

BIAB vs Extract Triangle Test



August 2019
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**To take the
survey, Scan this
code:**

Or type:

<https://forms.gle/LBrF1zS2bCZXNZPT9>



Extract and All Grain Brewing

Extract

- Quick brew day
- Minimal equipment
- Some limitations in recipe creation
 - Not necessarily a bad thing
- Easy access to fresh ingredients
 - Not like 20 years ago

Makes quality beer

All Grain (BIAB)

- More time consuming
- Increasing equipment possibilities
- Allows for more recipe customization
 - C15, C30, C45, C60, C90 etc
- Exponentially increased variables
 - Techniques (Mash, Sparge, pumps, etc)

Makes quality beer

Triangle Test - #1, #2, #3

- Aroma
 - Is anything more pronounced in any sample?
- Appearance
 - Any discernible differences?
- Flavor
 - Malt, Bitterness, Alcohol
- Mouthfeel
- Personal Preference
- Identify the beer
 - Which is Extract and which is All Grain?



Scientific Method

Objective: Brew the same beer via extract and all grain methods and compare the differences via triangle test.

Hypothesis: Extract and BIAB recipes will produce similar, but discernibly different beers.

Fear: Extract will be preferred to BIAB

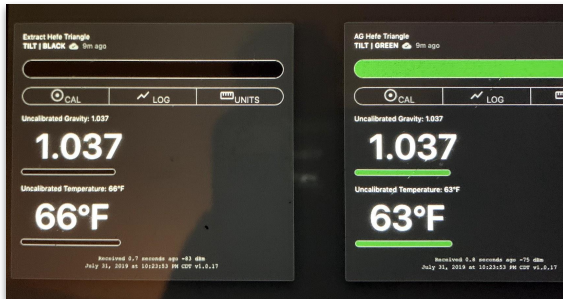
Method: Utilize commercially available recipes of the “same beer” as similarly as possible

- 60 minute boils, same brew kettle
- Extract - Early and late addition extract. Half volume boil
- All grain - BIAB, no sparge. Full volume boil.

German Wheat Ale

NB's Bavarian Hefeweizen Recipe

- Yeast-forward beer
- Cloudy appearance
- Quick fermenter
- Dry hopped just because
- Fermentation tracked with Tilt



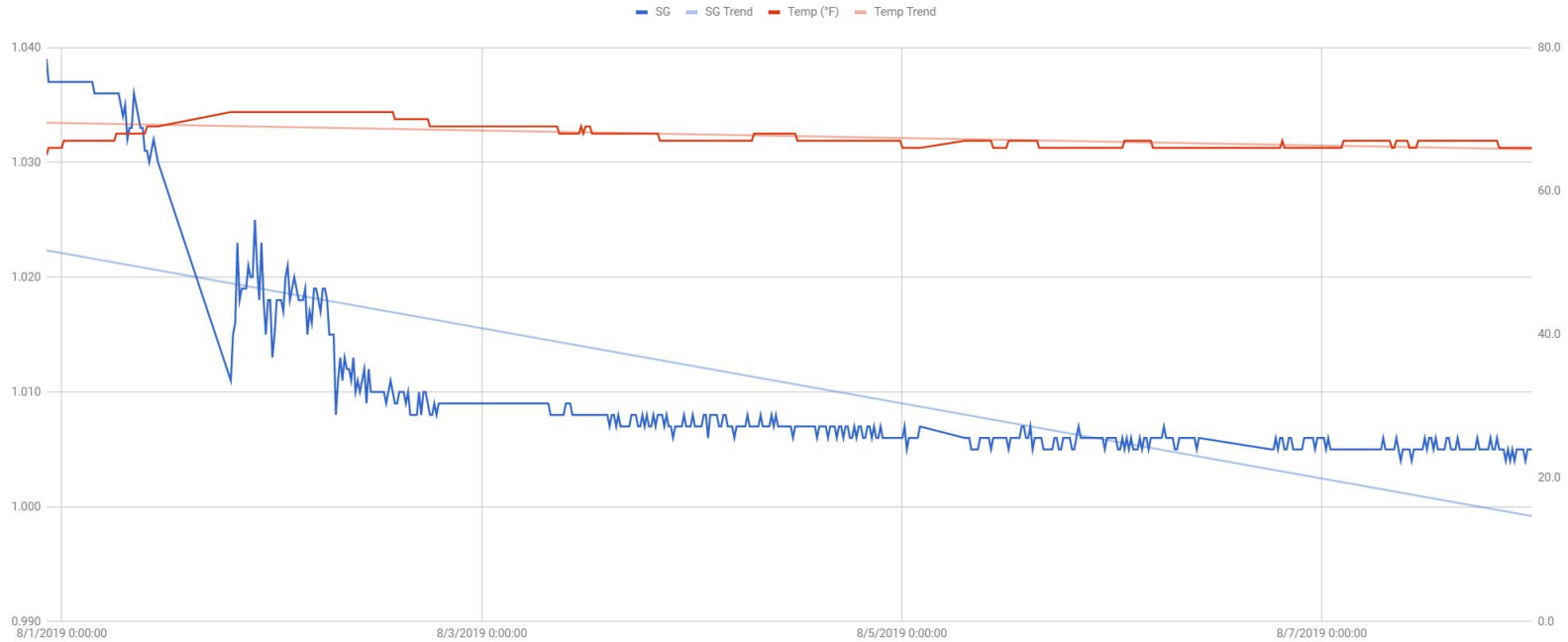
Extract

| Fermentation Profile | | | |
|----------------------|--------|-----------------------------|--------|
| OG | 1.037 | FG | 1.004 |
| % ABV | 4.20% | Apparent Attenuation | 86.49% |
| Average Temp | 67.6 F | High Temp | 71.0 F |
| | | Low Temp | 66.0 F |

- Malt
 - 6 lbs Wheat malt syrup split addition (60 and 15 min)
 - 1 lbs Wheat dry malt extract late addition (15 min)
- Hops
 - 1 oz German Tettnang (60 min)
 - 2 oz Mandarina Bavara (Primary)
- Yeast
 - G01 Stefon Imperial Yeast

[Northern Brewer Bavarian Hefeweizen Extract](#)

Fermentation - Extract



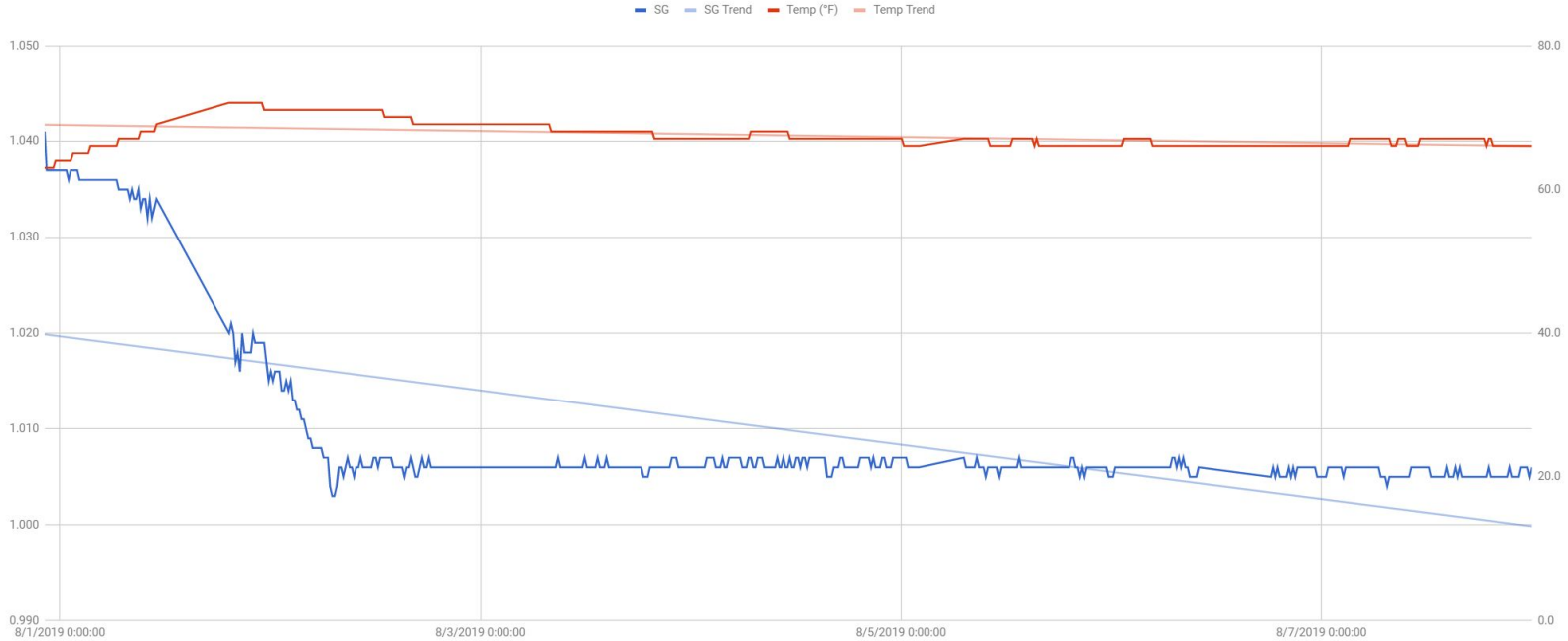
Brew in a Bag (All Grain)

| Fermentation Profile | | | |
|----------------------|--------|-----------------------------|--------|
| OG | 1.037 | FG | 1.005 |
| % ABV | 4.07% | Apparent Attenuation | 83.78% |
| Average Temp | 67.4 F | High Temp | 72.0 F |
| | | Low Temp | 64.0 F |

- Malt
 - -5.5 lbs. Weyermann Pale Wheat malt
 - 4 lbs German Pilsner malt
- Sacch' Rest: 152° F for 60 minutes
 - BIAB Recirculating Mash, no sparge
- Hops
 - 1 oz German Tettnang (60 min)
 - 2 oz Mandarina Bavara (Primary)
- Yeast
 - G01 Stefon Imperial Yeast

[Northern Brewer Bavarian Hefeweizen All Grain](#)

Fermentation - BIAB



Side By Side

Extract

| Fermentation Profile | | | |
|----------------------|--------|-----------------------------|--------|
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BIAB

| Fermentation Profile | | | |
|----------------------|--------|-----------------------------|--------|
| OG | 1.037 | FG | 1.005 |
| % ABV | 4.07% | Apparent Attenuation | 83.78% |
| Average Temp | 67.4 F | High Temp | 72.0 F |
| | | Low Temp | 64.0 F |

Discussion

- Which was Extract and which was BIAB?
- What were the different attributes?
- Which did you prefer?
- What if you were blindfolded?



Data Results

Google Form Results

15 Respondents

The actual breakdown is below:

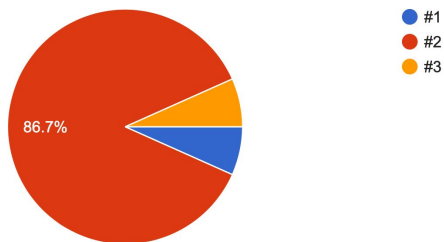
- Sample #1 - Extract
- Sample #2 - BIAB (all grain)
- Sample #3 - Extract

Most were able to identify Sample #2 as unique, and 60% thought it was BIAB. However, the club was split on whether #1 and #3 were BIAB or Extract.

13 of 15 were able to identify which sample was unique

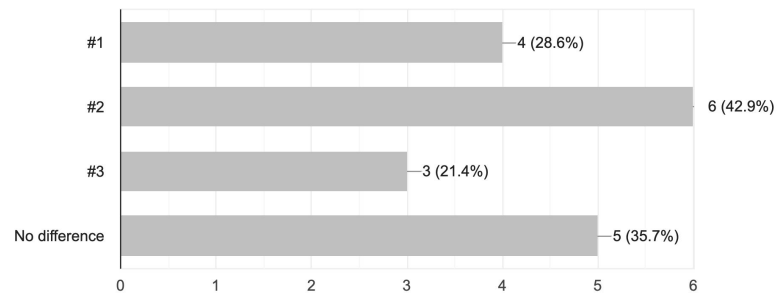
Which sample is unique?

15 responses



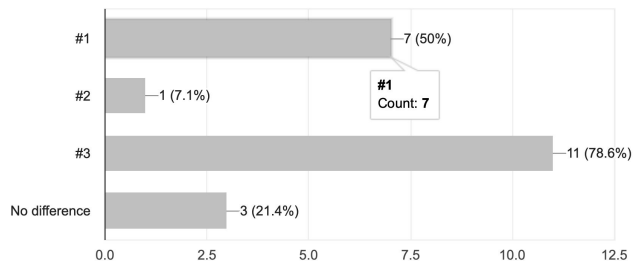
Did any sample have increased bitterness?

14 responses



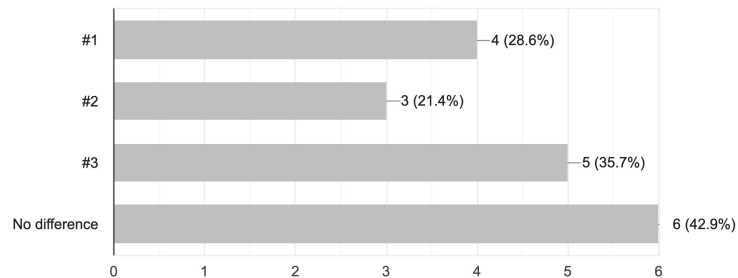
Did any sample have increased malt characteristics?

14 responses



Did any sample have increased yeast characteristics?

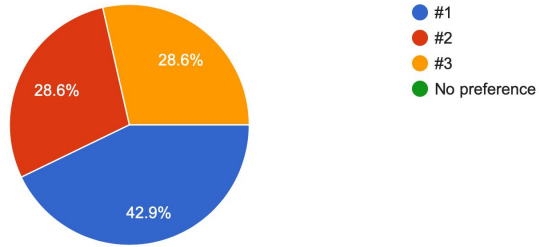
14 responses



**9 of 15 identified sample #2 as Extract.
#1 and #3 were nearly equally identified as both Extract and All Grain.**

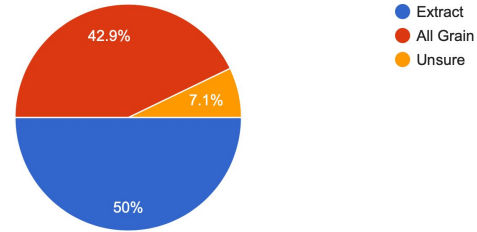
Which sample did you prefer?

14 responses



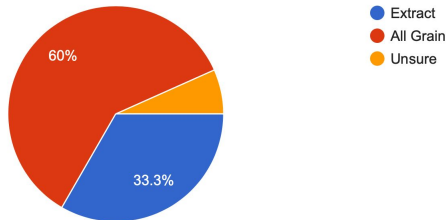
What is sample #1?

14 responses



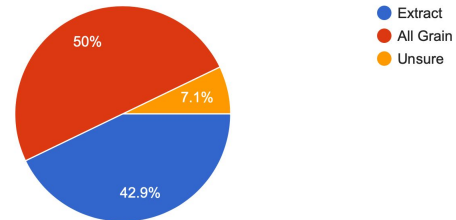
What is sample #2?

15 responses



What is sample #3?

14 responses



Brew. Drink. Repeat.TM

Cheers.