

Grapes: Can You Make Champagne at Home?

(Number 17 in a series of highly opinionated articles about grapes and wine in El Dorado County)

With the (one-year-early) millennium celebration just behind us, there are quite a few lessons we learned: the world as we know it didn't end, the power didn't go off forever, most people preferred to stay home and fall asleep on the couch instead of paying \$400.00 for a hotel room, and there was enough sparkling wine to go around, after all! But what if you someday wanted to make your own sparkling wine at home? Is it as hard as you've read? Do you have to wait years to drink it? Do you have to twist the bottles in a secret way for weeks on end? Do you have to get yeast all over yourself and your house?

Tiny Bubbles

There is a delightful (and possibly true) story about a blind monk named Dom Perignon, who possessed a legendary palate, and could taste subtle flavors in wine that none of his sighted brethren could detect. One springtime, when the cellar began to warm up, the wine that had been bottled during the winter started to ferment again. The monks brought a bottle of the fizzy wine to their celebrated brother, who sampled it, then remarked "I am drinking the stars!" We all know the reasons sparkling wine is sought after—it's fresh, bubbly, tasty and festive. But the real reason it's made in the Champagne region of Northern France: the grapes don't get ripe! Champagne grapes are picked at about 19-21% sugar (usually what we see in August of a normal year), and usually at much higher acid content than ripe grapes. And while there are restrictions on what grapes are allowed in the French stuff, the truth is that, at low sugar content, there's less difference among grape varieties. So, even if your grapes fail to get ripe, you can use them (red, white or indifferent) to make your own sparkling wine at home.

Double, Double, Toil and Trouble

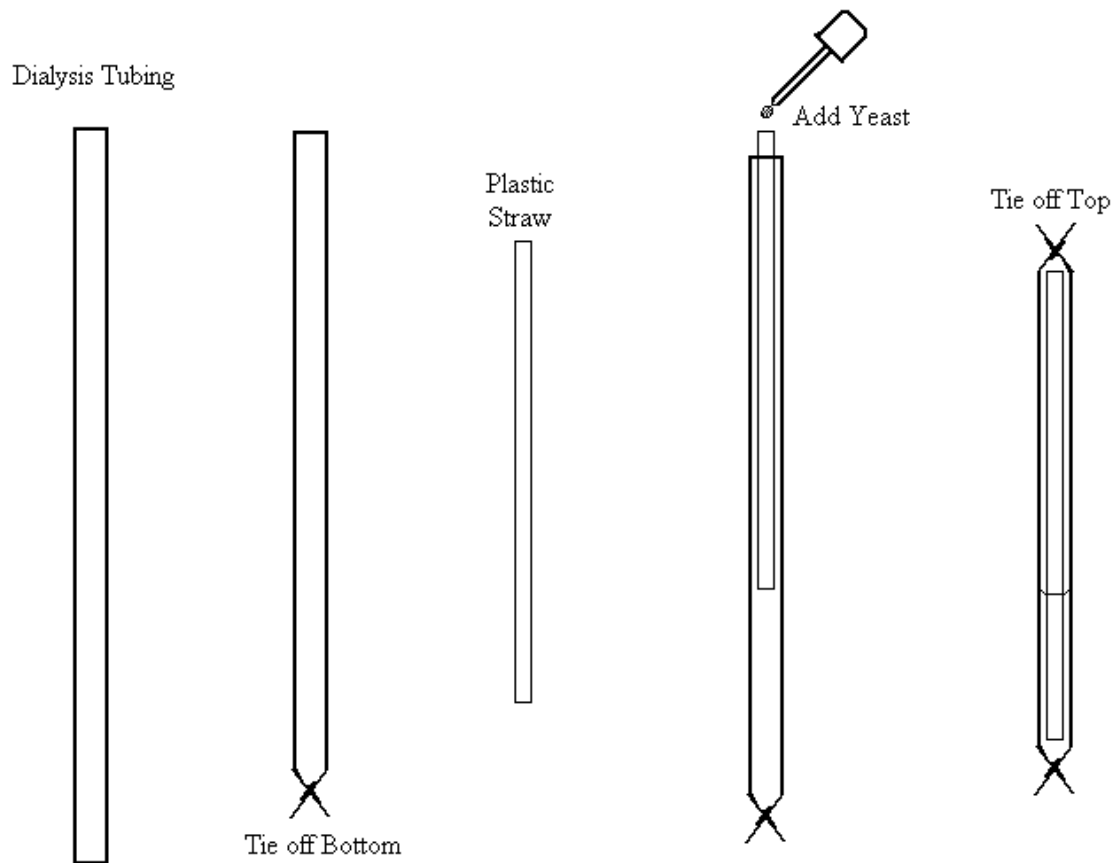
Almost everyone has read, at one time or another, of the tremendous difficulty involved in champagne making, and for the sake of completeness, we'll summarize the old-fashioned way. First, you ferment the grape juice like any white wine (that is, the grapes are crushed and immediately pressed), and allow the wine to settle and clear completely. Next, you place the wine in champagne bottles that are made to withstand the pressure, add a small amount of sugar to cause a second fermentation inside the bottle, and place a "crown" cap (ordinary beer bottle cap) on the bottle. After a short time, the fermentation will be complete, and the champagne is ready to drink with two exceptions: first, there is *absolutely* no sugar left in the wine (and with the extremely tart grapes that were used, some people have compared tasting unsweetened champagne to licking dry windowpanes); and second, there is a whole lot of yeast and sediment inside the bottle. The process of removing the sediment and adding the sugar is where all the work and lore of champagne making comes in.

The Shakedown

To get the sediment out of the bottle, a ritual has been established called “riddling,” where the bottle is rotated and slowly tipped upside down (over several weeks) so the solids will collect on the bottle cap. The tip of the bottle can then be immersed in a freezing brine solution to freeze a plug of ice in the neck. Then all you have to do is set the bottle upright and pop the cap off to allow the pressure in the bottle to blow a very messy plug of icy yeast all over the room (the term “disgorging” is aptly named!). After that, you add the correct amount of sugar to sweeten the wine, insert one of those ‘mushroom’ corks, wire it down, and enjoy it sometime after you finish cleaning up the mess.

Technology to the Rescue

But wait! There’s a better way! Thanks to cellophane dialysis tubing (the kind used for laboratory work, not kidney dialysis), you can make champagne without the fuss! The beauty of these membranes is that they allow small molecules (like sugar and alcohol) to pass across, while keeping larger particles (like proteins and yeast cells) inside. So, if you add yeast to the inside of the tubing, the sugar can pass inside, get converted to alcohol, and return to the liquid outside the tubing, while all the messy stuff stays in a clean, sealed tube. When it’s time to drink the champagne, simply chill, remove the cap and pull out the tube with all the yeast, enzymes and residue inside. Here’s what it looks like:



Tubing can be obtained from A. Daigger & Company (800-621-7193, www.daigger.com), catalog # CX6280B. It's about \$80.00 for 100 feet, but it only adds eighty cents per bottle of champagne. Prepare a yeast suspension by adding a five-gram package of champagne yeast to two ounces of lukewarm water (not over 100° F), and stir in 1/8 teaspoon of a yeast nutrient such as Ferm-aid or Yeastex. Next, you have to soak the tubing for a time in hot water (the directions are included in the package), then cut the now-flexible tubing into lengths of about twelve inches. Tie off one end with a simple knot, insert a plastic soda straw cut to about five inches long, add one medicine dropper of the yeast suspension (being very careful not to get *any* on the outside of the tubing—a single yeast cell on the outside will reproduce vigorously), and tie off the top of the tubing. Adding the yeast to the inside of the straw helps to insure that none gets on the outside.

Fill a champagne bottle with your wine, and add no more than three level teaspoons of sugar. This will give you a pressure in the bottle of 75 pounds per square inch, about right for champagne. (CAUTION!—Additional sugar can raise the pressure dangerously and turn the bottle into a glass grenade). Insert the tied-off tubing, cap the bottle with a crown cap, and shake vigorously until the sugar is dissolved. Store the bottle on its side in a safe place (once in a while, bottles will have a crack and leak, or even worse, explode).

Wine Preparation

Because this wine needs to be free of both yeast and the enzymes that cause the fermentation, you'll need to give it a bentonite treatment. First, make sure the wine has stopped fermenting, and use fining or filtering techniques to clarify it. Using an easily-dispersed form of bentonite such as Vita-Ben or Krystal Klear Kwik, vigorously stir about two teaspoons for each five gallons of wine into a cup of cold water, then stir vigorously into the wine. Allow it to sit for a week or two, then carefully siphon off the clear wine above the sediment. Also, be careful not to use too much sulfite during processing; it will inhibit the yeast growth for the second fermentation in the bottle.

The Finish

After the fermentation is complete (weeks or months, depending on the state of the wine and the mood of the wine gods) you're ready to try the wine, but you'll probably want to add a little sugar before you do. First, chill the wine down as cold as you can (you can safely go to 25° F, but don't leave the bottle in the freezer for over an hour!), then dissolve a teaspoon or two of sugar in half an ounce of water, and chill it down also before adding it to the champagne (failure to chill both the wine and the sugar solution can result in almost all of the wine foaming out of the bottle). Point the bottle away from everyone, gently pry off the cap, pull out the cellophane tube (if it swells up and is hard to remove, puncture the tip with a knife) then tilt the bottle at about a 30° angle and pour the sugar solution down the side of the bottle to minimize foaming. Cap with a plastic champagne stopper, and hold the stopper in while you gently invert the bottle a few times to mix the sugar. Carefully remove the stopper, pour and prepare to receive the accolades due a modern champagne producer. Be sure to label the bottle with a properly self-congratulatory message such as "Chateau des Jonses, Sparkling Chardonnay Wine, Meticulously Hand-crafted in this Very Bottle, Appellation Fair Play Controllee"

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