Sunshine of your love (AG) 23L

Created: Tuesday January 24th 2023

League of Brewers

Method: **All Grain** Style: **Cream Ale** Boil Time: **60 min** Batch Size: **23 liters** (fermentor volume) Pre Boil Size: **27.61 liters**

Post Boil Size: **25 liters** Pre Boil Gravity: **1.037** (recipe based estimate) Post Boil Gravity: **1.047** (recipe based estimate) Efficiency: **75%** (brew house)

Source: **LoB Kits** Calories: **216 calories** (Per 500ml) Carbs: **19.7 g** (Per 500ml)

Original Gravity:	Final Gravity:	ABV (standard):	IBU (tinseth):	SRM (morey):	Mash pH	Cost $
1.047	**1.009**	**5.0%**	**14.6**	**3.4**	**5.2**	**n/a**

Fermentables

Amount	Fermentable	Cost	PPG	°L	Bill %
0.45 kg	Corn Sugar - Dextrose - *(late boil kettle addition)*		42	0.5	9.6%
2.70 kg	Gladfield - NZ - Gladfield - German Pilsner Malt		35.65	2	57.4%
1 kg	Gladfield - NZ - Gladfield - American Ale Malt		35.88	2.57	21.3%
0.15 kg	Gladfield - NZ - Gladfield - Sour Grapes Acid Malt		12	2	3.2%
0.40 kg	Thomas Fawcett - GB - Thomas Fawcett - Flaked Torrified Maize		39.8	1.5	8.5%

4.70 kg / $ 0.00

Hops

Amount	Variety	Cost	Type	AA	Use	Time	IBU	Bill %
16 g	Willamette (US)		Pellet	5.6	Boil	60 min	11.12	39%
25 g	Willamette		Pellet	5.6	Boil	5 min	3.46	61%

41 g / $ 0.00

Other Ingredients

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

Yeast

Lallemand - LALBREW® BRY-97 WEST COAST ALE YEAST

Amount: 2 Each **Cost:** **Attenuation (avg):** 75% **Flocculation:** High **Optimum Temp:** 15 - 22 °C **Starter:** No

Fermentation Temp: - **Pitch Rate:** 0.75 *(M cells / ml / ° P)* 201 B cells required

Priming

CO_2 Level: 2.65 Volumes

Target Water Profile Balanced Profile

Ca^{+2} 80 **Mg^{+2}** 5 **Na^{+}** 25 **Cl^{-}** 75 **SO_4^{-2}** 80 **HCO_3^{-}** 100

Mash Guidelines

Amount	Description	Type	Start Temp	Target Temp	Time
11.2 L	Single Infusion	Strike	65 °C	65 °C	60 min
20.6 L		Sparge	78 °C	--	--

Starting Mash Thickness: 2.7 L/kg
Starting Grain Temp: 20 °C

Quick Water Requirements

Water	Liters
Strike water volume at mash thickness of 2.7 L/kg	11.5
Mash volume with grains	14.3
Grain absorption losses	-4.3
Remaining sparge water volume (equipment estimates 20.3 L)	20.4
Pre boil volume (equipment estimates 27.5 L)	27.6
Volume increase from sugar/extract (late additions)	0.3
Boil off losses	-2.5
Hops absorption losses (first wort, boil, aroma)	-0.3
Post boil Volume	25
Kettle losses	-2
Going into fermentor	23
Total:	**31.9**
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.

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 ~5.2 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 9 g of Willamette hops. You may wish to use some of them to adjust the bittering if the current stocks of hops are a lower alpha acid %, and/or 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 lactic acid/10L water, acid depending on your water source).
4. We recommend you add kettle finings (whirlflock, Irish Moss) and yeast nutrient 15 min before the end of boil.
5. Sprinkle in the dextrose 10 min before the end of the boil.
6. Cool the wort to 18 deg C and promptly transfer to a fermenter.
7. 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.
8. When the primary ferment is complete, hold the fermentation temperature at 20 deg C for 7-14 days. Two-three weeks from start to finish is a good rule of thumb.
9. When ready, rack the beer to a CO2 purged keg and force carbonate to around 2.7 vols CO2. Alternatively, bottle conditioning with priming sugar is a great option. 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. For those who choose to bottle condition, we recommend targeting around 3.0 vols CO2, for an effervescent and thirst quenching lawnmower beer.