HOME WINERY SANITATION

by

Lum Eisenman

Winemakers are responsible for many different activities, but one of his or her most important duties is to make sure the winery is maintained in a clean, sanitary condition. Off odors and flavors can develop in wine unless sanitary conditions are maintained, so proper sanitation is important. Unfortunately, some novice home winemakers have a poor understanding of the materials and methods needed establish and preserve sanitary winemaking conditions.

Basic Rules

The basic principles of sanitation used in the wine industry can be found in "Sanitation Guide for Wineries" published by the Wine Institute. This excellent publication lists the following steps as important for proper winery sanitation.

1. Keep the winery clean and free of refuse inside and out.
2. Inspect the premises and the equipment at least one a month, on a regularly scheduled basis.
3. Eliminate harmful bacteria, mold, insects and rodents.
4. Use plenty of hot water, sterilizing materials and cleaning aids.

Although these rules may seem obvious, home winemakers are well advised to consider just how each of these rules applies to his or her particular situation.

"Wash everything just before use and then wash again when the job is finished" is a simple but effective rule used in all commercial wineries, and this is particularly good advice for home winemakers. Twice as much work might be implied, but tremendous amounts of time and labor are saved when this rule is followed. Wet grape residue rinses away easily, but dry residues are very difficult to remove. For example, rinsing out transfer tubing after use is quick and simple operation, but cleaning the dried muck out of twenty feet of tubing is a difficult task.

Rinsing is very important when any cleaning material is used in a winery. The winemaker must be sure all of the cleaning material is removed, and if there is any doubt, the surface should be rinsed again.

Chlorine can be difficult to remove from porous surfaces, so winemakers often rinse surfaces sanitized with chlorine in the following way. First the surfaces are thoroughly rinsed with clean water, and then the surfaces are rinsed with a solution made of one tablespoon each of sulfite powder and citric acid. Then a final rinse is done with clean water to remove the sulfite solution.

Cleaning Materials

Many proprietary cleaning materials have been developed specifically for the food and wine industry, and these products are used extensively by commercial wineries. But, many proprietary products are difficult to buy in small quantities, so most home winemakers use other cleaning materials.

Detergents

A good detergent wets the surface readily, softens the water, emulsifies fats, particulate materials are de-flocculated, has some sterilizing action, easily rinses away, etc. Home winemakers often use liquid

dish washing detergents because they are readily available. Many of these liquid detergents do a good job in hot water, but their performance in cold water is often poor. Some dishwashing detergents are strongly scented, and these products should be avoided. Usually, any cleaning product with a strong perfume should not be used in a winery because porous materials like polyethylene can pick up and retain the perfume odors. Polyethylene containers can retain odors for some time, and the odors can be transferred to the wine. Used polyethylene drums that have contained diesel fuel or gasoline are useless for winemaking

Phosphates

Sodium phosphate is an excellent water softener and a good cleaning material. In addition, sodium phosphate residue can be washed away easily and quickly. Sodium phosphate is a principal ingredient in many automatic dish washing detergents and sodium phosphate is inexpensive and readily available in this form. Many home winemakers use a phosphate-based detergent for cleaning and sterilizing used wine bottles.

Tri Sodium Phosphate

Tri Sodium Phosphate (TSP) is the workhorse cleaning material in many wineries. TSP is a powerful cleaner and it is easier to rinse away with cold water. A few tablespoons of TSP are often used in a gallon of hot water. At useful concentrations, the solution makes your hands feel soapy or slippery. At higher concentrations, TSP becomes caustic and can be hard on the hands. So, appropriate gloves should be worn when using strong TSP solutions

Hypochlorite

Sodium hypochlorite (Clorox) is an effective material for disinfecting winery surfaces and equipment. Unscented Clorox can be purchased at the local super market. It is inexpensive, and a very effective sterilizing agent. These chlorine bleach materials are all the same stuff, so buy the least expensive brand available.

Clorox is a powerful and useful cleaning material, but it has two major disadvantages. (1) Clorox is difficult to remove completely from many surfaces, and surfaces cleaned with Clorox must be thoroughly rinsed with clean water several times. (2) Clorox can generate poisonous chlorine gas under certain conditions, so Clorox must always be used with care.

Some Cleaning Aides

An adjustable nozzle attached to a garden hose is the primary piece of cleaning equipment in home wineries. The nozzle should provide several spray patterns including a strong, high velocity stream, and the nozzle should not leak.

A square nose shovel, push broom and a long handled squeegee are standard equipment for cleaning crush areas and other winemaking spaces.

The long handled brushes designed for washing automobile hubcaps are convenient for scrubbing equipment, small tanks and containers. An assortment of bottlebrushes is needed to clean wine bottles, jugs and glass carboys.

A "jet" carboy washer is a great aid when washing old wine bottles. This little brass gadget attaches to a water faucet and delivers a powerful jet of water to the inside surfaces of any bottle or jug. The water starts flowing when a bottle is placed in position and automatically turns the water off when the bottle is removed.

Handling Pomace

Pomace should not accumulate near active fermentations. Pomace acetifies very quickly in hot weather. Then the pomace attracts fruit flies, and the flies carry acetic acid bacteria from the pomace pile to the fermentations. Pomace should be disposed of when it is removed from the press.

Some home winemakers place 20 to 30 pounds of pomace in large plastic trash bags, and then place the bags at the curb on trash collection day. Other home winemakers keep extra trashcans with tight fitting lids specifically for pomace disposal. A few home winemakers rent dumpsters each crush season. However, dumpsters must be emptied promptly in warm weather, or the pomace will start to smell and attract fruit flies.

Equipment

Sanitation includes cleaning and sanitizing all surfaces that contact juice or wine. Sanitation in any winery is an ongoing effort, and much labor is expended just keeping the equipment and cooperage clean. Equipment such as crushers and presses should be scrubbed with a TSP solution and carefully rinsed with clean water just before being used. Then the equipment should be washed again immediately after use before any residue has time to dry. Bottle fillers, filters, lines and pumps often harbor microbes, so these items should be cleaned with special care. A standard procedure is to assemble the pump, hoses, the filter, etc. The input and output hoses are inserted in a bucket filled with a TSP solution, and the pump is used to circulate the solution through the system. The TSP solution is drained, and the procedure is repeated with a week citric acid solution. The equipment is ready to use after the citric acid solution has been drained completely.

Hoses and Tubing

Hoses and tubing require special care because the inside surfaces are difficult to reach. Dirty hoses should always be cleaned while the residue is wet, and a TSP solution will do a good job if used promptly. The tubing should be rinsed several times with clean water so no TSP remains. Mold often grows when water is allowed to stand in hoses or tubing. Hoses should be hung on a wall with both ends pointing down, so water can drain completely.

Carboys and Tanks

Two types of tank residues are difficult to remove. A heavy brown residue often forms near the shoulder of glass carboys. Here, a bottlebrush with a bent handle, TSP and lots of elbow grease is required.

The second problem arises when a tank has been used for a long time and the inside surfaces become covered with a heavy tartrate deposit. The tartrate will cause no harm if the coating does not contain trapped lees. In fact, a moderate tartrate coating will accelerate cold stabilization of new wine stored in the container. However, after a tank has been used for several years, the tartrate layer becomes thick and contaminated with lees. Tartrate deposits do not dissolve readily in cold water, so a heavy tartrate deposit can be difficult to remove. However, warm water and a small amount of sodium carbonate dislodges the tartrate easily.

Barrels

Maintaining empty barrels is difficult. More than two gallons of wine soak into the wood, and the wine in the wood turns to vinegar when empty, unprotected barrels are stored. Then the barrel becomes contaminated with vinegar bacteria, and sterilizing contaminated barrels is impossible. Large wineries keep their barrels full of wine. When aged wine is removed, the barrel is washed with clean

water and immediately refilled with new wine. Most experienced home winemakers also keep their barrels filled with wine, but much bottling just before or during the crush season is required.

Used Wine Bottles

Dirty bottles are usually soaked for a few days to loosen the dried sediment and the inevitable mold colonies. Next, the bottles are placed in very hot water containing a phosphate-based detergent. The inside surfaces are scrubbed with a bottlebrush and the outside surfaces are scrubbed with a course nylon pad. Then the bottles are thoroughly rinsed, drained and dried. After the bottles are dry, they should be stored points down in clean cardboard cases.

Summary

Sanitary conditions are needed to prevent off tastes and off odors from developing in the wine, and much of the work in any winery consists of routine cleaning operations. All winery space and equipment should be inspected and cleaned often, and effective cleaning materials and procedures should be used.