BITTER & ESTERS

SEE WHAT YOU CAN BREW

HOME BREW CON 2019

JUNE 27-29

PROVIDENCE, RI

Water!

Everyone's Second Favorite Liquid

Basic Water Comprehension for Homebrewers

What water is best for brewing?

- Clean potable water with some minerals (but not too many).
- Or reverse osmosis water to start with a blank slate.

Should I treat my water?

- If you are already making good beer you are on the right path.Brewing water treatment can
help enhance your beer Not a cure for bad beer.

Why should I treat my water?

- To remove chlorine.To adjust mash pH for better conversion and flavor.To enhance beer flavors with brewing salts.

Removing chlorine & chloramine

- Both react with polyphenols in wort and can create chlorophenols (band aid flavors).Especially important to remove in top off water.Chlorine is more volatile than chloramine.

Do I need to adjust my mash pH?

- If you are happy with your mash efficiency, probably not.It’s a good idea to take a mash pH reading to see where you’re at. Most beers can benefit from some mash pH adjustment.

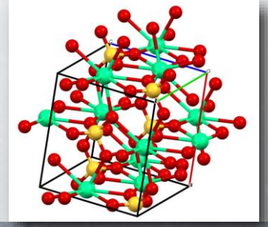
pH and the mash

- pH is the measurement of acidity or alkalinity in a solution.Amylase enzymes work best between pH 5.4 and 6 pH.Pale beer flavor benefits from lower pH (5.2), darker beers from higher pH (5.6).

Testing mash pH

- Requires good quality pH meter.pH strips are not accurate enough.pH is measured at room temperature.Meters with ATC do not compensate for pH change by temperature.pH is a tool to show you where you are.

What’s in my water?



- Get a copy of your water report or test your water with a test kit.Parameters you are looking for are: Calcium, Magnesium, Sodium, Sulfate, Chloride, Alkalinity, pH.

adjusting mash pH

- Calcium and Magnesium in water react with phosphates in mash to lower pH Bicarbonates (alkalinity) in water keeps pH of mash from changing.

Adjusting Mash pH

- Alkalinity in mash that has not been reduced is called residual alkalinity (RA).To adjust RA (and pH) add calcium, acid or dilute your mash water with distilled water. Requires a calculator like Palmers Brewing Water adjustment app, Bru’n water, Beersmith etc.

Dark malts and the mash

- Dark malts are acidic.
- You may need to add buffer like baking soda so pH doesn’t become too low.
- You can always add dark malts after conversion during vorlauf.

Enhancing beer flavor with mineral salts.

- Calcium sulfate (gypsum) ions increase enhance hop flavor and “bite”.Calcium chloride ions enhance malt flavors and help “round out” beer.Achieving a complimentary ratio of the two will make your beer stand out.

Should I adjust water for extract brewing?

- Best to start with low mineral or RO water.Remove chlorine especially from your top off water.We don’t know the water profile the extract was made with.You can make split batches and add salt post fermentation.

Conclusion

- Water adjustment is an enhancement, not a cure.Start with good quality water.Know what minerals are in your water.Take tests, keep notes.

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Questions?