

**Case Study: A Wine Saved.** My high school shop teacher, who was a master woodworker, once told me that the mark of great craftsman is the ability to cover his or her mistakes. Well, hopefully we don't make too many boo-boos but they are inevitable and our ability to recover or ameliorate them is part of what makes us successful in our profession. Brad Knapp, the owner and wine maker of Pinnacle Ridge Vineyards in Berks County (Lehigh Valley) had a wine with a problem. On the same drive to State College mentioned above, Brad told a remarkable story of enological problem solving that allowed him to take a wine with a volatile acidity problem and transform it into a salable product. The story here is not about the wine at all but the process Brad used to find a solution to a wine making problem. In fact, farming and wine making is mostly about problem solving. In vintages like 2010 there are few problems, in 2011 there are lots. It's a particular discipline and thought-process that allows wine makers and grape growers like Brad to find solutions to vexing problems. In this case, it was finding the right sources for information, identifying the problem, getting proper analysis, finding the best expert advice, and using technology that could correct the problem. Brad was very, very generous to share his experience with you.

**20XX XYZ Red at Pinnacle Ridge – For industry members only, not for public distribution.**

20XX was a very strong vintage for XYZ Red in the Lehigh Valley A VA and we had/have very high expectations for the wine. I did note, throughout the summer of 20XX that barrel samples of XYZ displayed high acid (to taste). This is not atypical of the variety but it seemed more acidic than expected (based on the warm vintage). Clark Smith came through our winery and tasted (one of the benefits of membership in the PQA) while he was in Pennsylvania for his two day seminar in Lancaster. When he tasted a barrel sample of XYZ Red, he commented on the acidity and asked whether the wine had completed malolactic fermentation. I responded that I thought that it had but I had not confirmed it with lab analysis. Consequently, I sent a sample out to Eastern Wine Labs for analysis of malic acid and also tested volatile acidity (VA) at the same time (just as a check). The results of this first analysis were that the ML had completed but the VA was high (0.126 gms/100 mls – over the legal limit). I then pulled samples from more barrels and had them analyzed and all of the barrels displayed high VA to varying degrees. In total there were 24 barrels of 2010 XYZ Red with high VA.

Obviously, this was disappointing news and I was not quite sure as to what to do. I ended up talking with numerous people (other winemakers in the area, vendors) and finally decided to use Clark Smith's mini-consulting services (ask any question for \$50). Clark suggested that I get some microbiological analysis done on the wine to determine if this was a problem that was getting worse or if the wine was in a stable condition (not getting worse). I sent samples to ETS Laboratories for their Scorpion analysis and found that the wine had a large population (2.8 million cells/ml) of oenococcus (good ML bacteria) and a reasonably large population (900 thousand cells/ml) of *L. brevis/hilgardii* (not as good ML bacteria). Apparently the *brevis* can convert sugar into acetic acid (VA) if the population gets a foot hold while sugar is still present. ETS had also run an analysis for residual sugar and the wine was completely dry. So it turned out that the "bad" bacteria had gotten a foot hold in the primary fermenters (and must have spread from fermenter to fermenter via punch down tools or other means), and created high VA early in the wine's life. The good news is that the wine was stable and not getting worse.

Clark had recommended reverse osmosis (RO) to treat this wine. I ended up calling two vendors (one that travels and one that doesn't) and hired the traveling vendor to come to the winery with their RO equipment. They arrived, set up the equipment, ran the wine through the RO process and reduced the VA down to "normal" levels.

The wine is still resting in barrels awaiting bottling.

The End

**Editor's note:** *ETS, Clark Smith, Eastern Wine Lab, the mobile R.O. service. Notice what a diverse and expert sources for information and services Brad used to solve his problem. And that he was not afraid to spend some money to solve the problem and, in the end, make some money.*