

# Winemaking, a Primer:

*by George Gibson*

In this article, I'll present some basic caveats that may help keep you on the winemaking "straight and narrow."

I am firmly and uncharitably convinced that some home winemakers have an "oenological death wish"!

Their problems tend to reflect having learned to make wine in a vacuum with no one to consult and acquiring counter-productive winemaking habits that almost guarantee quality will elude them.

There are two basic positions that make sense in home winemaking. One is to make wine as cheaply and simply as possible without wasting time and effort and getting by with basic table wine – read plonk!

The other involves a commitment to quality bordering on the obsessive that requires a body of knowledge at a level nearing that of commercial vintners. It is a lot easier to get novices started off on the right foot than to change 30-year-old habits of veterans. It is the goal of this article to even that playing field.

## Equipment Precautions

**Plastic Containers** — Use food grade white plastic only. Never use plastic garbage pails or bags. The alcohol in the young wine can leach out carcinogens and other compounds with very unpleasant petroleum odours and taste. For bungs, use food grade plastic or Tygon (white — not coloured, sulphur free) or silicone. Move to glass of known history as quickly as possible.

Never use reactive metals (iron, aluminum, alloys, even brass and copper). Metallic tastes may result, and nasty acrid flavours from grape acids acting on metals are unpleasant. Never use metal caps for jugs. Paint exposed metal parts with food grade epoxy enamel. Move up to stainless steel as soon as you can afford it.

## Aseptic Precautions

Use reasonable cleanliness. Don't over do it with sterilizing. Don't rely on sulphite as a sterilizing agent — IT ISN'T!!! Don't swab or rinse everything in sulphite solution — this is ineffective. Its prolonged use and inhalation may be dangerous. Remove labels from bottles and jugs. They can be a source of contamination. Use a tap-mounted bottle washer. Consider this an essential piece of equipment.

Rely on hot (not boiling) water for routine rinsing. Don't use detergents or soap which leave films and off tastes. Rinse tubing immediately after use!!! Clean up juice and wine spills immediately. If you can't get to them right away, squirt some SO<sub>2</sub> on them to keep contaminants at bay. Eliminate sources of fruit flies, and keep them out of your fermenters to avoid contamination from vinegar bacteria.

## Don't's

- Never use ingredients of unknown origin. Don't buy concentrates at a fire sale — you will get burnt!!
- Never add dry ingredients to wines or musts. They could form a mass and still be there when fermentation is over. Dissolve acids, sugar and chemicals in a small amount of warm water or in a sample of wine or must.
- Never use "acid blend." It adds no proven organoleptic advantage over tartaric acid for grapes, citric acid for fruit or malic for apple wines. The blend usually contains these three acids in varying amounts. Adding malic acid may encourage malolactic fermentation. Citric acid may convert to acetic acid. Control your wines all the time.
- Never use secondhand corks. They are impossible to sterilize without losing their integrity.

- Never use wine conditioner. Conditioner components are based on average case needs. If diluted, the sorbate may add a geranium character to the wine. Always plan the fermentation and management of each wine in terms of style for appropriate yeast, acid, sugar, fermentation, temperature and residual sugar. Be prepared to adapt!!
- Never use non-dated Sodium Hydroxide. Titrate stale NaOH against a standard to determine its actual strength but it is better to buy sodium hydroxide pellets (keep them very dry) and make your own solution. Eight grams of NaOH pellets in a litre of distilled water will give a 0.2N solution. Make up stock sorbate and sulphite solutions every few months to ensure potency.

### **Testing NaOH Strength**

To determine if your sodium hydroxide is stale prepare a standard solution of 5% Tartaric acid in a litre of boiled water (50 grams of Tartaric acid in a litre). Titrate this solution with your NaOH to end point. If you do not reach end point with 5 ml of NaOH (if too much is used, then it is stale) buy a new bottle of NaOH.

### **Buy a pH meter**

An easier way to test wine acidity is to use a pH meter. These are now inexpensive (\$40-\$80) and allow you to titrate to pH 8.2 without being concerned with colour changes (end point).

### **Do's**

- Always work in metric units. They are much easier to calculate.
- Always determine the variables in the must. Test sugar with a hydrometer, acid with an acid testing kit, and pH with a pH meter.
- Always adjust the must before fermentation if amelioration or chaptalization are required.
- Always keep good records. Make notes immediately and record the amounts of all chemicals added. Monitor specific gravity, aroma, flavour appearance frequently and regularly.
- Always sniff and taste young wines periodically. Don't wait until they are bottled to find you have a problem. This will also help educate your palate.
- Always make a starter for malolactic fermentation.
- Always calculate and measure accurately. Home winemaking is still an art. The more you reduce variability, the more likely you will repeat your successes.
- Be vigilant about topping up to within a few centimeters of the bottom of the bung. Sufficiently fill the air lock.
- Always test wine stability for residual sugar, free SO<sub>2</sub>, protein, pectin, cold, heat and malolactic conversion. Remedy as soon as possible.
- Learn what contributes to quality in grapes, juice and equipment. Attend seminars and subscribe to useful periodicals.
- Deal with innovative and knowledgeable suppliers that use the products they sell.
- Make as much wine as you can afford, commensurate with financial, marital and hepatic stability. Amateurs who restrict their annual winemaking to two carboys of 'Chablis' will never really learn to make good wine.

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