

Notes from Quebec

This was a quick visit to the wine country of Quebec during some early spring-like days in March. I met many growers at the conference which was well attended (170+), as in the East there is a lot of enthusiasm for emerging wine industries. It was interesting that many of the “old” growers decided not to attend. I wondered if there was a rift between them and new growers who are adopting new varieties and practices.

This is cold viticulture here with temperatures often reaching -30C or colder. The wine industry is based on hybrids with Seyval being the main white variety. Marechal Foch used to be the primary red but it has been overtaken by Frontenac. The wine growers here are very experimental with new varieties from Europe and MN-WI, especially the UMN and Swensons. But not much is known about the viticulture for these varieties and a lot of experimentation is going on.

The area is the fruit basket southeast of Montreal and just above the U.S. border. It is flat and fertile with very dark, deep, fertile soils and devoted mostly to field crops with tree fruits and grapes in a few places around Bedford to Granby. The landscape is punctuated by some hillocks which are hot uplifts that appear to rise up suddenly to 200-300 feet. One vineyard is planted just at the base of a hill and the soils are very stony, not gravel but stones from fist to boulder size. With southwest aspect and a nice slope it looks like an ideal site for wine in the area.

Weather drives most viticulture decisions here. The cold winter requires a focus on vine survival. The tradition of burying vines is still in practice here. Vines are headed low, a la Burgundy/Champagne, and buried in the winter, then canes are trained up in a fan shape. It requires that the vines be pruned very early to select the canes for burial. In another application, cordon royat is so low that it is simply hilled over with long spurs sticking out of the top.

We visited one vineyard that is used a heavy white cloth material (referred to here as a geotextile) to cover Chardonnay. In one section, they actually removed the trellis and laid the vines on their sides. Straw is used to as a cushion to rest the canes on and then it covered and the sides are mounded over to hold the material in place. So far the practice has worked. The biggest problem may be mice who can damage entire canes. Many extra canes are left so there is enough budwood to select in the spring when the vines emerge.

The real cold hardy varieties like St Croix, Frontenac, La Crescent and others do not have to be buried. They are on various medium density spacings (3m x 1.75m) and trained either to VSP, high wire cordon or cane or Scott Henry is also used in some places.

Despite the cold, I saw no active frost or cold protection systems in place (fans) so there is nothing done to supplement site characteristics. With the cold hardy varieties uniformity in the vineyards is consistent with few of the gaps that would be seen if the vineyards had vinifera.

There is no sign of any interest here in planting vinifera varieties. It's just too cold for survival. But can viticulture be tweaked and pushed to accommodate vinifera varieties? Finding the warmest sites – south latitude, south aspect, perfect drainage, high density, etc. may open the door to some of the cold hardy vinifera, e.g. Chardonnay, Riesling, Cabernet franc. But there is a rule to follow: a good, ripe hybrid wine is better than a thin, unripe vinifera wine, hands down! So don't force vinifera into the industry. But Seyval, Marechal Foch, Marquette and other hybrids will likely not attract the interest of the wine critics and press that establish the reputation of wine regions.

Evelyne is like a private consultant hired by the provincial government to help grape growers in the region. She works in a provincial office and her salary is raised from funds paid by the growers. The

growers are her boss. She was trained at McGill in agriculture and always wanted to work with grapes. She started in this position in 2003. She services about 20 vineyards and visits them each week during the growing season to make recommendations. She also organizes meetings such as the Journee Vigne. She designs and executes viticulture experiments in applied research to provide answers to questions.

Research is done by faculty at McGill and Lavale universities but it is different from the U.S. land grant system. There is not a lot of resources being directed at wine right now. Also, the provincial department of agriculture has scientists who can perform viticulture research. The industry needs to engage these folks. Some questions are:

- Site selection – where are the best places to grow grapes i.e. warm sites with well drained soils
- What is the best vine density for hybrids. Reds. Whites.
- What are the best training and trellis methods for the hybrids for optimal quality
- What are the optimal yields for new varieties. Red. White.
- Is there any way to grow vinifera in the warmest places? Do you want to grow vinifera?

Alain Breault from Viticulture A&M is an excellent contact in the industry. He owns a large nursery that supplies vines to the industry and has worked closely with Peter to provide new vines materials to the wine industry. He helped to finance the meeting. He knows a lot about the viticulture in the region.

Wines: I had a chance to taste a lot of hybrid wines including UMN and Swenson varieties as well as old standbys such as Seyval and Marechal Foch. The quality was good to very good and it is easy to see the potential in these wines. RMP and WS will not laud these wines but an industry and regional identity can be built on their quality. The focus must be on quality.

Les Pervenches – Michael is young, enthusiastic and innovative. He is growing Frontenac, St Croix and Seyval, Chardonnay and using biodynamic technologies. He has retained Jean Pierre Colas from Peninsula Ridge (Ontario) to help him and he knows Thomas quite well. He says he controls black rot with frequent, low rate copper and sulfur sprays. He tries to manage the vsp canopy with classic methods. The tender vines are covered with a heavy white woolen-like cloth that insulates the vine. Frontenac is on vsp and left up with no special treatments. The wines are good. 2008 was a difficult year with lots of rain but dry in late Sept and into October. The Seyval was clean, slightly herbal, but the acidity was not sharp or out of balance. But it Seyval doesn't have a lot of appealing fruit. The Chardonnay is very nice with good balance and structure, citrus and banana flavors characteristic of cool climate Chardonnay. We tasted 3 different Chardonnay – a Scott Henry on deeper soils, VSP on thin and deep soils. The differences were subtle and more of concentration than flavors. A bottled Chardonnay (vintage unknown) was very clean with nice fruit – green apple and citrus but a little heavy on oak that masked the pretty fruit. Interesting since we say no new barrels in the cellar.

Les Petits Cailloux – Martin is a former software engineer who purchased a former apple farm on a beautiful slope below one of the big bumps. It has beautiful slope and exposure. The winery is new, well-equipped and very clean. The wines were clean but need some personality. Oak treatment would improve the Frontenac. The St Croix was very tasty.

St Croix Vineyards (Peter Hemstad): The La Crescent is outstanding with apricot and apply flavors and surprisingly good concentration and balance. The acidity adds structure and the RS brightens the fruit flavors. Aromas are off the chart for the variety but it delivers on the palate.

Frontenac: a nice fruity wine without the big cherry component but better balanced and not grapey. Good acidity and structure makes this a nice sipping wine. There are blending possibilities to soften and round the wine but Peter does not like to adulterate his wines.

Marquette: a very nice wine, sort of Pinot noir like in color and concentration with good depth and balance, just a little light on the mid-palate it could you some filling (maybe lower the crop by 25%?). Bright flavors but that are not full blown cherryish fruit but more subdued. Best of all, acid is in balance. It did not stick out. As with many red hybrids blending with a Merlot-like wine for roundness and softness to fill in the middle might help. But this variety continues to be impressive.

Lincoln Peak Vineyard (Chris Granstrom): A 2008 Frontenac highlights the pure cherry fruit of the grape. This is a lighter yet full bodied, cherry colored wine that is well balanced and bursting with fruit. Acidity is in nice balance here.

Possibly return in the summer to visit more vineyards with Evelyne. Meet with Monique and Ginette at provincial agriculture. Ginette is the small fruits specialist. Alain offered to set up a meeting with the older growers who did not attend the conference.

Wednesday – post-conference discussion with Peter and Philippe

Present were a mix of researchers, consultants, vendors, growers and nursery to ask questions of 3 of the speakers at the previous day's meeting. It was really an excellent chance to talk about some of the main issues facing the Quebec wine industry with some people who are close to it.

Peter said that rootstock breeding is a small part of the program at UMN. There is some indication that rootstocks may impart a direct cold hardiness effect to the scion. Research was done on St Pepin in the 80s that may indicate this relationship. 3309 was being crossed with other varieties but 3309 still suffered from winter injury.

When new varieties are released it takes about 2 years to build up enough material in the nursery system for a commercial release. The process is slow and deliberate. The import/quarantine process in Canada slows down the availability of new releases. In the selection process disease resistance is very important, also phylloxera and cold hardiness. Peter is the one who screens the material and has his own selection system. They have 10,000 vines but only 150 end up making wine in a year. They reduce variables in vit/enol and wine should represent the genotype. Peter makes the call, he tastes the grapes in the vineyard and makes a

Alain commented that you need a really good reason to graft and in general it is better to plant own rooted vines. The need is for a short season red wine variety that has more tannin. Marquette may be that variety once it is fully tested in Quebec. There was a suggestion that a better white variety, more aromatic was needed. Reply is to work harder on improving viticulture and wine making technology and practices with current varieties, which have not yet achieved their full potential. Research and extension education will help growers and wine makers to improve what they are growing, both traditional varieties like Seyval and Marechal Foch and also new ones like Marquette and La Crescent. Don't just wait and hope for the next great grape to come out of a breeding program.

Evelyne asked how to figure out the ideal yield and vine density on a particular site and how important is leaf area and shoot length. These are all characteristics that are best researched on the regional/local and specific vineyard site. There are general rules such as red varieties typically are on higher density than whites but the ideal footprint for each variety is variable according to site characteristics. Leaf area index (LAI) is set at cm^2/gr of fruit but this can vary too. Smart says to leave 15-20 leaves per shoot for 2 clusters but in a cool to cold climate where season can be short would it be better to have a taller canopy? At higher latitude of Quebec with longer summer days will this give the same effect as extra leaves? Good canopy architecture and management according to international (Smart) rules should work in Quebec. Peter said that at UMN Marquette and Frontenac are planted at 3-3.25m between vines. Marquette yields are typically 4 t/a and Frontenac 5 t/a. Crop yields data can be collected by length of trellis or weight per vine. Alain stated that vine vigor is not reduced by moving vines closer together.

Peter said 82cm is typical height for the fruit wire in MN. He likes to have it at a height that is easy to work with but there are reasons to be lower and higher. Lower for additional heat in the fruit zone as reradiated warmth from the soil at harvest to help ripen grapes or a high wire to rise above a frost or freeze layer. Ability to bury vines also is a consideration. One grower said that when vines are low, cordons are buried but when the snow melts the frozen crust pushes down on the vine and often breaks parts. Peter mentioned the danger of more humidity and moisture when vines are closer to the ground.

Philippe suggested that specific viticulture and enology issues such as varieties and vine vigor be identified through a survey and research and education applied to them to find answers.

Research can be done on cold hardiness. Some discussion took place about using DAT (differential thermal analysis) to determine the cold hardiness of varieties during the growing season as they do at Cornell and Ontario. This can help growers to adjust bud numbers. DAT measures the freeze point in the bud by showing a spike when heat is released at the freezing point. A rate of survival percentage can be given for each variety.

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