

Cabernet Franc in Virginia Today

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The Virginia Vineyards Association 2007 Technical meeting February 9, 2007 included an approximately two hour presentation “Dealing with Herbaceous Tones in Cabernet Franc” consisting of two parts: the first, given by Dr. Bruce Zoecklein was a synopsis of information published by him in July 2004 in *Enology Notes* 114 and concluded in 115. www.vtwines.info/ which should be read by anyone interested in this subject. Excessive herbaceousness is mainly derived from a group of pyrazines, most importantly methoxypyrazines (MP). The odor is generally associated with that of bell peppers. These MP not only impair the odor of the wine, but also negatively impact palate balance by amplifying acidity and astringency. Moreover the human threshold of detection is very low, as low as 2 nanograms per liter. In addition to the maturity factors discussed in the *Enology Notes*, a very important precaution is complete removal of stems at the time of crushing because MPs are concentrated in the stems. When Tom Stevenson visited Virginia in 2004 he severely criticized the Virginia Cabernet Franc he tasted at that time. See “Virginia Dares” under On-Line Publications on the above site. The perception of Cabernet Franc as being overly tannic is believed to be due in part to the fact that MP amplifies the astringency of the wine. Dr. Zoecklein and a number of VA winemakers have sought to address this problem. They consider suppressing MP essential to establishing the reputation of Virginia for Cabernet Franc.

The second part of the presentation was in fact broader in scope than managing MP and included a generous amount of vineyard and harvest information and data on the processing of Cabernet Franc. Four winemakers each presented two Cabernet Franc wines from the 2006 vintage. Not only are the wineries represented among the most prestigious in Virginia, two of them are quite large. (Morrisette and Williamsburg, have an annual total production in excess of 60,000 cases.) The web addresses of the four are provided below for reference. During the panel discussion, when asked why they are making Cabernet Franc as a varietal, the reply was that customers were asking for it. In addition one of the winemakers mentioned that one of his prestige Bordeaux blends is primarily Cabernet Franc, a Virginia Cheval Blanc (60% Cabernet Franc) so to speak. The winemaker from Williamsburg pointed out that in their 60 acre re-planting plan, they will include a larger proportion of Cabernet Franc than in the past. Thus the commitment in Virginia to Cabernet Franc is substantial. There were 170 participants at this session. The wine industry has responded with research and effort to improve the perception of their Cabernet Franc and the growers who are planting to meet demand.

Each winemaker showed detailed harvest and processing parameters on the screen. Unfortunately, these were not provided as a hand out and it was impossible to copy all the information before the data disappeared from the screen. The winemakers had done a lot of data gathering and appeared willing to share it. The lack of written materials was apparently simply an administrative failure. These winemakers uniformly used enological tannins and color promoting enzymes in fermentation. Some used a cold soak others did not. Three used extended

maceration, the fourth did not. All the winemakers were seeking a Bordeaux style wine, aged in oak barrels. There was a general preference to adjust the acidity to around 6.5 g/l. The first three pairs had already been in barrel for some time which tended to obscure the differences sought to be shown. The fourth set of wines had not yet spent significant time in the barrel so that the differences were more evident.

The first pair of wines was from Ch Morrisette www.thedogs.com. One was from a vineyard cropped at 9 tons per acre on a highly vigorous site. While the wine was low in color and intensity, MP was not evident. The second wine was from vines cropped at two tons per acre. While the color was dark and the flavors intense, there was also a hint of MP, which some participants viewed favorably. MP is a little like Brett--some tasters expect Cabernet Franc to be slightly vegetative. Based on comments from the floor by the grower, it was speculated that the second vineyard was in fact undercropped which allowed new growth at harvest, leading to the accumulation of MP. The comment was also made that probably delestage will not eliminate MP before it has transferred to the wine. This winery processes 100 tons of Cabernet Franc each year. The second pair of wines were from Rockbridge, www.rockbridgevineyard.com the grapes taken from the same vineyard 8 days apart. This pair illustrated the benefit of additional hang time.

The winemaker from King Family www.kingfamilyvineyards.com offered three dry wines; one was from a drought stressed vineyard on silt loam picked at 21 Brix, the second and third from non-stressed vineyards one on clay loam and the other on silt loam, both picked at 24 Brix. This winemaker bled the second wine at 10% and the third at 15% and added oak cubes to the fermenter. Oak does not remove MP but it masks the odor if incorporated into the wine early in the fermentation. The fourth wine from King Family was an amarone style wine made from Cabernet Franc. This had in fact nothing to do with MP but rather was intended to illustrate a process for making a dessert wine from Cabernet Franc by drying the grapes. The result was a wine of 15% alcohol and 78 g/l RS, retailing for about \$28 for a 375 ml bottle.

The final pair of wines were from Williamsburg Winery www.williamsburgwinery.com These were the wines which had just gone into barrel and illustrated the difference between grapes grown on a limestone soil and granitic soil. The Anjou character of the second was noticeable, but not as distinct as found on schist soils such as those of Chester County, PA. On account of their stylistic goals (barrel fortified reds), these winemakers did not place a lot of importance on soil type, except for how water retention impacted late season growth. If one were seeking the more floral, unwooded style of Anjou then selection for the appropriate soil type would play a role.

3. Herbaceous Character in Red Wines, Continued. As outlined in [Enology Notes #114](#), red wines occasionally have excessive herbaceousness, resulting in a reduction in fruit intensity, and detrimentally impacting palate structure and texture.

This sensory feature is mainly derived from a group of nitrogen-containing compounds, pyrazines, which are present in green plant tissues, including grapes. One important methoxypyrazine, IBMP (2-methoxy-3-isobutylpyrazine), imparts a vegetal aroma at relatively low concentrations in the fruit, ranging from zero to 35 ng/L.

Several factors have confounded our understanding of methoxypyrazines, including their very low concentrations (and, therefore, difficulty in quantification) and their association with other compounds.

A concentration of 1 ng/L is 1 part per trillion. Allen (2006) put this in perspective in a presentation outlining the difficulty in monitoring methoxypyrazines: If the earth's population is 6,493,359,729, then measuring IBMP would be roughly equivalent to measuring 154 earth populations.

An additional confounding factor is that herbaceousness can be caused by methoxypyrazine, certain monomeric phenols, and polyunsaturated fatty acid derivatives. These include compounds such as hexanal and hexenal, which we have measured in relatively high concentrations in some regional wines.

Some important issues regarding viticultural and enological parameters influencing herbaceousness were outlined in [Enology Notes #114](#).

It is essential to have adequate ripeness and uniformity of ripeness. One universal problem has been the difference between berry sampling and the true maturity of the vineyard block. For issues relating to berry and cluster sampling, see Maturity Evaluation for Growers, online at www.vtwines.info. Click On-line Publications.

Editor's note: I would like to thank John for this contribution. I think growers like to hear from other growers. If you have something on your mind please call me to discuss it and possibly write an article about it. I welcome contributions. As far as I could tell John was the only PA wine grower at the meeting. I appreciate his dedication to learning.