Snow on Wine

"Rack and Riddle - How to Leave the LEES"

Dr. Jeff Snow
Education Director
October 2021

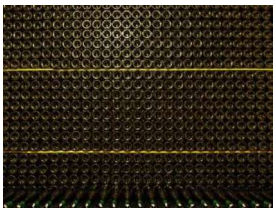
Sometimes, when tasting at a winery, or when reading the *back label* on a wine bottle (as Jeff always does), we encounter some arcane words which are unique to the wine industry. Haven't you sometimes ***RACKED*** your brain trying to figure out the ***RIDDLE*** of what it all means? If it can tell us about how the wine will smell and taste – that's the important stuff we all want – right? This August, at the special SES Robert Karl tasting, owner Rebecca Gunselman carefully explained what winemakers mean by ***RACKING*** wine. SES members were listening intently and learning! Clearly the SES Education Director (ahem), had overlooked writing on ***RACKING***; it is exactly moving a cuvee (or batch) of wine from one container to another. Wine from barrels may be **racked** into a tank for blending, or after primary fermentation, **racked** into barrels for aging, and so on. And then ***LEES*** was explained; it's the ***dead yeast beasties*** which settle at the bottom of the fermentation container when the alcohol level gets high enough to kill them (yeah, too much alcohol can kill ya'). Two places where Chardonnay (and sometimes Pinot Noir and Pinot Menuoir) rest on their ***LEES*** which are at end of Barrel Fermentation (primary), and in the Bottle Fermentation (secondary) stage of making sparkling wine using "Methode Traditionelle," (formerly called "Methode Champenoise" – changed to appease the "European Union" and Champenoise). They **is** the same thing.

To really understand why folks "deeply steeped in wine" talk about ***LEES,*** mostly when discussing ***CHARDONNAY,*** with ***BARREL AGING,*** or in ***METHODE TRADITIONELLE*** sparkling wine and not with other barrel aged wine, and not with sparkling wine like Prosecco, lets delve a bit into what makes those two situations and Chardonnay special and a bit different from all other red wine, rose' and most other white wine.

But first a wee little brush-up on the basics of Primary Fermentation. It begins when yeast beasties (Saccharomyces Cerevisiae) encounter the sugar from the grape, converting it into Carbon Dioxide (CO_2) and Alcohol (EtOH); for white wine, encounter the sugar only from the juice, previously pressed off of the skins. For Red and Rose' crushed grapes (including skins) in their juice (called must). It is worth noting the juice of red grapes is essentially white or only faintly pink, the color being in the skin. With Rose', the must is ***RACKED*** off the skins when the first EtOH begins to dissolve just enough pigment from the skins (extraction) to give it a pink color. For Red, the skins remain in the must throughout primary fermentation, and often are left to soak for days or even weeks to increase extraction of flavor and color from the skins. Eventually wine is ***RACKED*** from the tank to barrels for aging (the ***LEES*** left behind), and the skins gently (or less gently) pressed to remove additional wine (press wine) which may be added back to the rest or kept separate (often a less desirable but cheaper wine – obviously not for a classy drinkers like us). So that is the refresher on basic Primary Fermentation, and with that said, lets get to the real story.

When winemakers use the Methode Traditional to make "blanc di blanc", Chardonnay is put through primary fermentation in a tank or vat. This new wine is ***RACKED*** off to be bottled, leaving the ***LEES*** on the bottom of the tank (no resting here). Several grams of new yeast plus some rock sugar to feed our dear yeast beasties are added to the bottle. Then the bottle is closed with a crimp cap (like on the top on Budweiser). Secondary yeast fermentation begins in the bottle. Carbon dioxide formed provides the "bubbles", the yeast dies and ***LEES*** settle in the bottle.

With Champagne, bottle aging 18 months on the ***LEES*** qualifies as "full flavor" and 3 years to reach "very good" flavor**.** The imparted flavors and mouth feel include richness, earthiness, and a toasty or fresh bread taste (which the French seem to uniformly relish). Finally, the bottles are tipped cap down and for several days rotated in quarter turns several times a day to collect the ***LEES*** in the neck of the bottle. A process called Remuage or ***RIDDLING.*** The bottle neck is immersed in liquid nitrogen, the crimp cap removed, the ice plug containing all the ***LEES*** is blown out by CO2 gas. The bottle is re-topped with finished Chardonnay wine, with some sugar to determine the sweetness level, and the cork and cage added.



Depending on your taste, you may want more or less ***LEES*** flavor, so the number of months "***RESTING ON THE LEES***" gives us a "heads-up". Some Americans are not fond of the taste of ***LEES***. They should stick to Prosecco or other sparkling wines made by the Charmat-Martmotti method, where secondary fermentation occurs not in bottle, but in large pressurized steel tanks and is immediately bottled without further aging, giving a crisp, clean, but simple taste. But for the French and Julie and I, that richness, and the toasty baking bread taste coming from resting on the lees, are a delight.

Chardonnay table wine is commonly made by Barrel Fermentation. We are not talking about the kind of Chardonnay fermented in tanks, which have crisp acid with apple and tropical fruit flavors. No, in Barrel Fermentation, Chardonnay juice pressed off the skins goes directly into barrels. There, in the barrel, Primary Fermentation occurs. The yeast eventually dies and becomes ***LEES*** in the barrel bottom. Usually the barrel is topped by a "water trap" which allows CO2 to bubble out while preventing oxygen or contamination getting in the barrel.

Some winemakers may actually periodically stir-up the *LEES* to promote flavor transfer. Dehlinger winery uses *"…native yeast in 60 gallon French oak barrels, where the wine ages for one year, acquiring supple texture and nuance from prolonged contact…"* with the ***LEES.*** They find nutty flavors like hazelnut and nutmeg. Of course the barrel itself also imparts additional vanilla like tones. And (it's complicated) additional secondary bacterial (not yeast) fermentation called Malo-Lactic Fermentation is usually also going as well, changing some or all of the sharp, apple-like acidity of Malic acid to the rich buttery tones of Lactic acid. Again, knowing your own taste for the flavor components imparted by ***LEES*** will help you choose between different bottlings representing shorter or longer aging on the ***LEES.***

So now you have solved the ***RIDDLE*** of resting on ***LEES***. No more ***RACKING*** your little wine sotted brain. But do not rest on your laurels here. Get out there and taste some Chardonnays and ask the Barista the length of ***LEES*** contact in barrel and (if the barista is very cute) engage her/him further discussing Malolactic Fermentation. Then, as research for the holidays, try some different sparkling wines, first finding out the length of bottle aging on the ***LEES.***

Some of you, I know, will avoid the dead yeast beasties and go for Prosecco (right Eva?) or tank fermented Chardonnay.