



FROTH

Newsletter of the Brewers of Central Kentucky

January 2010

2010 B.O.C.K OFFICERS

Scott Hand

Primary Fermenter
dribblingfram@gmail.com

Tony Aiken

Secondary Fermenter
tony@kentuckymudworks.com

Kevin Patterson

Keeper of the Cash
kevwpat@yahoo.com

Chris Vandergrift

Scribe
chris.vandergrift@gmail.com

Chris Walls

Webmaster
cwalls@amrms.com

Website

<http://www.bockbrew.com>

Froth is the publication of the Brewers of Central Kentucky, a non-profit organization dedicated to homebrewing.

If you would like to submit an article or have something that you would like to see included, please contact:
Chris Vandergrift at
chris.vandergrift@gmail.com

Your 2010-2011 officers will be:

Primary Fermenter
– **Scott Hand**



Secondary Fermenter
– **Tony Aiken**



Keeper of the Cash
– **Kevin Patterson**



Scribe / Webmaster
– **Chris Vandergrift**



Chemical Analysis of Lexington Water by Tony Aiken



Samples tested:

- * Meijer brand "Natural Spring Water" bottled water ("control").
- * Non-filtered tap water.
- * Filtered tap water.

Results

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Hardness: Calcium and Magnesium; Calmagite Colorimeter Method

Control	No Filter Tap	Filtered Tap
Magnesium	Magnesium	Magnesium
3.7 mg/L CaCO ₃	6.26 mg/L CaCO ₃	6.06 mg/L CaCO ₃
0.9 mg/L Mg+2	1.52 mg/L Mg+2	1.48 mg/L Mg+2
3.12 mg/L MgCO ₃	5.26 mg/L MgCO ₃	5.1 mg/L MgCO ₃
Calcium	Calcium	Calcium
0.32 mg/L CaCO ₃	0.0 mg/L CaCO ₃	0.0 mg/L CaCO ₃
0.12 mg/L Ca	0.0 mg/L Ca	0.0 mg/L Ca

Total Alkalinity

Control	No Filter Tap	Filtered Tap
Hydroxide 0 ppm CaCO ₃	Hydroxide 0 ppm CaCO ₃	Hydroxide 0 ppm CaCO ₃
Carbonate 0 ppm CaCO ₃	Carbonate 0 ppm CaCO ₃	Carbonate 0 ppm CaCO ₃
Bicarbonate 260 ppm CaCO ₃	Bicarbonate 100 ppm CaCO ₃	Bicarbonate 90 ppm CaCO ₃

Sulfates

Control 22 mg/L	No Filter Tap 26 mg/L	Filtered Tap 26 mg/L
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Chlorine Free DPD Method

Control 0.02 mg/L	No filter tap 0.26 mg/L	Filtered tap 0.05 mg/L
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Chlorine Total DPD Method

Control 0.07 mg/L	No Filter Tap 2.62 mg/L	Filtered Tap 0.02 mg/L
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pH

Control 7.0 - 7.1	No Filter Tap 6.9 - 7.0	Filtered Tap 6.9 - 7.0
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Batch Sparge or Fly Sparge?

Continuous or Fly Sparging - This technique requires the brewer to deliver sparge water to the top of the grain bed at the same or similar rate that sweet wort is lautered out. It helps to picture a horizontal plane of water slowly draining through the grain bed, incrementally picking up more and more sugar before it get pulled into the separation medium. Therefore, you can say that the liquid at the top of the tun is low gravity and by the time it gets to the bottom it is of higher gravity. The sparge water is to be placed gently onto the top of the grain bed so that about an inch of water remains (the grain does not run dry) and so the water does not violently drill into the grain bed. The rate of sparge and drain is done very slowly over 45 to 90 minutes to ensure maximum sugar is pulled into the passing water for the highest possible efficiency. This sparge continues until the maximum desired preboil volume is reached or the runnings gravity becomes 1.010 SG or lower. The benefit to this technique is usually quoted as providing the highest possible efficiency given the ideal equipment and process is used. The possible downside is the requirement to match inlet and outlet flows (requiring gravity or pumps) and the slightly longer time invested. That said, once the flows are matched, the entire sparge is hands off. The lauter tun **MUST** be designed such that the wort is collected from the bottom as evenly as possible.

Batch Sparging - This technique uses bulk infusions of sparge water as opposed to the constant inflow of fly sparging. Sweet wort is not drained as the sparge water is infused. It happens in "batches" so it's not just a clever name. The biggest distinction in the technique is how the sugar is pulled into the sparge water. In fly sparging, drops of water pick up sugar on it's way through the grain. In batch sparging, the water is thoroughly mixed in so that the gravity of the entire volume is the same. Then it is fully drained out (similar to a no sparge). Batch sparging can be done in multiple infusions in order to increase efficiency and/or account for smaller sized mash/lauter tuns that cannot accept the full required sparge volume. Although batch sparging is said to provide lower efficiency than fly, many brewers, myself included have proven this to be incorrect. While the sparge itself will take less overall time than fly, it is a bit more hands on or labor intensive. We'll talk more about the differences next.

Which to choose? - I admit that many brewers will stick with the method they first learned similar to the way people stick with the religions of their parents. In some cases, you'll stick with one of them until someone shows you a real benefit to the other technique. Anyone can use either one and still make great beer as long as they give that particular process the attention it requires. If someone says their way is better, it really just means that they've found a method that works better for them. It might also work better for you, but you'll have to try it. Batch Sparging tends to finish faster, is cheaper for startup, but it also requires a slightly larger mash tun. Fly Sparging is a slower method that requires a bit more attention to be paid to the process, but it is the way that most of the professionals do things because it is the best use of your mash tun space. There is a constant argument about which method has the best extraction, usually leading toward Fly Sparging as having a slight edge, but good results can be had with both methods.

Pitfalls - In fly sparging, one of the important details is the separation medium. False bottoms work really well because it encourages the wort to drop straight down through the grain bed and discourages channeling. Channeling is when wort will find a path of least resistance and avoid a LOT of the sugar leading to low efficiency. The other potential pitfall in fly sparging is letting the sparge water cool off too much over the hour or so. If you don't use a dedicated hot liquor tank with its own heat source, you must keep it in an insulated vessel.



Calendar of Events

January 2010

January BOCK Meeting

Monday, January 11 – 7:00pm-9:00pm

Location: Mellow Mushroom

Heard it Through the Grapevine

Friday, January 29

Location: Downtown Lexington

February 2010

February BOCK Meeting

Monday, February 8 – 7:00pm-9:00pm

Location: Mellow Mushroom

March 2010

March BOCK Meeting

Monday, March 8 – 7:00pm-9:00pm

Location: Mellow Mushroom