

Brewing with Extract

Beginning and advanced home brewers will find that brewing with extract is a fun and easy way to make beer. It's also much quicker than the traditional all-grain manner of brewing.

Equipment

You will need:

- One 2.5 gallon (10 quart) pot or, preferably, a 7 gallon (28 qt.) stock-pot
- One propane burner, or your kitchen stove for the smaller pot
- One long spoon (18-24 inches)
- One Hydrometer
- One Thermometer (floating makes it easy, but is not necessary)
- One measuring cylinder
- One 6 gallon fermentation device (Food Grade plastic bucket with lid or glass carboy)
- One bung and one-way release valve pertinent to your ferm device
- One ingredient kit (malt extract, hops, yeast, etc.)

Part 1- Creating the Wort

When you brew, what you are doing is creating a liquid mixture of fermentable and non-fermentable sugars. Your fermentable sugars will be fermented by the yeast and made into alcohol, while your non-fermentable sugars will stay to add things like body and other flavors. Great. Now that you understand the goal, let's begin. With extract, you can use either purified R.O. (Reverse Osmosis) water, or just your tap water. Extracts already have all the necessary minerals in them, so your water is not really an issue.

Step 1 is bringing your water to a boil. We will speak for a 7 gallon pot type of system, as doing it over the stove is only slightly different. Any special notes on that will be made clear. P.S.-now is when you want to put your yeast in your pocket to warm it up! Don't forget to crack the cap every hour or so to vent the CO2 that the waking yeast are producing!

As you are bringing your water to a boil, check your beer kit. If there are any steeping grains in it, now is the time to bag them up and throw them in. Some brewers like to wait until the water is boiling, then boil with their steeping grains, and either way fine, although leaving them in for the entire boil has some potential for some grainy off-flavors. Also, as the water heats, the enzymes will mash somewhat, which is what brewing is about! Think of making tea. If you don't take out the herbs in a few minutes, all of the flavor soaks out over time, and the mixture becomes bitter and a bit unpalatable. This is not exactly the same with steeping grains, but you get my point. What really matters is that you decide which way you like to do it and stick with it. That way, if you make your signature Brown Ale, you can follow your same steps and make it the same again... hopefully.

Once your water is boiling, turn off the heat, remove the steeping grains (or wait to put them in), and begin to stir in your extract with your long spoon. This is the fun part, and is pretty straight-forward. We always make a whirlpool, and would use that to stir everything together. You can't really mess this part up...

Once all of your extract containers are cleaned out, and the extract is completely dissolved in the water (make sure you get all of it off of the bottom of your boiling kettle!), turn the heat back on and bring it to a boil! With most extract batches, you will boil for 1 hour (60 minutes).

At this point you will want to organize all of your hop additions and, if you put your steeping grains in later, now is the perfect time. You'll want to have a stop-watch or at the very least a clock handy. Start your boil time when the water starts boiling, and measure from there.

HOP ADDITIONS

Your bittering hop additions are generally made within the first 15 minutes of boil (i.e. a 60 minute hop addition, etc) and most of your aroma hop additions come after that. To really get the hang of hop additions, you could always make the exact same beer three times and do three different hop additions each time, using the same hops, of course. This has the potential to give you a really good idea of different additions and flavors. For example, make a simple pale-ale recipe (try Jamil Zainasheff's recipe) and say, "Ok, batch one gets a half ounce at 60 minutes, 30 minutes, and flame out; batch two gets a half ounce at 50 minutes, 40 minutes, and 30 minutes..." etc. Come up with your own additions, but definitely use 60/30/15 as a starting point. So, organize your hop additions, throw them in a stretchy hop bag, and boil them in!

Cooling

After your boil, kill the heat and decide on your cooling method. There are plenty of ways to cool your beer. It is definitely good to cool faster, but I have met and tasted beer from brewers that finish their brew, cap their brew pot, and wait until it cools naturally. Although their beer is fantastic, in general this method is not recommended because of the risks of infection, but is still a possibility.

Many newer brewers also will cap their brew pot, carry it to their bathtub, and let it sit on ice. This takes the cooling period from 24-30 hours like naturally cooling it, to about 4, give or take. This method is less risky and inexpensive...just brew in the morning!!

From these basic methods, you can get a copper wort chiller, a wort chiller and pre-chiller, plate chillers, and finally the 5 minute cooling method using two pumps and re-circulated beer and ice water, originated by Jamil Zainasheff. These methods range from 1.5 hours to, of course, 5 minutes.

With a wort chiller, you are running cold water through the inside of twenty-five to a hundred feet of three-eighths inch copper tubing while it sits in your brew kettle. We also use a standard ice bucket full of frozen water bottles and water and one hundred and fifty feet of coiled garden hose inside of it as a pre-chiller. Remember, you can only cool as low as your cooling medium. So if you live in Phoenix, it is mid-summer, and you are cooling with your garden hose on your southward facing concrete porch against the house, you'll probably only get your beer down to 120 or so.

Fermentation

From here on out, you need to ensure that anything, including hands, feet, thermometers, etcetera, that goes into your wort is CLEAN and STERILE!! This is where many new brewers can pick up infections. Once you are cooled to your fermentation temperature (dependent upon yeast, etc. Usually about 68 degrees F for Ales), you need to rack your nice, cold wort out of the brew kettle and into your primary fermenter. So, 6 gallon plastic bucket, 6 gallon glass carboy, etc. Although it seems to be an extra step, what we do is pour SLOWLY out of the kettle, through a clean and sterile grain bag, and into a bucket with a spigot. This cleans out much of the debris left from the brew session, and gives an easy way to rack to the carboy. Of course, fermenting in a bucket, you'd be good to go! Just throw your yeast in first, and let the pour aerate them! We pitch the yeast into the clean and sterile carboy, then elevate the bucket and put the carboy right under the spout. While this is going,

we dip in our test cylinder, take the temp, and at 60 F put the hydrometer in to measure the Specific Gravity (Original Gravity or OG). This is the first of two readings to determine the alcohol content. The second reading is taken after fermentation. Quick, easy, and it helps to aerate the yeast as you get into your primary. As the wort pours into the carboy, it can also be good to rotate the carboy every now and again, creating a whirlpool to aerate even more. Once all the wort has been transferred, apply your freshly clean and sterilized one-way air valve with bung in the bung-hole, and you're ready!

Now that you're ready to ferment, you have options! Now, temperature control during fermentation is paramount, but it is also rough for beginning brewers, so we'll put down a few different methods of keeping your wort cool during fermentation.

First things first! Get the fish-tank thermometers with the adhesive backs! These are fantastic! I actually just re-use them, putting a swatch of see-through moving tape over them to tape them to whatever surface instead of the adhesive, but they're inexpensive. I put mine right in the middle of the bucket or carboy to monitor the temp. Also, keep your ferm device out of sunlight, and maybe in a corner of the house where the smell won't affect the significant other. Make sure you have a floor under it that is easily cleaned, or something under it like a plant pan or empty cat box, because fermenting beer can make quite a mess!

Ok, so your wort will heat up naturally during the process of fermentation due to yeast activity. The goal, in general, is to keep the balance between that heat and where you want your temp. Keep in mind that much of this is dependent upon ambient temperature, i.e. is it in your garage in the middle of a Northern Canadian winter, or outside on the porch facing south during a typical Alabama summer(P.S.-not a good idea! Sun kills yeast!)? You will have to tailor your technique to where your fermentation is going to happen. I'm thinking spare room in the closet, something along those lines.

One of the easiest ways to keep your wort cool is with wet towels and a fan. Just like it sounds- wet the towels, wrap the ferm device with them, and train the fan on it! Use towels that aren't the good, expensive bath towels that are your wife's favorites, though, because if you have a really active fermentation, they will get wet and extremely nasty!!

Another great method is with a temperature controlled fridge or chest freezer. Quite a bit more pricey, but once you get the wort in there and the temp gauge against or inside the ferm device, simply set the temp to 68 degrees, or whatever your ferment is, and you're solid gold!!

Heating your beer can be done with small space heaters pointed at the ferm device, or heating belts (Fermwrap belts). I have even seen a set up with a small space heater inside a temp controlled fridge!

From here, wait until the airlock stops bubbling, then wait two more days. Put your ferm device into a fridge if you can to get the temp to the high 30's, low 40's, and you are on to bottling and kegging!!

Please see our Bottling and Kegging sections in the How-to's on BrewChatter.com!!

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