The Bittering. Ordinary Bitter (AG) 23 L

Created: Saturday December 7th 2024

League of Brewers

Method: **All Grain** Style: **Ordinary Bitter** Boil Time: **60 min** Batch Size: **23 liters** (fermentor volume) Pre Boil Size: **28.14 liters**

Post Boil Size: **25 liters** Pre Boil Gravity: **1.032** (recipe based estimate) Post Boil Gravity: **1.036** (recipe based estimate) Efficiency: **75%** (brew house)

Source: **Lob Kits** Calories: **166 calories** (Per 500ml) Carbs: **17.3 g** (Per 500ml)

Original Gravity:	Final Gravity:	ABV (standard):	IBU (tinseth):	SRM (morey):	Mash pH	Cost $
1.036	**1.009**	**3.6%**	**28.7**	**8.4**	**5.4**	**n/a**

Fermentables

Amount	Fermentable	Cost	PPG	°L	Bill %
3.30 kg	Thomas Fawcett - GB - Thomas Fawcett - Maris Otter Pale Ale Malt		37	3	91.2%
0.16 kg	Gladfield - NZ - Gladfield - Medium Crystal Malt		35.88	52.55	4.4%
0.16 kg	Gladfield - NZ - Gladfield - Dark Crystal Malt		35.88	100	4.4%

3.62 kg / $ 0.00

Hops

Amount	Variety	Cost	Type	AA	Use	Time	IBU	Bill %
30 g	Fuggles		Pellet	4.5	Boil	60 min	17.46	37.5%
25 g	East Kent Goldings		Pellet	5	Boil	15 min	8.02	31.3%
25 g	East Kent Goldings		Pellet	5	Boil	5 min	3.22	31.3%

80 g / $ 0.00

Other Ingredients

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

Yeast

Fermentis - Safale - English Ale Yeast S-04

Amount: 1 Each **Cost:** **Attenuation (avg):** 75% **Flocculation:** High **Optimum Temp:** 12 - 25 °C **Starter:** No

Fermentation Temp: 20 °C **Pitch Rate:** 0.5 *(M cells / ml / ° P)* 104 B cells required

Priming

Method: co2 Amount: 0.16 bar Temp: 6 °C CO_2 Level: 1.5 Volumes

Target Water Profile Balanced Profile

Ca^{+2} 67 **Mg^{+2}** 3 **Na^{+}** 10 **Cl^{-}** 40 **SO_4^{-2}** 96 **HCO_3^{-}** 45.7

Mash Guidelines

Amount	Description	Type	Start Temp	Target Temp	Time
8 L	Starch conversion. Warm and thick mash to help give the beer more body.	Strike	76 °C	68 °C	60 min
	Mash out	Temperature	68 °C	76 °C	15 min
23.8 L		Sparge	--	76 °C	--

Starting Mash Thickness: 2.2 L/kg
Starting Grain Temp: 18 °C

Quick Water Requirements

Water	Liters
Strike water volume at mash thickness of 2.2 L/kg	8
Mash volume with grains	10.4
Grain absorption losses	-3.6
Remaining sparge water volume	23.8
Pre boil volume	28.1
Boil off losses	-2.5
Hops absorption losses (first wort, boil, aroma)	-0.6
Post boil Volume	25
Kettle losses	-2
Going into fermentor	23
Total:	**31.8**
Equipment Profile Used:	G30

Notes

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

Special note. The mash thickness of this beer is thicker (2.2 l/Kg) than you might be used to. This is with the intention altering the activity of enzymes in the mash thereby creating a beer with more body. In the unlikely event that you encounter any problems with your system at this mash thickness, please add additional water at 68 deg C until rectified.

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 also designed to help target a mash pH of ~5.4. 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 20 g of Fuggles 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 use them for a traditional dry hop addition during keg or cask conditioning.
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. We recommend you add kettle finings (whirlflock, Irish Moss) and yeast nutrient 15 min before the end of the boil.
5. Cool the wort to 18 deg C 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 18 deg C and allow to rise to 20 deg C.
7. When the primary ferment is complete (~5-7 days), hold the fermentation temperature at 20 deg C for another 5 days, before raising the temperature to 22 deg C for 3 days.
8. When ready, rack the beer to a CO2 purged keg and force carbonate to style appropriate and soft level of around 1.5 vols CO2. Serving the beer at temperatures above 10 deg C will allow the flavour profile to shine.