Heffervess (AG) 23L

Created Thursday February 9th 2023

League of Brewers

Method: **All Grain** Style: **Weissbier** Boil Time: **60 min** Batch Size: **23 liters** (fermentor volume) Pre Boil Size: **27.68 liters**

Post Boil Size: **25 liters** Pre Boil Gravity: **1.047** (recipe based estimate) Post Boil Gravity: **1.052** (recipe based estimate)

Efficiency: **75%** (brew house) Source: **LoB Kits** Calories: **240 calories** (Per 500ml) Carbs: **22.9 g** (Per 500ml)

Original Gravity:	Final Gravity:	ABV (standard):	IBU (tinseth):	SRM (morey):	Mash pH	Cost $
1.052	**1.011**	**5.4%**	**12.0**	**3.8**	**5.3**	**n/a**

Fermentables

Amount	Fermentable	Cost	PPG	°L	Bill %
2.40 kg	Bestmalz - BEST Pilsen		37	1.9	44.1%
2.70 kg	Bestmalz - BEST Wheat Malt		37.7	2.2	49.6%
0.20 kg	Gladfield - NZ - Gladfield - Oat Hulls		0	0	3.7%
0.14 kg	Gladfield - NZ - Gladfield - Sour Grapes Acid Malt		12	2	2.6%

5.44 kg / $ 0.00

Hops

Amount	Variety	Cost	Type	AA	Use	Time	IBU	Bill %
23 g	Tettnang		Pellet	4.6	Boil	60 min	11.96	100%

23 g / $ 0.00

Other Ingredients

Amount	Name	Cost	Type	Use	Time
6 g	Calcium Chloride (dihydrate)		Water Agt	Mash	1 hr.
3 g	Gypsum		Water Agt	Mash	1 hr.

Yeast

Lallemand - LALBREW® MUNICH CLASSIC WHEAT BEER YEAST

Amount: 1 Each **Cost:** **Attenuation (avg):** 78% **Flocculation:** Low **Optimum Temp:** 18 - 22 °C **Starter:** No

Fermentation Temp: 20 °C **Pitch Rate:** 0.35 *(M cells / ml / ° P)* 104 B cells required

Priming

Method: co2 Amount: 0.97 bar Temp: 4 °C CO_2 Level: 2.7 Volumes

Target Water Profile Light colored and malty

Ca^{+2} 84.4 **Mg^{+2}** 3 **Na^{+}** 10 **Cl^{-}** 98.5 **SO_4^{-2}** 58.2 **HCO_3^{-}** 0.2

Mash Guidelines

Amount	Description	Type	Start Temp	Target Temp	Time
14.6 L	Ferulic acid rest	Strike	43 °C	43 °C	20 min
		Temperature	--	67 °C	60 min
	Mash out	Temperature	--	76 °C	10 min
18.1 L		Sparge	--	78 °C	--

Starting Mash Thickness: 2.7 L/kg

Quick Water Requirements

Water	Liters
Strike water volume at mash thickness of 2.7 L/kg	14.7
Mash volume with grains	18.3
Grain absorption losses	-5.4
Remaining sparge water volume (equipment estimates 18.4 L)	18.4
Pre boil volume	27.7
Boil off losses	-2.5
Hops absorption losses (first wort, boil, aroma)	-0.2
Post boil Volume	25
Kettle losses	-2
Going into fermentor	23
Total:	**33.1**
Equipment Profile Used:	G30

Notes

The suggested mineral additions assume an average NZ water profile and should be fine for most NZ water sources. The target (balanced) water profile in ppm is shown above.

Special note: the mash schedule for this recipe includes a ferulic acid rest to help release ferulic acid from the malt. Ferulic acid is a precursor for 4-vinyl guaiacol and is an important step in encouraging the yeast to produce the phenolics characteristic of the style (i.e. cloves).

The ferulic acid rest works best at a pH of 5.7-5.8, which happens to be the estimated mash pH with no salts or acidulated malt. We highly recommended that the acidulated malt (packaged separately) and brewing salts are therefore added at the end of the ferulic acid rest. The pH will then drop to 5.3 for the main infusion.

Advanced note: a decoction mash is traditional (although not essential) for Hefeweizens. This will encourage the production of bready malt flavours and can also be fun to do. A decoction mash is also handy if you don't have some sort of heated recirculating mash set up. For the more adventurous brewer a simple double decoction can be added to the mash schedule as follows. 10 minutes into the ferulic acid rest, pull a thick mash sample (approximately 1/3 of the mash without lots of the liquor and enzymes) and heat in a separate vessel to 67 deg C (there is no need to raise the temperature of the main mash yet). Hold the decoction at 67 deg C for 20 min and then bring it to the boil. Slowly return the decoction to the main mash raising the temperature to 67 deg C. Any remaining decoction volume can be left to cool some more before returning to the main mash. At the end of the main 67 deg C infusion, pull a wet mash sample (1/3 of the mash with plenty of liqour) and bring it to the boil. Carefully return the boiled mash to the main mash, raising the temperature to mash out.

1. This recipe is designed to include mineral additions in the mash. If you do not have scales, 1 flat tsp/4g each of gypsum and calcium chloride will be a close approximation. The mineral additions are designed to target an optimal mash pH of 5.3 without the need for larger amounts of acidulated malt. Calcium is also essential for stabilising mash enzymes and for yeast health. The mineral additions are also very important for the flavour profile of the beer. If you do not have brewing salts in your home brewery, they are available for purchase on the LoB website and will last a great many brews for a small cost.
2. All of our hops are packaged in 50, 100 and 200 g packs. This means that for this recipe you will have an extra 27g of Tettnang hops. You may wish to use some of them to adjust the bittering if the current stocks of hops are a lower alpha acid % or just keep them for another brew.
3. If you wish (particularly if your system requires excessive sparging, below SG 1.012), add sufficient lactic acid to the sparge water to lower the pH to 5.6 prior to heating (~ 0.5 - 1.0 ml/10l lactic acid depending on water source).
4. This beer should be cloudy, so we recommend you don't add any kettle finings (whirlflock, Irish Moss). You may wish to add yeast nutrient 15 min before the end of boil.
5. Cool the wort to 18C and promptly transfer to a fermenter.
6. We strongly recommend that the yeast be rehydrated in sterile warm water per the manufacturer’s instructions. If not, you may lose up to 50% cell viability. Pitch into well aerated wort at 18C and allow to rise to 20C.
7. When the primary ferment is complete, hold the fermentation temperature at 20-22 deg C for 10-14 days. Three weeks from start to finish is a good rule of thumb. There should be no need to crash cool your beer. Time is your friend.
8. When ready, rack the beer to a CO2 purged keg and force carbonate to around 2.7 vols CO2. Alternatively, bottle or keg conditioning with priming sugar is a very nice option for a Hefeweizen with the added benefit of being able to roll the bottle to rouse the yeast for a perfect cloudy and flavoursome pour. Do not cold crash if you choose this option and do not rush the beer. A stable finishing gravity is a must (one week for clean beers is a good safety margin) and use a priming calculator to target around 2.7 - 3.0 vols CO2.