

What is tannin? And what's it doing in your wine?



As soon as red grapes are crushed to make wine, they release an abundance of tannin into the wine from their skins, stems and seeds. (Gerald Hoberman, Getty)

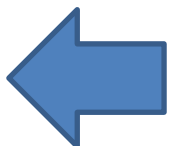
By **Bill St. John**
contact the reporter

February 9, 2015

Michael Twelftree, the proprietor and managing director of Two Hands Wines in Australia's Barossa Valley, describes the experience of tasting a red wine this way: "The fruit is the engine and railcars; the acidity is the rails; and the tannins are the brakes."

When we sip many a red wine, their tannins draw the taste to a close with an astringent, palate-puckering sensation. It's as if our tongue were sandpapered.

"Tannins don't have flavor," says Joel Aiken, winemaker for Amici Cellars and Aiken Wines. "They're tactile."



Tannins are phenols; in wine they come from the skins, seeds and stems of the grapes. That's why they are more prevalent in red wines than whites; red wines get their color from their grapes' skins during fermentation.

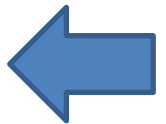
(White wines have tannin too, but it's far less perceptible in them because the tannin level is so low.)

You're familiar with tannins even if you're not familiar with red wine. They make oversteeped tea bitter and astringent; they're what scrunches up your tongue if you chew too long on a Popsicle stick or wooden toothpick. They make walnut skin, raw eggplant and green olives rough and drying in your mouth.

And they are absolutely crucial to grapes growing up successfully on the vine, and to wine both being made and being appreciated, especially over time.

"Tannin, organically, is a deterrent to organisms (such as birds or animals) that would go after the fruit before it's ripened in its time," says Chris Carpenter, winemaker for La Jota Vineyard Co. in Napa Valley. "But, from a structural angle, they're the true backbone of the wine. As much or more, even, than the concentration of fruit, they give a wine weight, chewiness and texture. You don't get that with any other beverage."

"They add a lot more to a wine than just bitterness or astringency," adds Aiken, "They give the wine body."



Tannin is also crucial to the aging of red wine. Because tannins are antioxidants, "they help preserve the fruit character of a wine over time," says Carpenter.

Tannins begin life in red wine as short-chain molecules, but over time polymerize or plasticize into long-chain molecules. They're like Tinkertoys; when young, a couple "spools," one dowel between them. As they age, these same molecules are chemically attracted to and bind to each other so that, later, they are many spools held together by several dowels.

Short-chain tannin molecules are more tactilely aggressive than long-chain molecules. In a manner of thinking, the bigger molecules cannot "fit" into the places on your palate where you sense touch. Long-chain tannins simply glide over your palate, and the wine

seems smoother, softer and richer than when it was young and its short-chain tannin molecules could easily, tactilely attack those same sensory locales.

On opening a bottle of red wine, anyone can speed along this process by aerating or decanting the wine a couple of hours before it's served. "When you decant, you cause an early polymerization," says Carpenter. "You are binding those tannins; the bigger they become, the less they can be perceived."

Tannin also plays a key role at the table. Tannins, by their very nature, react or interact with proteins and fats in animal or fish meats, or in the oils and fats of other foods.

Long ago, when people wanted to soften buffalo or other animal hides so they could make moccasins, skirts, pants or housing material, they would tan the hides with tannin, obtained from the bark of trees (Latin, *tannum*, oak bark). The tannin bound with the protein of the hide and altered it, softening it and making it malleable.

Without tanning, hides would have become a sort of leather plywood.

When you eat a piece of steak with a rind of fat on it, and sip a tannic cabernet sauvignon, the tannin binds with the blood protein and the fat and causes them to seem less fatty, as they in turn bind with the tannin to make it seem less astringent or bitter.

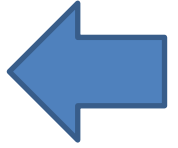
A tannery in everyone's mouth at Morton's, Gibson's, Lawry's and Benny's.

Not only meat eaters benefit from this interaction; it works with any fat or oil, vegetable-based or otherwise, and any other protein like the casein found in cheese.

Here are some laudatory notes on one each of Aiken's and Carpenter's wines, far above in price what I usually write about, but nonetheless terrifically delicious examples of tannin extraction and management.

2011 Mt. Brave Merlot, Mt. Veeder, Napa Valley, Calif.: So nice to taste top-tier merlot, bobbing as it does in a sea of the mediocre (albeit at lower cost). You know it's merlot because no other red wine is this plush (in fruit and tannin both), seductively tactile, caressing and "sweet." Enormous concentration of flavor and fruit, but still pillow-like plumpness and softness. **\$75**

2010 Amici Cellars Cabernet Sauvignon, Morisoli Vineyard, Rutherford, Napa Valley, Calif.: A fleeting scent of "Rutherford dust" in the aroma gives way to cabernet-cassis, black earth minerals, cocoa, espresso and wafting wood tones. Aiken uses a method of integrating oak and grape tannins wherein he rotates oak barrels in a so-called hot room (80 degrees) for 40-60 days. The different tannins, from wine and wood both, "begin complexing with each other," he says. Here's a cabernet with terrific finesse and elegance, without suffering fruit or concentration. **\$125-\$140**



Bill St. John has been writing and teaching about wine for more than 40 years.