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Your First Mash!!

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If you have read the all grain brewing sections of most of the brewing books, they seem to do their best to intimidate you as to how the process is so difficult. I think they mostly do a dis-service to the brewing hobby. All grain brewing is a **very easy** process!!

One of the biggest reasons for the ease of grain brewing today is that the malted barley we use today is of top quality and **highly modified**. This means that there are less chemical reactions necessary to complete the conversion of starch to sugar in the malt (mash). This means less work for the brewer.

This handout is designed with the first time all-grain brewer in mind. It assumes you have never mashed before, but that you have made a few extract batches. This is a starting point for you. Make a few batches using this method, then read some additional articles, ask some questions of us in the store, and add to your knowledge base.

Equipment

To make a five gallon batch of all-grain beer you need some additional equipment that you didn't need to make extract beer. You can make these items or purchase them based on you personal needs. Here is the list

- **Boiling capacity of 7 gallons of liquid**. (you can use two pots!!)
- A **mashing/lautering vessel fitted with a screen on the bottom,** of minimum 7 gallon capacity, preferably insulated. This is what you used to strain the hot wort away from the grain. One of the simplest & least expensive is Phil's Phalse bottoms in a 7 gallon plastic bucket (under $40).
- **A wort chiller to force cool your wort**. I suggest a counter-flow chiller since it promotes better hot break sedimentation. An immersion chiller works well also.
- **A plastic bucket** to collect 7 gallons of wort while you are sparging.
- A **thermometer** that measures from 120° to 170°, with reasonable accuracy.

Can you add more? Yes, and you probably will, but you can start off simple and build from there. I will show you other items that will make brewing a little easier, and a little more fun. These are what I consider the minimum.

Let's brew it!

Start by choosing you recipe. Go simple to start with until you understand more. There are lots of recipes in print, and we will help you to pick one out. Mill your grain with a good roller mill and move on to the real excitement. We mill grain at no charge her at the store. For a five gallon batch you will typically use about 10 lb. of grain.

Start by gathering your equipment, and checking to see that it is in working condition. (ample propane, hoses, etc.) You do not want to be missing a crucial piece of equipment when you need it.

We will do a simple infusion mash today to start. It works well for most beers, and with today's grains, other mashing schedules are rarely necessary. This is the simplest mashing technique, and the fastest and easiest. Infusion mashing is used extensively in British ales.

Heat about 4 gallons of water to about 165°, and always have extra water available (some should be near a boil). Fill your mash tun with about 3 gallons of the 165° water, check the temperature, and adjust if necessary. Hold the false bottom down with a spoon if it floats. Then add your grain slowly, stirring as you pour in the grain. You want to avoid lumps and simply wet all the grain. Check your temperature again. Your target temperature is 152° for this batch. Add boiling water if too cold, tap water if too hot. It is very easy to lower the temperature, very hard to raise the temperature. You will be holding the 152° temperature for typically 60 minutes. Lower temperatures (148°-152°) give you a more fermentable wort, Higher temperatures (155°-158°) give you a less fermentable wort. Check the temp in about 10 minutes, and adjust if necessary. The mash temperature tends to drop a bit the first few minutes as the grain absorbs the water, and then it stabilizes, and may even raise a bit due to the enzyme reaction. In any case, don't sweat it if the temp drops a degree or two. It will have only minor effects on your beer.

When your mash at 152° is done, you then add enough boiling water to reach 170° to 175° in preparation to begin your runoff. **(If your bucket has no more room to add hot water, you can remove about 1/3 of the grain and water and bring it to a boil and then mix back in the mash)** Open your spigot, and slowly collect the first few quarts. Your grain husks and malt pieces will begin to settle and set a filter bed. **You do not want to stir after this point**. The first few quarts will be cloudy and have more of the small grain pieces, so you should recirculate these few quarts back into your mash gently so you don't dig holes in the mash bed (I place a plastic lid from one of the 7 Lb malt syrup buckets, and pour the wort or water onto the lid) Then continue to draw out wort at the rate of about 1 gallon per 5 minutes (faster may result in less sugar extracted). You will need to collect about 7 gallons of hot wort. You want to continue to add sparge water to the top so that your mash bed always has about ½" to 1" of water above the top of the grain. If you let the

mash bed run low, a stuck mash can occur. You want to stop sparging if the specific gravity of the runoff drops below 1.010 (temp adjusted).

You now have collected your 7 gallons of wort. Transfer the wort to your boiling kettle and begin the boil. Boil 45 minutes or longer with hops as per your recipe. The longer you boil, the more hop bitterness you extract. ***Because you are boiling 7 gallons, with a much lower specific gravity (sugar density),You will extract more hop bitterness per ounce of hop boiled, and you will normally uses less hops to get the same level of bitterness that you used when you boiled only 2 to 3 gallons***. This is also the time to add Irish moss.

When your boil is complete, you need to force cool your beer. I like to transfer the beer to a 7-gallon bucket with a spigot. Here I whirlpool the beer to cause the hot break to move to the center of the bucket, and draw the hot beer out the side and through the wort chiller into the sterilized carboy. I aerate the wort in the carboy while it is being filled, pitch my yeast and clean up.

Fermenting is the same as with extract batches.