

Pinot Noir Clones in Oregon - A History

By Jason Lett

Part One:

Plant a grape seed and the result will be a plant that looks, acts, and tastes very different from its parents. That's because after pollination the seed-to-be does the equivalent of putting on some mellow music and running it's genes through a cocktail shaker.

For winegrowers, looking for a way to plant a whole patch of the same vine, there was only one solution. Hundreds of years ago, humans took a cue from the vines themselves and started cloning grapes.

A clone is a separate organism genetically identical to its predecessor. Early grape growers noticed that vine shoots that touched the ground started to sprout roots instead of leaves. Even a short section of stick shoved into well-tended ground will start to grow – the vine has been propagated directly from the mother plant, without the genetic cocktail shaker scrambling things up. The plant that results is called clone, and it has the same growth habit, flavors, and ripening time as the vine it came from.

Clonal selection is especially important in Pinot noir. While site and management have the greatest effects on wine quality, the selection of Pinot clones which go into a vineyard's planting can have a tremendous influence on the flavor profile of the wine from that site.

Most of commercially available Pinot clones in the US are official selections which have gone through the rigorous, university-sponsored process of virus clean up and winemaking trials.

When the American wine renaissance began in the early 1960s, there was only one non-virused, university-certified clone of Pinot noir available – the Wadenswil clone. It had been brought to the University of Davis by Dr. Harold Olmo from the Swiss Federal Research Station for Fruit Growing, Viticulture and Horticulture in the town of Wadenswil, outside Zurich.

As with all Pinot clones, the original source of the Wadenswil clone was Burgundy. Pinot was brought to Switzerland in the 17th century, probably by mercenary soldiers fighting the religious wars of the time. The selections that Olmo obtained were made in the mid 20th century. All clones were selected for disease resistance, open clusters and wine quality. The fact that the Wadenswil clone continues to top Oregon winemaker tasting panels (when OSU has the resources to offer clonal wine trials) shows that the Swiss developers knew what they were doing.

David Lett brought the Wadenswil clone with him when he came to Oregon in January 1965. At the time, Wadenswil was the only certified clone of Pinot noir available. It has, with time, also proven to be one of the best. Lett's Eyrie Vineyards 1975 South Block Reserve, which won international acclaim for Oregon Pinot noir, was made solely from the Wadenswil clone. Spicy, floral, and bright-flavored, Wadenswil clone continues to contribute greatly to Oregon's stature as a Pinot region.

As more winegrowers settled in the area and began looking for sources of vines to plant their vineyards, growers began to think about the influence of clones on Pinot flavors. David Adelsheim recalls a party in the early 1970's when the handful of Oregon growers met for a tasting in Charles and Shirley Coury's living room. The tasting focused on different clones. Someone had brought a bottle made from a Pinot clone recently released as clone number 5 by UC Davis, called Pommard. It made quite an impression; the Pommard clone offered deep, full bodied flavors complementary to Wadenswil's resonant high tones. Dick Erath and Charles Coury had started a vine nursery which stocked some of the new clone, and growers expanding existing plantings and making new ones bought UCD 5 Pommard from them.

A year or two later, Coury struck out on his own. Many of the vines Coury sold as Pommard have, in fact, a distinct character of their own. The vines show a variety of growth habits in the vineyard (indicating more than one “mother plant,” unlike true Pommard) and the wines have tea-like, spicy flavors. No one is quite sure where he got the material. Some suspect that Coury brought illegal cuttings into the state in his suitcase when he came back from Europe in the 1960’s. Others think that the vines are a mixture of true Pommard and an old California selection called Martini clone. Whatever their history, the vines he sold as Pommard have since become known as “Coury Clone,” and have assumed a supporting role in Oregon’s clonal history

Part Two:

In the early 1970’s, Oregon growers had 3 clones of Pinot noir available to them from the University of California at Davis’ Foundation Block: Wadenswil 2A, Pommard 5, and FPS 18-21. (Which Davis had incorrectly called “Gamay noir”) In addition, there were so called “suitcase” (illegally imported) clones such as the Coury clone.

There were clear flavor and aroma differences in wines made from the limited clones available. Furthermore, blends of different Pinot clones offered increased depth and complexity in the final wine. With only two major clones, Pommard and Wadenswil, Oregon was already making wonderful wines. Growers began to wonder if a greater range of available clones, tailored to winemaking style and vineyard microsite, could further increase the quality of Oregon Pinot .

European universities had already done most of the work in selecting high quality, disease-free clones. But how to get them to Oregon? The only two universities in the US which had USDA importation permits were in New York and California, and neither was enthusiastic about helping.

In 1974, Oregon growers took matters in hand and secured an importation permit from the USDA so that material could be sent straight to Oregon State University from Europe.

Throughout the 70’s, Oregon growers (led by David Adelsheim) and researchers lobbied several European institutions to send OSU some of their material. While this resulted in getting good clones of Alsatian varieties, the quality of the Pinot noir clones OSU received was low.

Oregon’s search for more good Pinot clones came to fruition in 1980’s. Dr. Raymond Bernard, the regional director of the Office National Interprofessionnel des Vins (ONIVINS) in Dijon, France, had taken an interest in Oregon’s quest. In fact, Bernard had been helpful to Oregon winegrowing from its inception, having spent time with David Lett in 1964. The contacts established were renewed by successive visits of Oregon producers and researchers eager to visit and learn from the Burgundians.

In 1984, Dr. Bernard came to Oregon to give a presentation at the International Symposium on Cool Climate Viticulture and Enology. His topic was the performance of different Pinot clones in Burgundy and their potential performance in other cool climates. He also brought with him clones which had been developed in France. Though some were high-yielding sparkling wine clones of Pinot noir, among the rest were Pinot clones 113, 114, and 115. In 1988, Bernard sent several more excellent clones, including Pinot noir 667 and 777, as well as clones 76 and 95 of Chardonnay. Together these became known as the Dijon clones.

Dr. Bernard’s donation of Dijon clones to OSU has become one of the most important influences on Oregon (and New World) Pinot noir production in the last 20 years. Together they represent a remarkably generous gift. The Burgundians had nothing to gain from presenting us with the results of decades of work. Indeed, had they been viewing us as competitors, they would have sent us inferior clones.

Why then were the French so generous? Dr. Steve Price, an OSU researcher who worked with the Dijon material from 1984 on, has some ideas. First of all, Dr. Bernard was “...a great guy, a very nice man.” And Oregon had worked to earn international respect. Oregon growers and researchers established early personal and official ties with France. Oregon imposed strict labeling laws forbidding the use of generic, geographically derived names like “burgundy” and “chablis,” as well as requiring that wines labeled by variety were not blends in disguise. The French apparently liked our

integrity. And our initial luck with the the Pommard and Wadenswil clones led to wine that could be taken seriously on the world stage. Dr. Price points out that, had we started with poor clones, Oregon Pinot noir would have had much different history. He adds, “We already made good wines. The new clones added weight and variety and diversity. They gave what was a strong industry more strength.”

Raymond Bernard himself summed up his, and Burgundy’s, open-minded attitude towards Oregon winegrowers in his 1984 presentation on Pinot clones at the Cool Climate Symposium. “The state of Oregon and other regions have the right to hope for good results with Pinot noir, and we sincerely wish it. Great wines can never be too many in this great wide world of ours.”

Part Three:

There are the wine grape clones we talk about, and then, to paraphrase Oscar Wilde, there are “the clones that dare not speak their name.”

The ones we talk about have one thing in common – they have lineages that are more bureaucratic than aristocratic. They are the products of years of university testing and government certification. The end goal is the same – healthy material with stand-out traits. The traits are usually various combinations of disease resistance, high yield and wine quality, one of which usually trumps the others. But vine health is always foremost.

Plants carry diseases from insects to viruses. The damage of some viruses is limited to proliferating leaf speckles and PhD dissertations. Some, like the Leaf roll viruses, have little influence in young vines but cause a steady decline in yield and reduced fruit quality in older vines. Others, like Fan leaf, are true devastators. Viruses can spread from vine to vine, vectored by nematodes and insects.

Clonal selection is a response to virus problems. Most of the nastiest viruses were introduced to European *Vitis vinifera* from American rootstock imported in the 19th. century. (The rootstock, of course, was brought over to resist another American vine pest: the phylloxera root louse.)

By the 1950s, Burgundy’s vineyards were suffering heavy losses of yield and grape quality, and vine lifespans were becoming shortened from several decades to one. Growers were looking for material to replant with that would pull their industry back from the edge.

At the same time, America was waking up from the liquor-soaked hangover of Prohibition. The wine renaissance was just beginning, and US researchers were going back to old and abandoned vineyards and looking for promising material for new plantings.

Both places recognized the need for clean starter material. Viruses are easily transmitted through cuttings. Stock needs to be certified clean because anything nasty that it carries will be multiplied thousands-fold by our propagation of it.

But the definition of clean stock was contentious. French certification has emphasized testing and culling, while American certifiers have put their faith in manipulation and virus elimination.

Why the two approaches? In its older vineyards, Burgundy has a huge population of genetically distinct potential clones to draw from. From the French researchers’ viewpoint, if one potential clone turns out to be virus-prone, then there are literally millions of other potential clones to take its place, located right in their backyard. The French weren’t concerned that clones be perfectly virus-free; they wanted clones that performed well for the lifespan of the vine and that wouldn’t carry anything dangerous for other vines.

In the US, we had only a handful of Pinot noir clones from pre-Prohibition importations. At the same time, influential researchers at UC Davis took the view that what the Europeans claimed were clonal differences were just varying degrees of viral load. Americans developed techniques to clean up existing material in the hopes of going back to the one true varietal.

With the benefit of hindsight, it's clear that the American "viral load" theory of vine variation was wrong: genetically distinct clones do exist with a variety. The concept of "virus free" also has problems. Viruses and plants have coexisted since the beginning of life, and virus genetics and plant genetics are intertwined. More sophisticated methods of finding virus have led to an explosion of "new" viruses, most of which are benign. The clean plant has turned out to be a myth.

The American push for vine sanitation slowed the importation of foreign material. Many promising early imports were turned away because of minor viruses, and important domestic selections in research vineyards were grubbed out for the same reason. For years, Oregon Pinot noir growers chafed against the limited clones available for planting and Davis' focus on virus over vine genetics. Oregon growers finally partnered with Oregon State University to obtain a USDA importation license, allowing OSU to import directly from Europe.

In 1989, OSU cleared a new influx of pinot clones from France, via Dr. Raymond Bernard. Dr. Bernard, the father of France's Pinot noir clonal research program, generously presented us with the cream of his 30 years of research – the "Dijon Clones." Once the Dijon clones were released by Oregon State, they were quickly adopted by Pinot growers from here to Tasmania.

(See Part 2.)

With Dijon clones all the rage abroad, the French realized that they had released a valuable intellectual property, and that money from international licenses could help support their research. At the same time a California nurseryman, John Caldwell, sought to establish a commercial connection with French clonal researchers. In the 1990's he forged a business relationship with ENTAV/INRA, the French bureaux of agriculture, to license and import material legitimately. In return, the French collect licensing fees on every cutting sold – about 0.30 a piece. Caldwell has since passed the baton to California's Sunridge and Herrick Nurseries, which are continuing the relationship with ENTAV/INRA.

According to Sunridge, there are three interesting new pinot clones for 2005 which will be coming soon to a vineyard near you. ENTAV/INRA 165, 743, and 943 are all high quality selections. Of these, 943 has attracted the most buzz so far. Keep an eye peeled for it.

The certified clones are the result of decades of dedication, testing, and bureaucratic wrangling. Slow, boring, and frustrating yes, but the result has been a wealth of dependable material which can be tailored to suit the vineyard site. (UC Davis now offers cuttings of 58 certified clones of Pinot noir, with more on the way.) All of the certified clones can be planted and relied on to act in predictable ways and not die or infect the vines around them. Whether or not they make good wine is up to the growers' matching the clone to the wine they intend to produce and the site they plant it on.

However, there are growers who feel that the best clone lies somewhere abroad, and want to sidestep the expensive, cumbersome process of quarantine and certification. A brisk winter night's walk through Chambolle-Musigny with a pair of pruning shears, a short flight home with the sticks in the suitcase and *voilà!*, the perfect clone for the home place.

These are the clones which are mentioned only in hushed tones. The winemaker leans in close to the potential customer and says, "Between you and me, the secret to this wine is the clone. (Enter famous Burgundy producer here) gave me some cuttings from (enter famous name Burgundy vineyard here) and every year it makes the best wine in the cellar." Eyebrows raise, pocketbooks are produced, and the miracle clone has done its job again.

Sidestepping certification certainly saves time. And there is always the possibility that sheer luck will result in cuttings from plant with a low disease load, moderate yield, good flavors and disease resistance, all without the decades of patience that Dr. Bernard and his team had to expend to find their final material. Looking at it selfishly, an exclusive bootlegged clone would help marketing. Looking at it charitably, bootlegging in a miracle clone and distributing it could be a boon to the whole region's winegrowing effort.

This reasoning is akin to secretly building a nuclear power plant in your garden shed. Sure, if it goes right you could power the neighborhood. But if it goes wrong, you could vaporize the whole area.

A short list of devastating crud that has spread via illegal vine importations:

Phylloxera

Fan leaf Virus

Powdery mildew

Downy mildew

Vine Mealy bug

Past caution would have saved generations of winegrowers broken hearts, dead vines, and ruined domaines. Entire growing regions have yet to recover from the effects of smuggled grapevines' biological baggage.

The ruin caused by plant diseases has been taken more seriously by the US government in the post 9/11 era. The "Agricultural Bioterrorism Protection Act of 2002" transferred enforcement of illegal plant imports away from the USDA to the heavies at the Homeland Security Department. What this means is so far unclear, but it's certain that the wine served at Guantanamo is sub-par.

There is an alternative. In the last 15 years, the Foundation Plant Service at UC Davis has gotten pragmatic. American researchers have gained an appreciation for the value of clonal genetics. They've backed off of the requirement for absolute sanitation of certified material. (Low impact viruses are now allowed through) And they are now happy to shepherd your European or American heritage clones through the certification process, propagating, virus testing, index grafting, and even eliminating the viruses they carry. At \$5000 with all the extras, it's not cheap, but if the clone you have in mind is as good as you think, then it will be worth it.

The explosion of high-quality clones has left Pinot growers with more choices than ever. Oregon's first Pinot growers had 2 clones and a bootleg or two to work with. Now we have dozens of certified clones at hand. Nonetheless, today's growers have the same challenge that the first growers did: finding a good site and managing it well. Site and management have such an overpowering influence that clonal selection is almost negligible. But assuming that both site and management are first rate, the right clones can make a very good vineyard into one that is sublime.