

**In a nut shell:** The process involves drawing off and caramelizing 10 to 15% of the initial high gravity wort from your mash tun, then adding this thick caramelized syrup back to the brew kettle late in the boil and topping up the lost water with prepared brewing water (leftover sparge water). The thinking is that this adds a depth of caramel or toffee-like flavor to a brew that can be achieved no other way.

**First things first:** I considered that this process would greatly inhibit my ability to multi-task, for at least the first couple of hours of the brew day, simply because I don't want to screw up the most important portion of my wort and/or cause a major mess to clean up. For this reason, I was sure to take care of as many tasks as possible that typically draw my attention away from the brew house during that time frame. Things like setting up my wort line to the cellar, preparing the fermenter for sanitizing and running to the kitchen for another cup of coffee! I took care of as much of this stuff as possible while the mash water was heating up (I even filled my insulated coffee carafe! LOL)

**After the rest mash:** When it came time to draw off those first runnings of wort, I made sure to avoid adding hot strike water to the top of the grain bed, as I usually do. Instead I simply placed the wort collection bucket under the outlet hose and drained off 2 gallons of initial run off. The valve on the mash tun was flipped wide open to allow for a sudden, full-on flow of rich wort. My thinking was to set the grain bed nicely around the false bottom/drainage tubing. The goal is to (hopefully) form a tight filter bed for recirculating this first draw of wort. Note that no sparge water was added, to avoid thinning out the first runnings; the idea is to harvest high gravity wort for the reduction process. After recirculating this initial amount of wort back onto the top of the grain bed, a second 2 gallons of (much more clear) first runnings was collected. This is what was reduced to a condensed and caramelized "malt syrup".



**Move first runnings to large pot:** The reduction of this *first runnings* took a total of 75 minutes. This is not as long as I thought it would take, but I think the fact that I was doing this in a 15G flat-bottomed kettle AND the fact that I was doing it on a large propane burner (like one used for brewing 10 gallon batches of wort) really speeded things up! Regardless, it was important that I got moving on it FIRST, before I even began the normal sparging of my mash. A large pot is needed for this operation, with considerable head space to allow for lots aggressive boiling and thick foaming of the malt sugars. I had read that 2 to 3 gallons of first runnings might require something like a 10 to 12G pot, so I used my old 15G brew kettle, placed on my mash cooker burner (as it turned out, I could have used a much smaller pot I think). I fired up the burner but was careful to keep an eye on it. I figured once the heat was applied, I was now married to that kettle! For this reason, I found it particularly important to have the pot right there on my mash cooker burner, alongside my rest tun, so that while sparging my mash and doing other brew house chores, I could keep a close eye on things. Avoiding scorching and a boil over were/are the two primary concerns here! Let me repeat, avoiding scorching and a boil over are the two primary concerns! Once I had the wort boiling and could see how things were going, I realized I

could crank it up quite a lot and the wort behaved nicely (i.e. no hot break or horrible foaming took place). My big burner and over-sized kettle allowed me to bring things to a steady and substantial boil in about 10 minutes. The goal was to boil off excess water and thicken the wort. Note that there can be



no “carmelization” until the wort thickens and you begin to reach a “candy” stage whereby the wort gets hot enough to actually carmelize, and not just darken due to Maillard reactions. When I felt I was beyond that initial (potential) hot break foaming stage, I completed the sparging of my mash and moved my wort to the brew kettle as usual.

Remember....all while keeping one eye on that boiling wort! One thing to remember: I needed to save a couple of extra gallons of prepared brewing water (sparge water) for adding back to the kettle later. I also found that keeping this water HOT would come in handy later. As it turned out, my left over sparge water was “hot enough” but in the future I’ll make an effort to insulate it a bit, just to ensure it is hot enough. The idea is to use hot water to sort of “deglaze” the caramel pot after pouring off the initial syrup.

**Brewing while caramelizing:** Aside from watching that reduction kettle while sparging, recirculating,

pumping wort to the kettle and cleaning my equipment along the way, the hardest thing to do was to just sit there, wondering when I should actually fire my brew kettle and get on with brewing the bier. After all, I knew the caramelized wort needed to reduce to a fairly small volume, but how long would that take? There needed to be at least 15 minutes of boiling time remaining in the kettle when I added the syrup back in. Ultimately I was left to just watch the caramelizing wort and try to judge how much volume actually remained as I was reducing it. As a result, I think I delayed the firing of my brew kettle for about an hour. In retrospect, I could have delayed it by only a half hour or so and it would have been just fine, since it took just 75 minutes to reduce my first runnings to approximately 64oz. of dark, rich syrup. And once it was in fact a syrup, I began to constantly stir and scrape the syrup from the bottom of the pot to avoid scorching. I was constantly smelling for anything that might even hint at scorching and was ready to kill the flame immediately. My mash mixing paddle had a flat/square base, so I found this to be the perfect paddle for scraping/stirring my malt syrup. I just sort of pushed and pulled it across the bottom of my flat bottom kettle (non stop toward the end!) while trying not to splash too much.

**Adding back to the kettle:** I did find it somewhat difficult to know WHEN to stop reducing. I could only guess how much liquid remained in my caramelizing pot. I found myself periodically lifting one side of the pot and kind of swirling the dark syrup around as it was boiling. I could see it bubbling fiercely along the bottom of the kettle when I did this and doing this allowed me to see how thick it was becoming. At this point I took the temp of the syrup with my instant read *Thermopen*. I was surprised to see it read only 207F (where I live, the boil point is approx. 204F). I really thought it would be closer to the “candy” stage of 230F or higher. For this reason, I do not believe I actually “caramelized” this wort, rather than simply condensed it and supercharged the formation of Maillard compounds. At any rate, after 75 minutes of solid boiling, when I “guesstimated” that I had between between 3 or 4 pints of syrup in the

kettle, I killed the flame and (carefully) poured the hot syrup into a food grade bucket with measuring marks. When I found I had collected between 3 and 4 pints of syrup, I used 1 ½ G of hot sparge water to deglaze the pot (I wanted ALL of that precious syrup!). This was added to the brew kettle and topped up still further to my normal pre-boil volume of 13.5 G. I did notice when I added the hot syrup to my brew kettle, it wanted to foam. This could be that I had fired the kettle about 15 minutes earlier and things were starting to heat up. The added super-hot syrup really got things going, but luckily it did not foam out of the kettle. The remainder of the brew day went as planned and the rich mahogany-colored wort was clear as it flowed from the brew house down to the cellar.

**Summary:** This whole process was not all that difficult and I could certainly see where this could become an easily incorporated procedure for certain ales. That said, the jury is still out on whether or not this has its intended effect on the finished product (the ale is still fermenting as I write this). I will say that the lovely super-malty/toffee-like aroma stayed in my brew area for two full days. If the ale has even a hint of that when finally served, I'd say this would be a success!



