

The *Terroir* of Van Duzer Vineyards:

Definition of “*terroir*”: Terroir has become a much abused and overused word since its introduction to the non-French speaking world of viticulture and winemaking. Originally from the phrase “gout de terroir” meaning “taste of the earth”, the word terroir has gone from encompassing soil characteristics and supposed flavors imparted to the wines, to a very broad description of all of the parameters of a specific area that go into growing grapes and the resulting flavors or style imparted into the wines produced from that area.

Every vineyard has its’ own set of parameters dictating its’ terroir, at Van Duzer we feel that the following influences, listed in order of importance, are:

- a) Microclimate
- b) Geographic position
- c) Viticultural practices
- d) Winemaking
- e) Soil

To some degree, all of these influences are intertwined and inseparable as one factor influences the others. However, all of these factors are most heavily influenced by climate and our interaction with the vineyard and winemaking.

In order to further discuss the factors listed above, we need to describe and identify what *is* the Van Duzer expression of terroir. At Van Duzer, with our minimalist intervention winemaking, terroir easily translates into our “style”. All of the wines made at Van Duzer, regardless of varietal, exhibit one common theme, bright fresh fruit. In the Pinot Gris there is ripe melon, peach, fig, citrus and starfruit. These flavors and aromas are fully ripe examples of the fruit without any cooked or jammy character. In the Pinot Noir the flavors and aromas are of fresh strawberries, red and black cherries, raspberries and blackberries. Again, these are examples of fresh, ripe fruit without the jammy “pie filling” character.

Microclimate

The most critical factor regarding this expression of the Van Duzer terroir is our microclimate. Located where we are, in the mouth of the Van Duzer Corridor, the vineyards experience a dramatic maritime cooling phenomenon. As the Willamette Valley heats up during the day, the warm air rises and pulls in cool air from the Pacific Ocean through the Van Duzer Corridor. This results in our vineyards experiencing a steep drop in temperature at night from the mildly warm daytime temperatures. This diurnal temperature swing is what helps the grapes retain its bright fresh fruit character. Extended daytime highs lead to several problems; breakdown of acids, excessive sugar, slowing or stoppage of plant metabolism and dehydration. These conditions can yield wines that are green and tannic and show high alcohols. Excessive night time heat (+ 61°F) will also breakdown acids resulting in wines that are flabby or soapy due to high pH’s. The average weather data for the last 6 vintages at Van Duzer Vineyards is shown in Table 1.

From the data it can be seen that the average temperatures are on the low side but the overall accumulated heat units are in the upper optimal levels for Pinot Noir. This apparent contradiction highlights the degree of change between daytime temperatures and nighttime temperatures.

Table 1: Van Duzer Vineyards Growing Season Weather Data

	<u>Avg. Daily Temp</u>	<u>Avg. Min Temp</u>	<u>Avg. Max Temp</u>	<u>Days > 93 F</u>	<u>Heat Units</u>	<u>Total Precip</u>
1998	60.28	46.63	76.58	13	2973	15.47
1999	58.54	43.53	76.56	13	2878	12.58
2000	60.42	46.23	76.24	7	2944	11.59
2001	58.78	45.17	72.73	3	2553	11.51
2002	58.82	46.02	71.68	4	2477	7.34
2003	60.37	47.87	73.45	8	2691	10.81

Geographic Location

The second factor, geographic location, works hand-in-hand with temperature. Photosynthesis, the major metabolic process in grape vines, relies most importantly on two things; the appropriate temperature range (60-93 F) and sunlight. Without sunlight sugar and desirable flavor components would not develop. Van Duzer Vineyards, located 0.014 degrees south of the 45th parallel, has longer daylight during the growing season than similar climate areas to the south. This is equivalent to an extra two weeks of September “hang time” compared to the Napa Valley. Since flavor development occurs at a different rate and under different conditions than sugar accumulation (light vs. heat), there are more clearly defined fruit characters and optimal acid retention in the grapes at Van Duzer.

Viticulture Practices

While the popular perception of the winegrowing industry is one of “natural” basis, grape growing in general is about as natural as the Japanese art of Bonsai. We are forcing our will as winegrowers on an environment that “naturally” would like to do something different. Every year we prune back the vines, artificially control the crop level, remove vegetation from the fruit zone, cut back growing canes to focus more attention on the fruit, make nutrient additions via the soil or the leaves (true for conventional, organic or biodynamic practices), spray the vines with preparations to inhibit mildew and mold (also true for conventional, organic or biodynamic practices) and try to prevent wildlife from consuming the grapes (preventing dissemination of seeds) so we can reap the benefits for ourselves. Viticulture, since the days of hunter and gatherers, is one of the most human intrusive agricultural practices. So the question becomes: Do we work with nature or against it?

At Van Duzer we try to enhance what nature gives us. In order to work with or maximize our terroir of bright fresh fruit character we stress a physiologically balanced vine and plan our farming practices around this idea. This concept envelops the wholistic view of the vineyard as an entire entity that thrives over time. The idea is that we need to have the

right balance of fruit, leaves and roots in an environment that promotes healthy grapes and vines to not only produce high quality fruit for the current vintage but for all future vintages. In order to accomplish this, experimentation in the vineyard has been a key factor in all of our vineyard practices. We have discovered that a yield of ~5 pounds of grapes per vine is the optimal level for our site. At this level physiological ripeness coincides with appropriate grape chemistry to produce balanced and elegant wines yet still allows for the vine to manufacture sufficient carbohydrates to store in the roots for the next years harvest. Too low of a crop level affects the health of the vines over time stunting growth or producing irregular in the following years. Low crop level also tends to yield grapes of over-ripe character and low acids. Another practice we have discovered is to use slightly wider spacing between rows, allowing more leaf surface for photosynthesis as well as preventing the vines from shading each other, therefore maximizing bright fruit flavors.

Water is another factor that heavily influences the final flavor of grapes and wine. In the Willamette Valley, we are often in drought conditions July through October and excessive water in the winter and spring. As a result of our experimentation with cover crops we have discovered that by leaving the cover crop in longer and drying the soil out earlier in the summer, veraison is triggered up to two weeks earlier than “normal”. Add to this our ability to irrigate and maintain a modest water deficit through the drought period, we can slow down sugar accumulation and increase flavor development, producing grapes that more dramatically reflect out terroir.

There are many other vineyard practices that enhance terroir, more than could be appropriately included here. These are just a few examples of how we can influence the expression of terroir. The other point of major intervention and impact on terroir is the winemaking practices. Depending on the goals and desired style of the winery, terroir may be completely subdued or overly exaggerated.

Winemaking

Regardless of how minimalist a winery perceives themselves to be, all winemaking involves direction by a person or persons. *The natural end point of grapes is not wine, it's bird droppings.* Because terroir is expressed in wine, not grapes, it is important to understand the impact of the winemaking process. Just because a wine expresses terroir does not automatically make it taste good. The winemaking style must balance itself with the terroir to make a truly great wine. A true “*terroirist*” would have you believe that Pinot Noir fermented in stainless steel with indigenous yeasts and then aged in those same tanks before being bottled would be superior to wines that have been more traditionally made. This apparently is not true except in the case of Nouveau style wines. Appropriate guidance is required to bring out the best nuances a wine can provide. On the other hand, heavy maceration, high levels of new oak and over processing can obliterate any sense of terroir.

The winemaking at Van Duzer is focused on making a balanced, elegant wine while still preserving our terroir of bright fresh fruit. Commercially produced yeast is used for the fermentation, selected for it's ability to enhance the fruit character rather than masking it

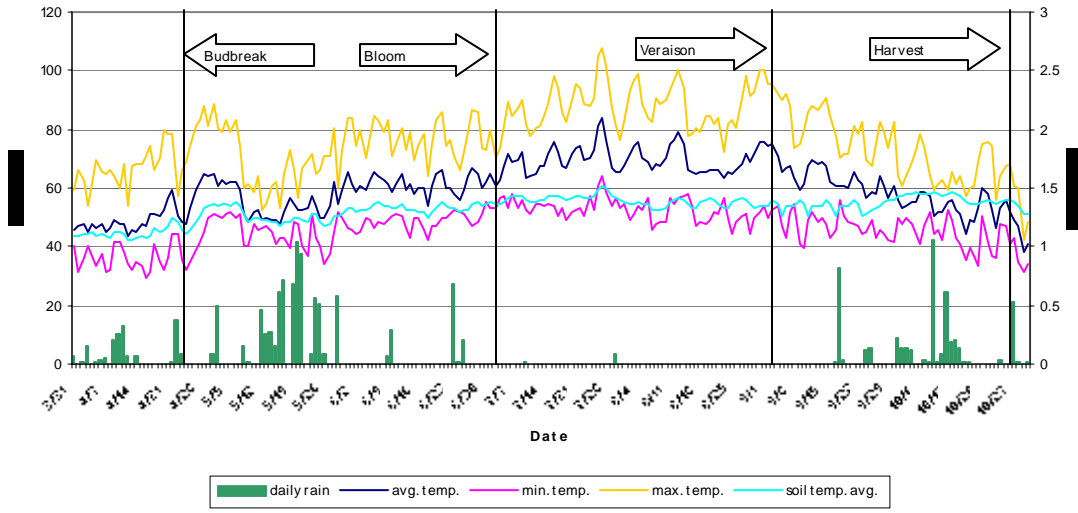
or artificially adding to it. Barrels are chosen to provide middle structure in the palate and a touch of spice to lift out and counterpoint the fresh quality. Cool, closed fermentations are used to prevent loss of grape and wine esters that make up our expression of the Van Duzer terroir. So while we consider ourselves minimalist in processing, we still control the processing and make it go in the direction we wish.

The Soil

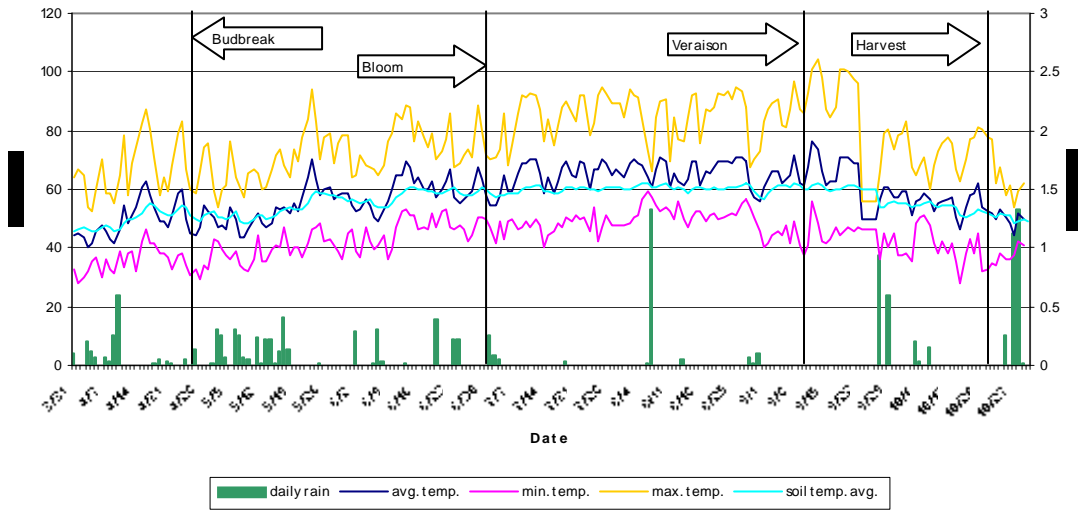
Soil has proven to be one of the least important factors in the expression of terroir. With the introduction of new disease resistant rootstocks with various growing traits, the invention of chemical soil amendments, the new technology of foliar fertilizer technology and the introduction of newly available clone material, almost any soil in an area with the right climate can grow good grapes. Soil has become more or less a medium to hold the vine up. Irrigation now makes up for water deficit, cover crops and tiling remove excess water, and, when needed, nutrients can be applied to the vine in spray form. The old belief that the wine or grapes will taste of the minerals found in the soil has not been proven true. The grapevine root system is very selective in what it will pick up and acts as a molecular/ion grade filter.

The important thing about soil is that it holds water and nutrients for the vine to use when appropriate and that it be disease and pest free. A healthy living soil will provide nutrients to the vine as well as retain moisture so that as the vine develops a need for a certain nutrient it is available at that moment, not several days later when the fertilizer application is scheduled.

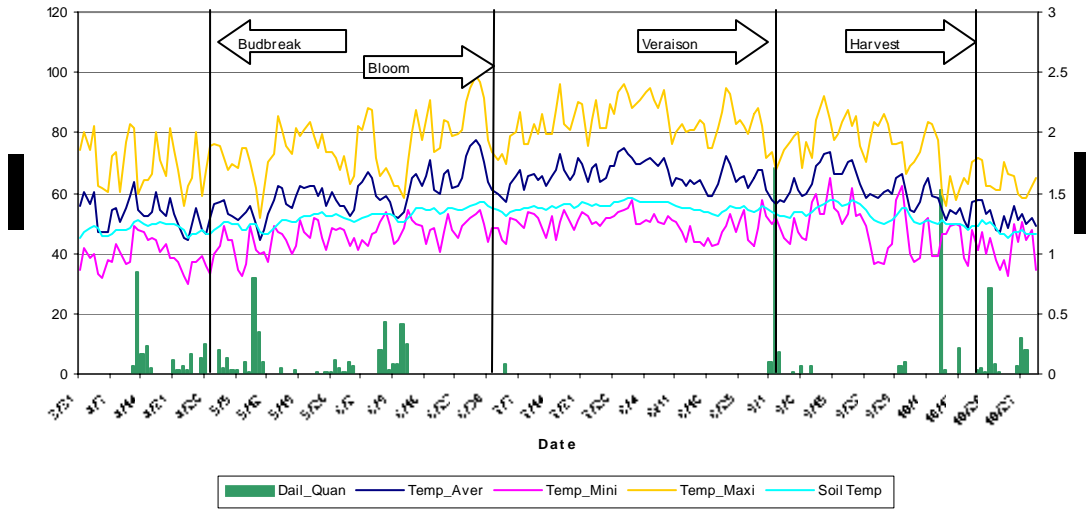
Temperature and Rainfall 1998 (3/31 - 10/30)



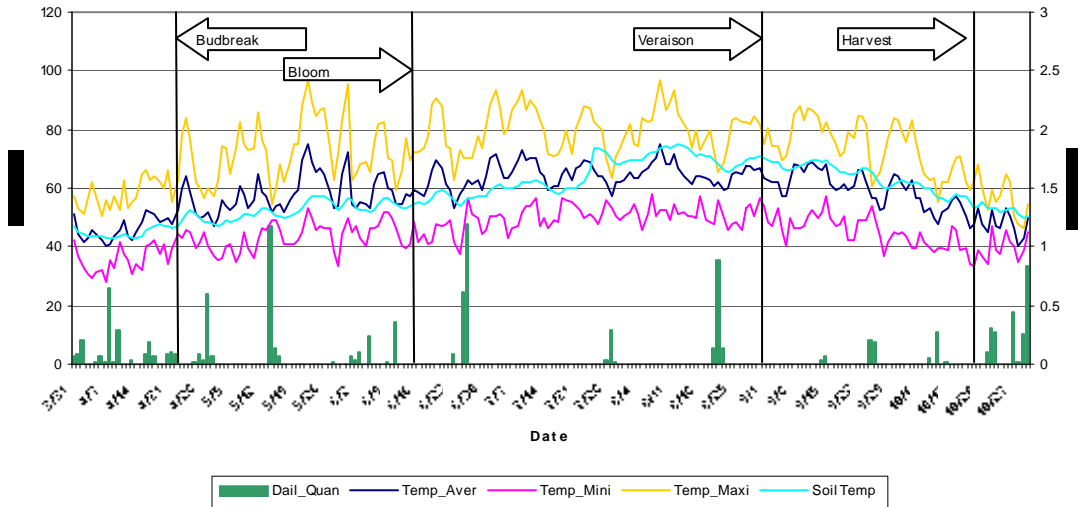
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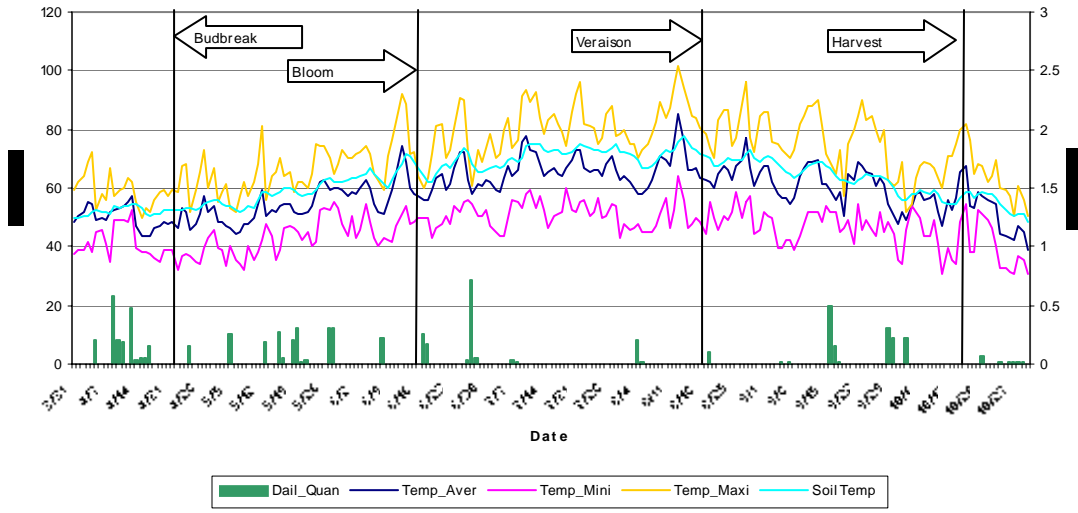
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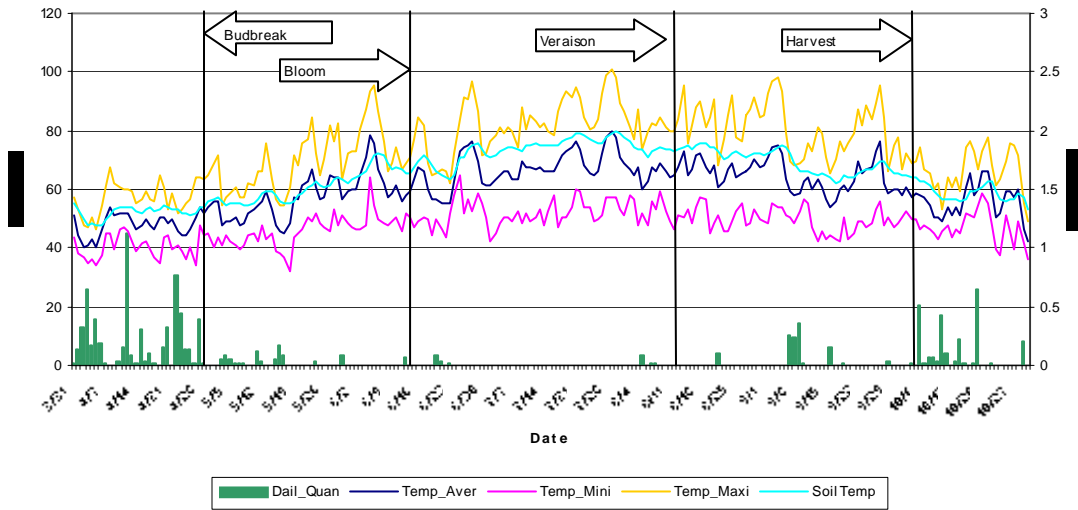
Temperature and Rainfall 2001 (3/31 - 10/31)



Temperature and Rainfall 2002 (3/31-10/31)



Temperature and Rainfall 2003 (3/31-10/31)



Growing Degree Days (1998 - 2003)

