



## All-grain Brewing

Brewing beer by the all-grain method offers at least two advantages. The first advantage is that all-grain brewing is cheaper than extract or partial-mash brewing. Secondly, brewing with grains instead of extracts allows the brewer to achieve certain complexities that are not possible otherwise. However, because the brewer is using raw ingredients, the process is longer and more detail oriented. Don't let this be discouraging—once a brewer becomes accustomed to all-grain brewing, the process will seem as easy as extract brewing. Other activities can fill the gaps in the brewing time such as grilling, cheese making, or planning your next recipe.

Additional equipment needed:

- Mash/lauter tun
- 10-gallon brew pot
- A second pot for heating up mash and sparge water
- Wort chiller (immersion or counter-flow)
- Propane burner (recommended)

## The Process

1. Heat up mash strike water, crush the grains (if not already crushed), and pre-warm the mash tun.
2. In an alternating fashion, add grain and strike water to the mash tun while stirring well to prevent any clumping or dry spots from forming. Add any chemical adjustments at this time.
3. Once the mash temperature is achieved, seal the mash tun and let rest for 1 hour. Determine the amount of sparge water needed and begin heating it up at this time.

*Are you batch sparging?*

*Follow these two steps, then continue on to step 6.*

4. Add sparge water to the mash tun (this can be broken into multiple additions if the mash tun is not large enough).
5. After the sparge water has been added, begin recirculating the wort. Recirculate until the wort runs clear with no grain particles passing through, and record the specific gravity of wort as it runs off.

*Are you fly sparging?*

*Follow these two steps, then continue on with step 6.*

4. Recirculate the wort until the it runs clear with no grain particles passing through. Once recirculation is complete, begin slowly collecting wort. Record a specific gravity reading from the first runnings.
5. Slowly pour sparge water over the back of the spoon or other rounded utensil and into the grain bed; the goal is to avoid a too-concentrated stream or jet of water. Continue sparging for 60-90 minutes to ensure that the grains have been thoroughly rinsed.

*Whether fly or batch sparging, continue on with step 6.*

6. When the wort runnings are down to 2° Plato or 1.008 specific gravity units, end collection to prevent drawing astringent tannic flavors from the grain. Top off the wort if necessary, to 7 or 7.25 gallons.
7. Put the beer on the boil. All-grain brewing chemically benefits from performing a 30-minute "pre-boil", where the beer is boiled for 30 minutes before beginning the normal 60-minute boil and hop strikes.
8. After the boil, it is time to cool the wort and whirlpool. Depending on cooling method and whether or not the wort will need to be transported before collecting it into the fermenter, whirlpooling can occur before or after chilling of the wort. Whirlpooling is a method of forcing all proteins and hop matter to the bottom of the kettle so that it is all easily separated from the wort at the time of collection. To whirlpool, use your spoon or mash paddle to vigorously stir wort in one direction along the outside edge of the kettle so that a whirlpool forms in the center. Stir continuously for about 3 minutes, then let the wort sit for 10 minutes with the lid on the kettle.
9. After the beer has been whirlpooled and chilled, it is time to put it into the fermenter. Do not just pour the beer from the kettle to the fermenter. Instead, siphon the wort following the top level of the wort down towards the bottom. Usually running the wort through a strainer over the fermenter is sufficient to aerate the wort and filter any hop matter or protein. After the wort has been collected and aerated, note your specific gravity, add the yeast, and seal up the fermenter.

*(Questions? We are happy to help! Please call us at 616-453-9674)*