Pieter Pieter (AG) 23L

Belgian Pale Ale (24 B)

Type: All Grain
Batch Size: 23.00 L
Boil Size: 28.50 L
Boil Time: 60 min
Final Bottling Vol: 22.00 L
Fermentation: Ale, Two Stage

Date: 08 Jul 2022
Efficiency: 75.00 %
Est Mash Efficiency: 81.5 %



Brewing 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 Ca - 80, Mg - 3, Na - 5, SO4 - 80, Cl - 80.

1. This recipe is designed 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. 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).
3. We recommend adding kettle finings (whirlflock, Irish Moss) and yeast nutrient 15 min before the end of boil.
4. Quickly, cool the wort to 18C and promptly transfer to a fermenter.
5. 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 22C.
6. 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. It is likely that there will be no need to crash cool your beer. Time is your friend.
7. When ready, rack the beer to a CO2 purged keg and force carbonate. Alternatively, bottle or keg conditioning with priming sugar is a very nice option for Belgian styles.

Water Prep

Amt	Name	Type	#	%/IBU	Volume
4.50 g	Calcium Chloride (dihydrate) (Mash)	Water Agent	1	-	-
4.50 g	Gypsum (Mash)	Water Agent	2	-	-

Mash or Steep Grains

Mash Ingredients

Amt	Name	Type	#	%/IBU	Volume
4.500 kg	Gladfield Pilsner Malt (3.7 EBC)	Grain	3	81.1 %	2.93 L
0.250 kg	Caramalt Malt - 35L (Bairds) (69.0 EBC)	Grain	4	4.5 %	0.16 L
0.250 kg	Gladfield Biscuit Malt (65.0 EBC)	Grain	5	4.5 %	0.16 L
0.200 kg	Gladfield Medium Crystal Malt (100.0 EBC)	Grain	6	3.6 %	0.13 L
0.200 kg	Gladfield Munich Malt (15.0 EBC)	Grain	7	3.6 %	0.13 L
0.150 kg	Gladfield Sour Grapes Malt (acid malt) (4.0 EBC)	Grain	8	2.7 %	0.10 L

Mash Steps

Name	Description	Step Temperature	Step Time
	Add 18.48 L of water at 73.9 C	66.0 C	60 min
Mash out	Heat to 75.0 C over 4 min	75.0 C	5 min

◯ Fly sparge with 15.57 L water at 75.6 C
◯ Add water to achieve boil volume of 28.50 L
◯ Estimated pre-boil gravity is 1.046 SG

Boil Ingredients

Amt	Name	Type	#	%/IBU	Volume
30.00 g	East Kent Goldings [6.30 %] - Boil 60.0 min	Hop	9	19.7 IBUs	-
20.00 g	East Kent Goldings [6.30 %] - Boil 10.0 min	Hop	10	4.8 IBUs	-

◯ Estimated Post Boil Vol: 26.00 L and Est Post Boil Gravity: 1.053 SG

Cool and Transfer Wort

◯ Cool wort to fermentation temperature
◯ Transfer wort to fermenter
◯ Add water if needed to achieve final volume of 23.00 L

Pitch Yeast and Measure Gravity and Volume

Fermentation Ingredients

Amt	Name	Type	#	%/IBU	Volume
2.0 pkg	Belgian Abbey M47 (Mangrove Jack #M47)	Yeast	11	-	-

◯ Measure Actual Original Gravity _____ (Target: 1.053 SG)
◯ Measure Actual Batch Volume _____ (Target: 23.00 L)

Fermentation

◯ 08 Jul 2022 - Primary Fermentation (7.00 days at 18.0 C ending at 22.0 C)
◯ 15 Jul 2022 - Secondary Fermentation (14.00 days at 22.0 C ending at 22.0 C)

Dry Hop and Bottle/Keg

◯ Measure Final Gravity: _____ (Estimate: 1.011 SG)
◯ Date Bottled/Kegged: - Carbonation: Keg with 11.86 PSI