Grapes: What's the dirt? *(Number 55 in a series of opinionated articles about grapes and wine in Fair Play)*

By John Smith

Agriculture begins in the soil, and that material has as much to do with grape and wine quality as any other single factor. Grapes are grown in areas of the world where little else would survive, and there is a saying in parts of France "If it were not for the vine, we would starve." There is a strange inverted relationship between soil quality and the grapes that come from it — some of it is direct, some quite indirect.

"40 Acres of River Bottom"

For many crops, healthy, rich soil is essential, and I can remember many decades ago taking "Sunday drives" past freshly plowed, heavy black Midwestern soils and hearing the grownups in the car exclaim "Look at that dirt!" For grain or vegetables planted in rows, the richness of the soil determines not only the amount produced each year, but also its quality. Wine grapes, however, do not respond the same way. Beginning grape growers are often drawn to this area because it has unusually rich and deep (for the foothills, at least) soils, with the expectation born of farming in other areas. Experienced winemakers (and really savvy growers) have come to realize that vigor of the plant is not the same thing as fruit quality, and in many cases, they are opposite. One winemaker from a very high-end winery at the top of the Napa Valley once flew his own plane to our area to look for additional vineyard land — he'd heard that we grew some very fine grapes. One look at the local vines, however, and he proclaimed "Too much vigor," got into his plane and never came back.

Old and Olderer

Visitors to our winery have the opportunity to look out the front door of the tasting room at the six-inch diameter trunks of our cabernet sauvignon vines (okay, it's more than an opportunity, we set it up so it's almost impossible to avoid seeing the vines as they walk to the front door), and all are amazed by what appear to be Methuselah vines of a truly ancient vintage. They're equally amazed to learn that the vines were only planted in 1981, and most don't realize what factors account for the amazing rate of growth. We sit on top of about 10 feet of decomposed granite soil (more about this later) and the vines are an extremely vigorous clone of cabernet sauvignon grafted onto one of the most "invigorating" rootstocks named AxR1. Add to this that the vines are at the bottom of a long hill where much of the irrigation water applied to the top and sides moves as subsurface flows to the last few rows of vines, and you have ideal conditions for vine growth. Does this mean that these vines can deliver prodigious quantities of grapes each fall? You bet! But does it mean that the seven or so tons the lowest acre produced each year were of really good quality for winemaking? Not a chance!

Until we initiated draconian measures to curb the vines' sprawl, we would often see shoots grow to 20 or 25 feet during a season, and most of this growth was completely wasted. It only takes 20-25 leaves on a shoot to ripen the normal two clusters of grapes that form, and any growth in excess of this is of no use to the fruit. When we completely

stopped watering the lowest eight rows of the vineyard, the fruit quality improved to match the best areas at the very top, where water is equally scarce.

A Light Dusting of Soil

In many other foothill communities, once the gold panned out during the late 1850s, prospectors left in droves for better "diggins" (in fact, quite of few of them migrated to *another* Fair Play in Colorado where a second bonanza was discovered about ten years after California's). In our area, though, the soil was deep and rich enough to support traditional farming, and the sluices that had been developed for mining could be redirected to bring precious water to the croplands. The picture below was lent to us by the local Frey/Murphy/Scott lineage that dates back to the gold rush days, and shows grain being threshed in 1913 — a real testament to the productivity of the land.

This meant that, instead of deserting the land around Fair Play, people could eke out a living by farming, and the area has been continuously inhabited (and farmed) since the forty-niners arrived.

The General Has Spoken

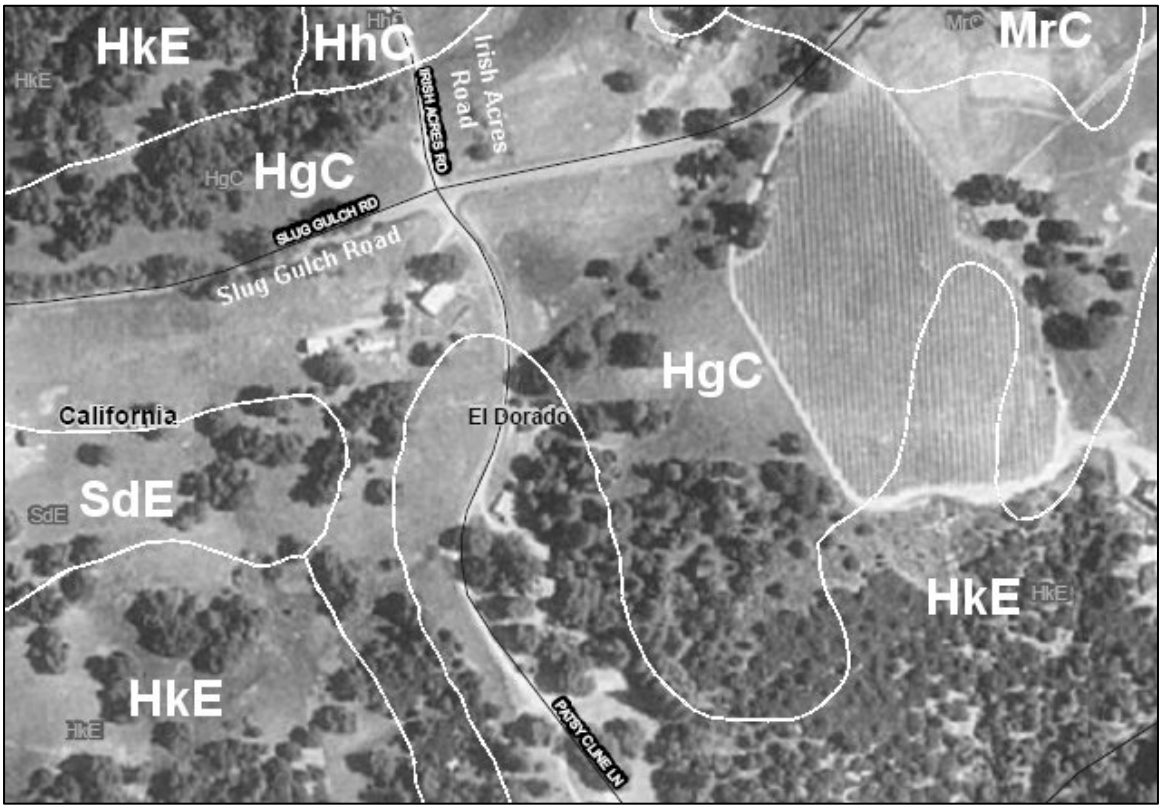
Much of the land in our area may be good for grain, good even for most crops, but may not be ideally suited for wine grape production. The General Plan of El Dorado County has created "Agricultural Districts" where the soils are particularly good (you can see how these soils are distributed on a map attached to the General Plan at *http://www.co.el-dorado.ca.us/planning/GeneralPlanAdopted.html*, figure AF-2). The criteria for land to be placed in an "ag district" include "Soils identified as El Dorado County 'choice' agricultural soil, which consist of Federally designated prime, State designated unique or important, or County designated locally important soils." Now, this makes good sense in areas of the county where water arrives through a large pipe, but south of the North Fork

of the Cosumnes River, the El Dorado Irrigation District is absent and all our water, for drinking or for irrigation, needs to be pumped out of the ground.

If our unusually deep soils were combined with the comparatively unlimited water provided by an irrigation district, it would be possible to grow all manner of tree fruit here and reap the full benefits of the area's potential. The amount of water a plant needs is heavily related to its leaf area, and vines have many fewer leaves than trees, so they are well suited to production where water is limited. In addition, while grapes grow in abundance where the soil is rich, they make the best wine when the soil is relatively poor, thereby introducing the constant struggle between growers, who would like the largest possible crop to allow making a living, and winemakers, who want the smallest possible crop to increase concentration and depth of flavors in the wine. Reducing the crop to two tons of grapes per acre can make wine that tastes twice as good, but it's much harder to get the public to pay twice as much for the wine to allow the winery to pay the grower twice as much, so like everything else, compromise is required.

What's Your Dirt?

In the (pre-Internet) past, the only way to get a soil map was to visit your county agriculture department, where they would copy your area from large soil map books stored there and provide a listing of the arcane abbreviations used for soil types. The Natural Resources Conservation Service (U. S. Department of Agricture) now has our entire area (and much of the country) mapped on an interactive website called the Web Soil Survey (*http://websoilsurvey.nrcs.usda.gov/app/*). You'll have to invest a little time learning the interface to locate your "Area of Interest," then zoom and pan to find the land you want to map, but it even allows you to make a printable map with the soil symbols decoded on separate sheets. Our 54 acres are shown below (the original vineyard is the mitten-shaped area on the right) and alternate primarily between HgC (Holland coarse sandy loam) and HkE (Holland very rocky coarse sandy loam). The legends and boundaries appear in orange on the website, but were redrawn here in white for clarity. Other common soil series in our area are also shown: MrC for Musick sandy loam and SdE for Shaver very rocky coarse sandy loam.



While the HgC soil is well suited to grape production, HkE soil provides some interesting challenges. Our most recent vineyard planting was entirely on HkE land, and after removing dozens of car-sized rocks like the one below, standing just about at the “k” in the upper left legend of HkE on the map, we felt compelled to name the new vineyard “*piedras grandés”* (“big rocks”).