TIPS FOR SMALL PRODUCERS

by

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Buying grapes

High quality wine can only be made from high quality fruit. When grapes are picked too early, the wine is usually high in acid, low in alcohol and often lacks good varietal flavors. On the other hand, when grapes are picked too late, the wine is often low in acid, high in alcohol and may have stewed fruit or prune flavors. So, high quality grapes must be picked at the right time.

When buying grapes, talk with the grower and be sure you understand the growers harvest criteria (Brix, pH, TA, etc.).

A phone call at 8:00 P.M. telling you that your grapes will be picked tomorrow morning can be a big pain, so be sure and ask the grower how much warning he will provide at picking time.

Most local white grapes are not ripe until the sugar level is above 22 Brix. Chardonnay and Viognier grapes are often picked at 24 Brix or even higher. Most local red grapes are not ripe until the sugar level reaches about 24 Brix. Under-ripe red grapes are best used for making blush wines. Under-ripe white grapes are often used to make sparkling wine. Overripe red and white grapes are often best used to make sweet dessert style wines.

Depending on variety and the equipment available, a ton of grapes will produce from 150 to 180 gallons of juice or new wine. Small wineries using vertical basket presses often get only 140 to 160 gallons of juice or new wine per ton of fruit unless the press cake is crumbled several times.

Many small wineries bottle 55 to 65 cases (132 to 156 gallons) of wine from a ton of fruit.

Spillage, racking and evaporation losses are unavoidable, so plan on making extra topping wine when the grapes are purchased.

Brix is grams of sugar per 100 grams of juice. Just before harvest, make up a standard 20-Brix solution by dissolving 100 grams of table sugar in 400 grams (milliliters) of water. Use the 20-Brix solution to calibrate your hydrometers and refractometers. Keep the solution in a tightly sealed glass bottle. Discard if the solution becomes moldy.

Transporting grapes

Large wineries buy grapes FOB their crush pads. But, most growers are not willing to deliver small quantities of fruit, so small wineries usually buy their grapes FOB the vineyard.

Two-ton, steel gondolas measure about 4 feet by 4 feet by 8 feet.

Half-ton fruit-bins, measuring about 44 inches by 44 inches by 22.5 inches inside, will hold about 1000 pounds if the grapes are heaped high.

A 48-inch X 32-inch X 24-inch box will hold about 650 pounds of grapes.

33-gallon plastic trashcans hold about 165 pounds of grapes.

Plastic field lugs hold 45 to 55 pounds of grapes.

Plastic milk crates hold 35 or 40 pounds of grapes when lined with a plastic trash bag.

5-gallon buckets hold about 25 pounds of grapes.

Lining the bed of a pickup truck with a sheet of 4-mil polyethylene plastic is an easy way to transport a ton of grapes. The fruit is dumped directly into the truck and then a fork is used to unload the grapes into the crusher.

Sanitation

Grape residues are easy to rinse away with cold water before they dry. But, dried grape solids are very difficult to rinse away. So, the rule in every winery is .....wash the winemaking equipment just before use and wash everything again after use **before** the grape solids have time to dry.

The most important piece of sanitation equipment for the small producer is a water hose equipped with an adjustable spray nozzle.

Brushes with long handles can be purchased at automotive supply stores. These stiff-bristled brushes are used for washing auto hubcaps and wheels, but home winemakers find them handy for scrubbing all kinds of winemaking equipment. The long handles make these brushes very handy for scrubbing the inside surfaces of small fermenters and tanks.

Home Depot sells wall brushes with long adjustable handles for a few dollars. These brushes are very effective for washing wine tanks.

The inside surfaces of transfer hoses mildew easily. After cleaning, hoses should be hung with both ends pointing down, so they can dry out. Or, hoses can be laid on slanting tables so they drain completely.

Full strength Clorox can be used to remove stubborn stains from inside hoses and other difficult to reach places. But, rinsing must be done very carefully to remove **all** of the Clorox.

On the crush pad

The traffic pattern is an important consideration when designing a crush pad because the vehicles may be large and they may have limited visibility.

Equipment will be washed at least twice a day, so concrete crush pads with good drainage are a must.

The shade that is provided by a covered crush pad is a blessing on a hot, sunny day.

Put a hook in a convenient place on the crush area so a garden hose and spray nozzle will always be handy.

Fermentation

When fully ripe, most local grapes are too low in acidity so tartaric acid additions are often needed to produce a balanced wine. Considerable time is needed to allow the acid taste to integrate and mellow, so major acid adjustments are best made before starting the fermentation.

A ton of red grapes produces about 220 gallons of must.

Red fermenters should only be about 85% full to allow room for the cap.

About two tons of grapes can be fermented in a 500-gallon poly tank. But, use a low foam producing yeast and plan to punch down the cap often.

About 1400 pounds of red grapes can be fermented in a half-ton fruit bin.

About 450 pounds of red grapes can be fermented in a 55-gallon, poly drum if the top has been removed.

Diamonium phosphate and proprietary yeast foods such as SuperFood are inexpensive. So, many small producers try to avoid fermentation problems by adding extra yeast nutrients to all their fermentations.

Montrachet yeast is notorious for producing excessive quantities of hydrogen sulfide when used with grapes containing sulfur residues. So, never use Montrachet yeast if the grapes have been sprayed with sulfur.

Practically all the red color and flavors are extracted in the first 6 to 8 days of skin contact. On the other hand, tannin and some of the bitter phenolic materials continue to be extracted for a much longer time.

Fermentation may be complete when (1) all bubbling has stopped **and** (2) the Brix has dropped below zero **and** (3) the Brix reading remains constant for several days. But, the best way to be sure fermentation is complete is to measure the residual sugar with *Clinitest* tablets.

Buy a Plus and minus five short-range hydrometer. Zero Brix is in the center of the scale. The scale is large, and 0.1 degree Brix can be read easily. These hydrometers are useful for monitoring sugar content near the end of fermentation.

Pomace acetifies very quickly in hot weather. Then the pomace attracts fruit flies, and the flies carry acetic acid bacteria from the pomace pile into active fermentations. Pomace should be disposed of promptly.

In the cellar

High-density, polyethylene tanks make good wine storage containers. They are relatively inexpensive, light weight and easy to clean. But, the lids supplied with many poly tanks do **not** provide a good, airtight seal. Small polyethylene tanks cost around $1.00 per gallon of capacity.

Older, used, barrels can often be purchased for about 25 dollars, and older barrels can make effective wine storage containers when used with oak chips. The usual addition is a pound or two of the chips per barrel.

Inspect used barrels carefully with a battery and a light bulb on the end of a three-foot wine. Trust your nose and make sure to smell **every** used barrel before buying.

Loose oak chips can be added to barrels. The chips will float on the surface of the wine for a few and then they will sink to the bottom. Depending on design, the loose chips may bother some pump operation, but a screen to block the chips can be fitted to the suction line.

Fifteen-gallon stainless-steel beer kegs, 5-gallon water bottles and 1-gallon glass jugs make handy storage containers for leftovers and topping wine.

Practically all of the sulfur dioxide added at the crusher will become bound to acetaldehyde during fermentation. At the end of fermentation there will be little free SO_2 in the wine but there is always some residual acetaldehyde remaining. Many winemakers add 50 mg/l of sulfur dioxide when the fermentations have completed. But, about have of the added SO_2 will quickly combine with the residual acetaldehyde and become bound SO_2. The other half will remain in the wine as free SO_2.

Add about a pound or so of oak chips to red wine stored in old oak barrels. Loose chips will float for a few days and then settle to the bottom of the barrel. Taste the wine twice a month. If the wine gets excessively oakey, rack the wine off the chips. The oak taste will diminish significantly for two or three months after the chips are removed.

White and blush wines can be both hot and cold stabilized in a single processing step. First, add the Bentonite and stir well. Then turn on the refrigeration and cool the wine. A week or so at 32 degrees will stabilize most wines. Three or four weeks may be needed if the temperature is between 35 and 45 degrees. When the wine is stable, rack the cold wine into a clean container. But, cold wines oxidize easily, so the winemaker must be careful to not bubble or splash the wine excessively when the wine is racked.

Most filter pads need to be washed before they are used but placing wet pads in a filter press is difficult. So, put dry pads into the press but do not tighten the press plates. Then run a few gallons of clean water through the press to wash the pads.

Maintaining used empty barrels is difficult because the wine soaked into the wood can turn into vinegar and the barrel becomes contaminated with vinegar bacteria. Many small wineries avoid storing empty barrels by scheduling their bottling in July and August.

Bottling

To avoid extra expense, disappointment, frustration and colorful vocabulary, make sure all wines are clear **and** stable before they are bottled.

Minimize oxidation when bottling by not splashing or causing bubbles in the wine.

Dry, hard corks can be rehydrated by placing them in a clean, sealed, 5-gallon bucket with an open, glass container of strong, sulfite solution for a few weeks.

After filling and corking, the bottles should be stored points up to avoid leakage. Pressure is produced when the cork is driven and storing points up for a week or two will allow the pressure to dissipate. After the pressure has equalized, the bottles can be stored on their sides or upside down if desired.

Measure the free sulfur dioxide just before bottling. After two or three weeks, test a bottle again for free SO_2 content. The difference between the two measurements can give an indication of how much SO_2 is lost during the bottling operation.

Make or order a few extra labels. Paste labels on the cardboard cases to identify the contents. The labels will give the cased goods a nice professional look.