Hop Tea Experiment Summary

The point of this experiment is to find out if making a concentrated hop tea and then dosing a relatively neutral beer with a representative volume of the tea allows you to evaluate the aroma and flavor characteristics imparted by the hop. We weren't sure if this was going to work, but wanted to give it a shot to see what people thought.

We were looking to see if there was a fast and cheap way to assess the flavor and aroma components of a bunch of different hops in beer. While it is possible to brew a bunch of small batches, the time and consistency required to conduct such an experiment become burdensome. So we were thinking it might be possible to brew up a bunch of concentrated hop teas in acidified water (pH 5.2-5.4) with hop additions at 10 minutes and at flameout (total boil of 10 minutes). This tea would then be dosed into a neutral beer like Coors Light to see if you could actually get any of the hop aroma and flavor profile into the beer. We tried to scale it to represent a 1.25 oz hop dosage at 10 and 0 minutes, which is a fairly significant amount.

Tea Preparation Methodology

We boiled a volume of water (with pH adjusted to 5.0 for wort like conditions as it has been noted that attempts at using hop teas at neutral water pH extract "grassy" flavors) for 10 minutes with additions of hops at the beginning of the boil and at the end of the boil (10 minutes later, steeping for 10 minutes). The desired concentration of addition was aiming for the equivalent of 1.25 oz at 10 minutes and 1.25 oz at 0 minutes in a 5 gallon batch of beer (scaling was based off of ratios of hops to wort volume in a batch of homebrew concentrated to dose 1 oz into a 12 oz beer). After steeping for 10 minutes, the tea was poured through a strainer into bottles and was capped. For this experiment, we used pellet hops of several different varieties (focusing on typical flavor and aroma hops):

Cascade

Kent Goldings

Hallertau

Saaz

Perle

Willamette

Tea Reconstitution Methodology

In order to attempt recreation of a comparable concentration, we used the following steps to mix the tea and the test beer.

Equipment:

2 pint glasses (7 for the entire experiment)

1 shot glass

Sampler glasses

2 12 oz bottles of Coors Light

1 bottle of cold hop tea

Cold water (in order to simulate equal dilution and effects on maltiness)

1. Pour 1 oz of hop tea (~2/3 shot glass) into one pint glass

2. Pour 1 oz of cold water (~2/3 shot glass) into other "standard" pint glass

3. Pour a bottle of Coors Light into each of the pint glasses

4. Pour a small sample of each into your sampler glasses (you can use the "standard" sample for all samples)

5. Compare aromas and flavors seeing if you can notice anything

6. Write down observations for the different styles if you do notice anything (back of sheet)

Notes:

1. The hop dosed beers will be very cloudy (ignore that as best as possible)

2. There is a significant change in bitterness, despite the low boiling time (ignore that as best

as possible)

3. We have no idea what effects the boil concentration of the tea have on flavor and aroma extraction

We are not sure if this actually works! **You** are running the experiment so please write down anything that you think you notice on the back of this sheet. There may be better ways to try this so give your suggestions! If you think this works, try it at home with the hops of your choice!

SUMMARY

So we made up the teas. Same acidified water, same dosage rates, same times on the stove, all pellets. Didn't really matter. All we got was a vegetal tea (still pretty bitter) but the hop aromas and flavors were totally dwarfed by that profile. Coors Light tasted better without it, and we all know how that tastes!

Everyone's assessment was that the water technique seemed like a bust. If someone wants to give it a shot with adding some malt extract in, that is probably the only other way to get it to work. Unfortunately then you've violated the cheap and easy premise of the experiment and now have an unstable, sweet product to worry about that should probably be cooled and used immediately.

While it was pretty much a failure, we wanted to pass it on because it is good to let other people know about failures so that they don't have to recreate them!

One last note, when boiling the hops, we boiled 64 oz of water with what ended up being a total of 3 oz of pellet hops. After absorption and evaporation losses, we ended up with roughly 36 oz of tea. Boiling the hops at that concentration was a little troublesome. You had to continuously stir the "sludge" in order to prevent boilovers.