region and site.**