When do you harvest wine grapes?

There are many aspects of grape maturity that determine the best time to harvest wine grapes. Some of these are quantitative and can be determined to a high degree of numerical accuracy, and others are qualitative and are more subjective. There is also a wide variance of maturity time from one varietal to another.

Chardonnay and Pinot Noir are early ripening grape varieties, and are among the first grapes picked each year. Cabernet Sauvignon, Merlot and Sangiovese are late varieties and are among the last grape varieties picked. In the Napa Valley, the crush usually starts in mid August and ends in October. Harvest times vary from year to year. In early harvest years, the grapes are picked two or three weeks earlier than normal. In late years, grapes are often picked in late October. Consider the variance in harvest time for Morningside Vineyard Cabernet Sauvignon for the last four years: Oct 4, Oct 11, Sept 30 and Sept 13.

So, how do you know when grapes are ripe and ready to be picked? Ripe wine grapes are very perishable, and are at their best for just a few days. When to pick the grapes is such an important decision that most winemakers and grape growers start sampling grapes several weeks before harvest time and continue sampling with increasing frequency as harvest time approaches.

Qualitative indicators of grape maturity include appearance of the grapes including the color and firmness of the skins, the appearance of the stems, the color and taste of the seeds, the taste of the grapes and the condition of the vines and leaves. Current and expected weather conditions also play a roll in deciding when to pick. Following are some of the Qualitative evaluations growers and winemakers make:

> Soft Berries - Berries dehydrate slightly, and the texture of the pulp softens when grapes ripen. When red grapes are fully ripe, the berries feel less firm when squeezed and the skin becomes slightly slack but not wrinkled like a raisin.
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> Red Fruit Flavors - Under-ripe red grapes often have a green, herbaceous smell and taste reminiscent of asparagus or bell peppers. Ripe grapes have less of this green, herbaceous character and more plum and cherry characteristics.
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> Brown Seeds - The color of grape seeds changes from green to brown as the berries ripen. In most varieties, the pointed ends of the seeds (the “beaks”) are the last part to turn brown. Many experts feel 80 – 90% of the seeds should be brown before harvest.
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> A Clean Pedicel - When grapes are fully ripe, the pedicel (stem) can be pulled off the berry easily and little or no pulp or skin tissue will be attached to the pedicel.

Historically, sugar content was the primary indicator of grape ripeness, and many growers and winemakers still rely on sugar readings to decide when the grapes are ripe.

Consequently, obtaining accurate sugar measurements is important. Grape sugar content is usually measured in units of degrees **Brix**, and the measurement is made with a hydrometer or a hand-held, optical instrument called a refractometer.

> What is the definition and origin of the word Brix? Professor A. F. W. Brix was a 19th Century German chemist (b.1798, d.1890). He was the first to measure the density of plant juices by floating a hydrometer in them. The winemakers of Europe were concerned that they could not predict which of various grape juices would make the best wine. Being able to judge quality ahead of actual bottling was of immense importance in an industry where a bottle of the best wine might sell for hundreds of times more than a bottle of everyday wine. Professor Brix was greeted as a great hero when he emerged from his laboratory to claim his most generous prize. He was also honored by having the measuring process named after him.

- BRIX is a measure of the percent solids (TSS) in a given weight of plant juice---nothing more---and nothing less.
- BRIX is often expressed another way: BRIX equals the percentage of sucrose (i.e., sugar). But, "sucrose" can vary widely
- BRIX varies directly with plant QUALITY. For instance, a poor, sour tasting grape from worn out land can test 8 or less BRIX. On the other hand, a full flavored, delicious grape, grown on rich, fertile soil can test 24 or better BRIX. The higher the BRIX, the sweeter the taste. Sugar converts to alcohol in fermentation, so the higher the BRIX in the grapes, the higher the alcohol content in the wine.

Quantitative indicators include measurements of the actual chemistry of the grape itself. In addition to the measurement of Brix, they include the analysis of pH, and titratable acid (TA). These indicators are useful in determining if a wine is balanced. Our target for each of these measurements is: Brix: >24 ; TA .58 - .65 ; PH 3.4 – 3.6 .

One current subject of intense debate is “Hang Time” which clearly influences the harvest date. A growing number of winemakers want very ripe grapes with very high Brix (26 – 28). This is achieved by allowing the grapes to hang longer than what historically was considered a ripe point and produces the“Big and Bold” wines with high alcohols that are in favor with a growing number of wine critics and winemakers. Some feel this is done at the sacrifice of flavor. Growers typically are unhappy about long hang time because the fruit dehydrates and they earn less and they also feel it damages the vines. This is an ongoing issue that will be debated well into the future.

To summarize, ripeness is in the eye of the beholder and can vary considerably from year to year and from winemaker to grower. There have been numerous studies to determine a more precise index of ripeness, but it is unlikely that there will ever be a single set of

numbers that define ripeness for a particular grape variety under all circumstances and for all purposes. Ripeness is really defined by the individual, whether grape grower or winemaker, and it is primarily a function of the intended use for the grapes. While scientific, quantitative measures can be made, taste and judgment ultimately determine when it is time to pick the grapes.