

Grapes: How Do You Know When to Pick?

(Number 16 in a series of highly opinionated articles about grapes and wine in El Dorado County)

As the growing season draws to a close, nervous vineyardists and vintners alike begin prowling the vineyards, looking for signs of ripeness. It's not a very difficult process, but it does require a little training and experience to make good estimates. The reason is that vineyards ripen unevenly, from end to end and side to side, just as the grapes on any given vine can show considerable variation from one cluster to another and even within the same cluster. How can you reliably tell when the grapes are "just right" for the fussy winemaker who buys them?

Taking a Sample

There are almost as many vineyard sampling techniques as there are religions (and arguments over which is best get almost as heated), but the essence of sampling is to wind up with a small amount of grapes that will accurately represent the degree of ripeness of an entire vineyard or one section of it. It's less of an issue for grapes grown on flat land like the Central Valley, where each vine gets exactly the same amount of sun, soil and water. In areas like ours, however, where variations in soil depth, topology and exposure can cause major differences over the space of just a few yards, sampling techniques are much more critical.

The two main dogmas are called "berry sampling" and "cluster (bunch) sampling." Berry sampling has the advantage that you can bring back a hundred or so grapes in a plastic sandwich bag (clipped open at the belt to leave both hands free), but even proponents admit that it's hard to get at the berries *inside* the cluster where they are usually less ripe. The majority now use cluster sampling, even though it means schlepping a heavy bucket of grapes around the vineyard.

To do a good job of cluster sampling, you need to get clusters that reflect the variations between and within vines. The first chore is to cover the entire area without walking every inch of the vineyard (with rows ten feet apart, you would have to walk almost a mile for each acre if you went down every row!). The best way to do this is to decide roughly how many clusters you need and put together a sampling plan that covers the area. On average, a five-gallon bucket contains about twenty pounds of grapes, and many people agree that this is a fair sample for a five-acre vineyard. If you're sampling zinfandel, with half-pound clusters, forty clusters will fill the bucket; with smaller clusters like cabernet sauvignon has, you'll need to plan for about eighty.

Pacing It Out

In a five-acre field with 6' by 10' vine spacing (about 750 vines per acre or 3,750 vines total), you could have fifty-five rows 400 feet long (or one hundred 220-foot-long rows), but up here you probably have some longer and some shorter rows, because of that great

big rock that the dozer couldn't budge and that rocky ledge that sticks up over on the far side. The first thing to do is to divide the clusters you need by the number of rows you have. Eighty clusters and forty rows would mean you need the equivalent of two clusters per row, and the non-exhausting way to collect them is to travel down perhaps five rows, picking sixteen clusters each row. For convenience in estimating, assume the row is 400 feet long, so you would divide 400 by 16 to tell you that you would need to stop every twenty-five feet (or every four vines for six-foot plant spacing in the row). Since you need to sample both sides of the vine (they often get different amounts of sun), it would be better to stop every eight vines and pick one cluster from the left side and one from the right. Of course, your vineyard is different, but using these techniques you can pretty quickly calculate how many rows to walk down and about how often to stop. Just remember to spread the sampled rows out evenly over the vineyard, so you get grapes from the entire area.

Randomness is the Key

The part of sampling that requires the most discipline is selecting a cluster from the vine. You have to remember that your purpose is to represent the *average* of the vineyard, and for that you have to truly randomize your sample. It's hard, because your eye is always drawn to the pretty cluster right in front, but you have to grit your teeth and pick one from the front, another from the back, one from the middle of the cordon (the branch that the shoots grow from) and yet another from the end. Some people even go further than this by actually reaching *behind* them and taking the first cluster they feel, so they can't see what they're picking (taking a sample in the dark is ideal, but carries its own set of hazards). Just remember not to take the first bunch you see, but vary the location, the vigor, the color and any other differences that exist among the clusters.

Making the Measurement

Once you get your bucket of grapes back to a cool spot, the next trick is to crush the berries and separate out the juice for measurement. Some people like to pull the berries off the stems, others just squeeze the whole cluster to break the skins and release the juice. It's just as important, though, to get the juice from every berry as it was to select an accurate sample of clusters, and that means you should squeeze all those little hard green ones as well as any raisins. Once the berries have all been "squished" and the juice mixed, you can pour off a few ounces for a complete battery of tests, or just pick up a few drops for the quick check described below.

The most important measurement of how ripe the grapes are is percent sugar, or in the winemaker's vernacular, "degrees brix" (pronounced 'bricks'), and the easiest way to do that is to use a 'refractometer,' or a device that measures the bending of light rays by a liquid. A stick partially underwater appears to bend at the surface, and the more solids are dissolved in the water, the more the light is bent (or 'refracted'), and the higher the reading on the refractometer. All that's required is to place a few drops of juice onto the device, hold it up to the light, and look to see where the color changes on the numbered scale. These devices used to cost as much as \$400, but an inexpensive unit can now be

bought for as little as \$100. You should consider spending the extra \$20 (Model WRF-ATC instead of Model WRF, from Presque Isle Wine Cellars, 800-488-7492) to get one with Automatic Temperature Calibration, instead of having to look up on a chart to correct for temperature differences. Just remember, no matter how tempting it is to simply take the refractometer out in the vineyard and squeeze a few berries onto it, you are unlikely to get an accurate sugar number unless you complete the entire sampling process.

The alternative, which costs a great deal less (\$10 will buy both the device and a container from any home winemaking supply store) and works almost as well, is to use a hydrometer. This is a calibrated piece of glassware that floats in the juice, and the more sugar the juice has, the more dense it is, and the higher the hydrometer floats. All you have to do is look across the surface of the juice and note the reading on the stem where it emerges from the liquid. The disadvantage is that it requires a few ounces of juice, rather than a few drops for the refractometer. Overachievers may also want to measure the acidity of the juice (it *drops* as the sugar increases), and the pH. These require a little more equipment and technique, but are not too difficult for the technically adept (if you really like it, you can sign up for the U.C.Davis Extension course called “Introduction to Wine Analysis, 800-752-0881).

My experience, regardless of the measurement technique is used, is that the sugar measurement of your sample will generally be about one percent higher than the entire field of grapes will show when it’s crushed and in the winery’s tank. Whether this is due to some lack of randomness or slight bias on the part of the sampler, or to just the general cussedness of things is not clear. Your mileage may vary.

The Benefits

If you follow a process like this and keep written records, you will soon get an idea of how quickly the vineyard ripens (usually about ½-2% sugar per week with favorable September temperatures), and how to better estimate the picking date. If you sample different areas of the field separately, you can get a good idea which ones ripen first so you can “stage” the picking when necessary. Remember, also, that you should taste the grapes as you go through the vineyard, so you can develop a taste for truly ripe grapes. As full ripeness approaches, the juice from your sample becomes more delicious than anything Welch’s ever put in a bottle, so be sure to share it with those “friends” who never thought your grape growing would produce anything good!

And, if you save the one gallon of juice you get from each twenty-pound sample, you can practice your winemaking skills so that someday you can have a winery and depend for your livelihood on your sampling skills.