

Beer Lautering

By: Douglas Wright, President

Lautering and sparging are very temperature specific processes. Before the wort is drained from the grist the temperature of the mash should be raised to a temperature between 75°C-77°C. This allows for maximum sugar extraction without extracting harsh tannins from the grains. Sparge water should also be in this temperature range for the same reason: to recover as much fermentable material as possible. The high heat also helps to stop some enzymatic activity.



Oxygenation

One of the main influential factors during the Lautering process is oxygenation. Excessive oxygen can contribute to reduced shelf life and flavor instability. To detect the levels of oxygen at this and other stages, a [dissolved oxygen meter](#) can be used which will accurately monitor the amounts of liquid oxygen in either ppm or mg/L.



Turbidity



The clarity of your beer is an important factor in the presentation and appearance of your finished product, according to the style being brewed. A [turbidity meter](#) is used to measure clarity by analyzing the amount of light refracted from any suspended organic material. This will let you know when cloudy wort needs to be recirculated, and the first wort needs to be drawn off to

improve clarity.

Specific Gravity / BRIX / Alcohol by Volume

Keeping track of the Specific Gravity (SG) during brewing is essential to ensuring that your finished product has a consistent gravity and final alcohol from batch to batch and that there are no issues pertaining to your brewing process and the grain or yeast quality. Using a refractometer allows you to take a quick measurement of the specific gravity during any point during your brewing activity.



The readings will inform you for example, if you need to add additional water



or boil for a longer period in order to hit your target gravity. Taking gravity readings will allow you to know also know the alcohol by volume and enable you to produce a consistent product. We have a variety of refractometers ranging from small [hand held units](#) to [advanced programmable units](#) that can be calibrated to specific mixtures. We can also supply [certified BRIX standards](#). It is very easy to take a small sample (i.e. a drop of wort) and measure it after calibrating the refractometer with de-ionized or distilled water. The Digital Refractometer will display the refractive index of the sample and convert it to *% Brix, % by weight concentration or other scales*. They compensate for temperature employing methodology recommended in the ICUMSA Methods Book (Internationally recognized body for

Sugar Analysis).



pH

During Lautering there is a potential for the pH level of the sparge water to rise. Keeping the sparge water within the correct ranges will reduce the extraction of undesirable elements from the mash that can result in off flavors and result in hazy / cloudy beers. A [pH test](#) on the sparge water at this point will ensure that you have the proper pH balance. This can also be done with inline pH systems. If you wish to investigate in-line pH, conductivity, turbidity or other parameters contact us for more details and options.



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