

## NEW STUFF by Greg Hackenberg

Now, if you recall, I've been extolling this sugar syrup in various shades and how it'd just be the bomb in your beer. I've given you the shortcut method and an overly wordy summation of my attempts at making this stuff, but I know you're really just dying to make some yourself.

First you need a pot. Regular stovetop job will do, but use one that will hold the heat. You will need a probe type thermometer with an alarm which you should have anyway, but this is the sort of thing you really need it for. You need water – tap is fine, an acid (citric or lactic) food grade lime (I ordered online, but “pickling lime” is the same thing) DAP (Brewstock) and sugar. I use the Demerara sold in the US as “Sugar in the Raw” available at most grocery stores. You will also need a SRM color scale for the lighter shades. The procedure is an amalgamation of several techniques and a lot of people's hard work. I'll pop in some sources at the end of this.

All my quantities are for 1lb of sugar and I will include notes on scaling up and down.

1lb Demerara type sugar; sucrose with a small amount of molasses

1 pint of water

½ cup corn syrup; dextrose helps to prevent crystallization and will add a roasty flavor

½ teaspoon Lactic acid at 88% (or equivalent of citric acid)

Set up. This can get messy. I put a sheet of newspaper next to the stove to catch the inevitable drips and globs of sugar. Also, spattering is an issue. I will lay some newspaper a few inches from the pot away from the flame (a fire extinguisher is always handy in my kitchen, as it should be in yours...it code) during the worst of it. Clean up is not so bad, hot water will take it right off.

Heat water to boiling and remove from the heat. Slowly add the sugar, corn syrup and DAP and allow it to dissolve. This will take a little while and you may not get it all. You can stir in the beginning until the mass of sugar is dissolved and the mixture can flow. At that point do not stir it again. When you've given up getting those last bits to dissolve add the acid and start heating it up to a boil. Here's the sugar dissolved and coming it up to boil.



The next step is cooking off most of the water. The mix will splatter and spit as the water is driven off. Control your heat to keep it to a minimum. When you get a good froth going, insert your probe...your thermometer probe...into the liquid and set the alarm for 240d. At this point ammonia from the DAP will start to off gas. This is normal and it will dissipate. At this point it is all about chemistry, flavor comes later. When you hit 240 and the alarm goes off, which should take about fifteen minutes, turn the heat down. Reset your alarm for 250d, and adjust the flame to stay right around 240. This will take some finesse.

Some notes on maintaining temperature. For me the solution seemed to go through long stretches of stability with only minor heat adjustments necessary, punctuated by spikes and swings in the temperature. I believe this may mark chemical changes in the solution. Be ready for them. The response of the sugar solution will be fairly slow. If you get too hot, add water by a teaspoon or two at a time and let the temperature settle in. The 250d alarm is just that, an alarm and your call to add some water to cool it back down. And do not stir! Stirring can cause the whole shebang to crystallize and means you need to add water, dissolve and start over.

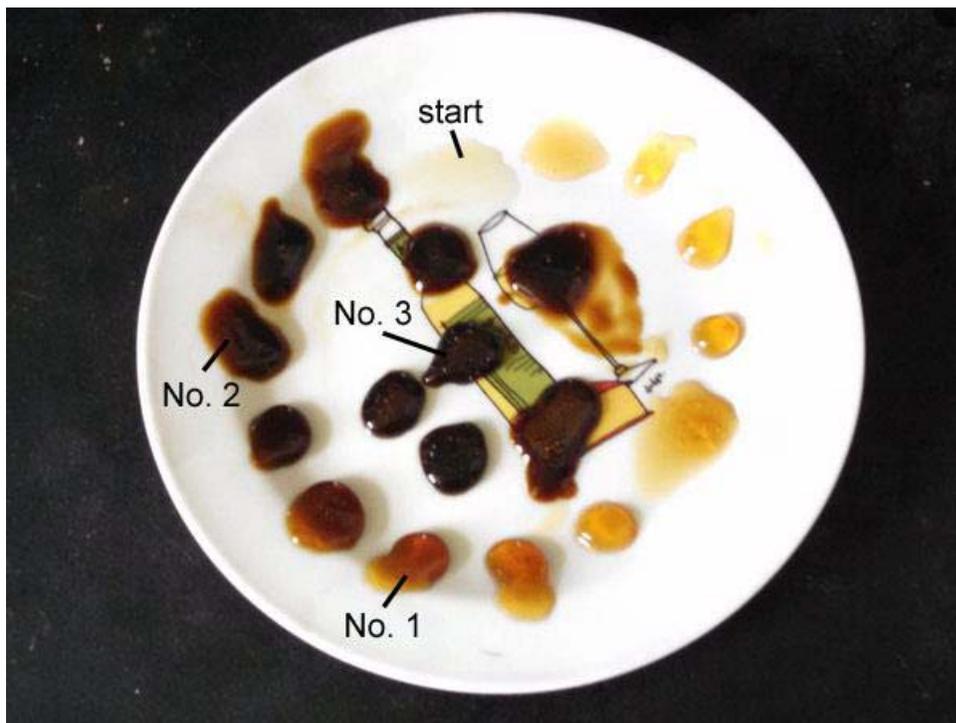
Once you've held this for 20 min. or so, you have completely inverted your syrup. Take a sample and drop onto a clean white plate. Check your SRM with a card or scale. You should be close to No. 1 at this point. For reference here are the colors you are shooting for. Aim slightly on the low side as the syrup will darken a bit more as it cools.

No1 12-16 SRM dark amber: Pale Ales

No2: 30-35 SRM dark brown: Old Ales, Milds and Porters

No3: 60-70 SRM shades of black: Porters and Stouts

Now dissolve your food grade lime as best you can in a teaspoon or two of water. Turn the heat up a notch and add the mix. Let the water cook off and stabilize at 240. If the lime did not dissolve all the way, it soon will. Take a sip of cool homebrew and don't worry. You are on your way. Start taking samples and checking the color at regular intervals and above all, the taste (let cool). The flavor development is pretty amazing. Here is my test plate, which spirals in to the center.



And here it is cooking away, past the No.1 range and well on its way to invert No. 2.



You want to get it a notch below your desired color you are done, as it will darken a bit further as it cools. When you are there, remove the pot from the heat and allow to cool. You may want to set it in a pan of water to help it along. Be careful, this stuff is volcanic and will cause serious burns if it gets on you. If spilled you have sugar coated whatever it lands on. Newspaper and oven mitts are your friend. My procedure is to use kitchen scales that can zero out. I use 1 pint mason jars, add  $\frac{1}{2}$  cup water, and zero out the weight. Then I pour in 1 lb of syrup. The water in the jar will boil up, but it will quickly settle down. Place the lid on loosely and set aside to fully cool. The added water cools it and keeps the final syrup a bit less viscous.

What I did, was start with 4 lbs of sugar. When it reached No. 1, I poured off two pounds and let the rest keep going. I poured of 2 lbs of No. 2 and finished off with a pound of the stuff seen in the dot in the middle of the sample plate, No. 3. Here is my whole set up with the last bit almost ready to pour off.



Scaling up, just double the amounts for all but the acid and lime. This is not linear as the water is cooked off. Use the full  $\frac{1}{2}$  for the first pound,  $\frac{1}{4}$  for the second pound,  $\frac{1}{8}$  or so for the third. So, really no more than a tsp of each for 5 pounds of sugar.

This is just the first steps in figuring this out. Next steps? You can adjust the flavors with using a portion of dextrose (corn sugar) in place of the Demerara. I have not tried it. pH testing along the way. I have not done any. I'd like to try, but to do it right, I'd need a pH meter and perhaps have a chemist along.

Have at it and let me know your results.