



PRIMARY & SECONDARY FERMENTATION



While many beers can be brewed using primary or single-stage fermentation, many recipes can also be made using secondary fermentation. Beer does most of its fermenting in primary fermentation, but when you "rack" your beer a second time, fermentation will be faster and more complete; the beer will be clearer and there will be less sediment in the bottle; and finally, you can leave your beer to ferment much longer in the second stage since all of the inactive yeast was left behind in the first carboy.

Primary Fermentation

Primary fermentation is the process in which the yeast in your wort consumes the sugars and converts them into alcohol. As many of you already know, this is a fantastic thing indeed, as it is critical to producing those flavors we know and love.

After the initial (and most vigorous) phase of fermentation has subsided, however, particles settle at the bottom of the carboy. This sediment might include fragments of hops, undissolved sugars, bits of grain husk, etc. Most of the sediment will consist of dead yeast cells.

During the initial and most vigorous portion of the fermentation process, the yeast cells have a friendly environment with plenty of food (sugars), and as a result they breed quickly. As fermentation continues, the food will soon not be enough to support the large yeast population, and most of the yeast cells will die and begin to decay. These decaying cells will, over time, release undesirable byproducts which can have a very significant (and usually negative) impact on the flavor of the beer. Therefore, once you've determined that fermentation is complete, you should remove your beer from this environment as soon as possible.

Secondary Fermentation

Secondary fermentation is quite different from the initial fermenting process. It means that you are racking (transferring) the beer to another carboy--leaving dead yeast and sediment behind--so it can continue aging.

Why would you want to have a second stage of fermentation? Well, simply because you may not be ready to bottle your beer. Many homebrews are cloudy and hazy. Perhaps your beer is a more complex style, like a lager, and you want to develop the clarity, crispness, and overall character of your end product. Secondary fermentation, although it can complicate and certainly lengthen the brewing process, can have a dramatic impact on the quality and flavor of your beer.

Secondary fermentation is an open-ended process that can take anywhere from two to six weeks (and in some cases, much longer), so if you're anxious to drink your brew, this might not be the ideal route for you to take. Depending on the style you're brewing, a little bit (or maybe a lot) of extra time could be well worth it. Secondary fermentation can continue more or less indefinitely; many homebrewers have crafted their best beer simply by forgetting that it was in secondary.