

Steeping grains

What we are talking about here is steeping crystal malt (also known as caramalt) or roasted malts to extract the sugars, colors, flavors and aromas they contain—we are not talking about mashing, steeping is quicker and easier and temperature is nowhere near as important as with mashing.

Why steep grains? For kit or bulk extract brewers steeping grains is a way of adding color, flavor and aroma to their beers. Crystal/caramalts give a malty flavor while the dark grains (chocolate and dark malts and roast barley) give coffee-ish and roasty-toasty flavors to beers.

So, how do we steep these grains? The steeping process is simply mixing the grains well with water, letting the water/grain mix stand for a time then straining the liquid (wort) from the grain for eventually adding to the fermenter. How much water, what temperature to steep at and how long to steep depends on the type of grain. Basically we have hot steeping and cold steeping.

No matter what type of steeping is needed the procedure is the same. Place the required amount of water in a pan, slowly stir the grains into the steeping water then keep stirring until all the grains are wet. That is not as easy as it seems!

Grain and water do not mix well! The grain binds the water in a layer around a clump of grains. This water is bound and cannot wet the rest of the grain in the clump and the dry grains in the middle of this clump, called dry pocket or doughball, contribute *nothing* to your beer, no sugars, no flavors and no colors etc.

So to mix the grains properly add the grain slowly to the measured amount of steeping water then stir really well for at least ten minutes, making sure to break up all dry pockets and ensuring that *every grain is wet!*

So when and how do we decide if hot or cold steeping should be used? For the grains in Jovial Monk Series 2 Packs the label of the Pack will tell you. Otherwise, if you have crystal malt you can hot steep it while dark grains should be cold steeped.

*Steeping grains adds sugars colors and flavors, improving kit beers
Stir until all grains are wet, breaking up all doughballs/dry pockets*

Hot steeping

What grains can we hot steep? All crystal and cara malts but also the roasted malts known as Carafa Special malts. These dark malts have been milled after the roasting and all grain astringency and grain bitterness is removed by this milling.

Hot steeping does *not* mean boiling the grains! Steeping grains should *never ever* be boiled!

We start with three times as much water as grain by weight, e.g. 400g of grain should be mixed with 1.2L of water, 500g grain with 1.5L water. When water and grain are mixed it should look like a thin, watery porridge. Since we are hot steeping we need to do the mixing in a pan.

A thick-bottomed pan will ensure grains don't scorch very easily. Place the measured amount of water into this pan and place on low heat. Slowly pour the grains in stirring all the time then stir until all the grains are wet and the water-grain mix is at 65°C.

70°C is safe but over this may be too hot and result in harsh-tasting beer.

So we only have a narrow 5°C range where the mix is hot enough for the water to dissolve the sugars etc but not so hot we get a harsh flavor—a thermometer is pretty well essential. You can use one from a preserving outfit or buy one of the stainless steel backed thermometers of the kind I stock. These are cheap, sturdy, accurate and economical.

So stir the grains until the temperature reaches 65°C, making all grains are wet and none are scorched. We now need to leave our grain-water mix stand or 'rest' for 30 minutes, so when we reach 65°C put the lid on the pan and turn the heat off. By putting the lid on first before turning the heat off we get a nice "steam seal" assuming we chose a good pan with a well-fitting lid.

Insulate the pan by wrapping well with towels and teatowels etc and put it aside for thirty minutes—go and have lunch or dinner while it is steeping. In this time the water is getting into all parts of the grain dissolving the sugars etc and keeping all the sugars etc in solution.

At the end of the thirty minutes the wort created by the steeping needs to be separated from the grains. The easiest way is to simply pouring the water-grain mix into a sieve, just a normal sieve, held above another pan, usually one containing wort made by dissolving dry extract (e.g. from one of my Series 2 Packs.)

The more eager among you might, at this stage of proceedings, be anxious to extract the maximum amount of flavor and sugars etc. One that presents itself is *sparging*, pouring water over the grains in the sieve. I strongly recommend against this! Sparging with water too hot or too cold or with a bit too much water will extract astringency and tannins from the grains giving a harsh off-flavor to the beer.

Better is to put a square of muslin or cheesecloth (or if wifey is away a clean teatowel) into the sieve, then pouring in the grain-water mix, letting the wort run out then gathering the corners of the cloth twist them together so squeezing the grain mass and getting a bit more wort out.

Now, various brewbooks recommend putting the grains into a bag, slamming that into a pan of water and leaving the bag in until the water is boiling. Very bad idea! Firstly, you cannot properly stir grains contained in a bag. Secondly with all that water and a bit of grain the pH is wrong, encouraging the extraction of astringency as does the temperature of the water when it is over 70°C.

Needless to say "packs" where you boil extract and grain together are very unlikely to result in good, clean, tasty beer!

*Cara malts and Carafa Special grains can be hot steeped
Use three times as much water by weight as the grains
Heat mix to 65°C and let stand for 30 minutes
Squeeze the grains to extract more wort if wanted
but don't sparge*

Cold steeping

Cold steeping is necessary with dark, roasted grains such as chocolate malt, black patent malt and roasted barley, and roasted rye and wheat malt. The German Carafa Special version of chocolate and black patent can, as we have Carafa version of roast barley so this must always be cold steeped.

Cold steeping, using water at room temperature, presents some challenges. Cold water cannot dissolve the sugars etc out the grain as quickly as hot water nor can it hold as much in solution. So we use more water and leave the grains steeping for longer.

For cold steeping we use five times as much water by weight as the grain, 2.5L cold water for 500g of grain. The water is just room temperature water, water out the cold water tap if using tap water—cold steeping does not mean using chilled water! We still add the grain slowly to the measured amount of water, stirring really well to ensure every grain is wet.

The water–grain mix is left to stand several hours—at least 6 hours or overnight. If doing this in warm weather you can cover the container holding the grain–water mix and placing it in the fridge if you are worried about bacteria growing in the mix. However, not even this is enough.

With cold steeping we *do* sparge the grain in the sieve. We need 100–150ml of 80°C water to sprinkle evenly over the grains in the sieve over the pan of other wort, washing out more sugars etc. The hot water is in the grain dissolving the sugars not dissolved during the period of the steep, then it is straight out the sieve so not in the grain long enough to extract astringency.

It is preferable to have a graduated measuring jug and thermometer but in an emergency a teacup of water 10 minutes off the boil can be used.

To make up for the inefficiency of a cold steep you can increase the amount of grain specified by a recipe by 10–15%.

Use five times as much water as grain

Let mixture steep at least six hours

Carefully sparge the dark grains to wash out more sugars and flavors etc

Note to mash brewers

Mash brewers normally would not hot steep grains, crystal malts being added directly to the mash tun. However, when brewing a really big beer by hot steeping specialty grains outside the mash tun space is made available for more base malt in the mash tun.

Mash brewers would cold steep chocolate etc malt. When nearly all the sparge water has been used up the dark grain is put into the mash tun and the last of the sparge water poured over the dark grain.

Even mash brewers can benefit from using the steeping methods discussed here.

