League F5 NZ Pilsner (AG) 60L

Czech Premium Pale Lager (3 B)

Type: All Grain
Batch Size: 60.00 L
Boil Size: 69.12 L
Boil Time: 60 min
Final Bottling Vol: 57.00 L
Fermentation: Lager, Two Stage

Date: 30 Apr 2024
Efficiency: 75.00 %
Est Mash Efficiency: 78.8 %



Brewing Notes:
This recipe has to be fermented cool and will benefit from lagering for at least 2 weeks if kegged or after bottle conditioning is complete. It will continue to improve if stored cool.

The suggested mineral additions assume an average NZ water profile and should be fine for most NZ water sources. The target water profile in ppm is Ca - 70, Mg - 10, Na - 10, SO4 - 100, Cl - 70.

1. If available, 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).
2. If flavour minerals are available, add to boil only as mash pH is taken care of with acid malt. The target mash pH is ~5.3 (5.2 - 5.4).
3. If available, add kettle finings and yeast nutrient 15 min before the end of boil.
4. Cool the wort to 90C, add the whirlpool hops and maintain the temp at 90C for 20 min before continuing to chill to pitching temp.
5. It is recommended that the yeast be rehydrated per the manufacturer's instructions. Pitch at 10C and maintain 10C - 12C until fermentation is nearing completion.
6. Once fermentation slows (~10 - 12 days), raise temp to 17C for a diacytle rest and add the dry hop addition.
7. After 5 days, cold crash to 2C and let lager for at least a week before packaging.
8. Carbonate to 2.5 volumes of CO2.

Mash or Steep Grains

Mash Ingredients

Amt	Name	Type	#	%/IBU	Volume
11.000 kg	Gladfield Pilsner Malt (3.8 EBC)	Grain	1	82.7 %	7.17 L
1.000 kg	Gladfield Toffee Malt (10.5 EBC)	Grain	2	7.5 %	0.65 L
0.700 kg	Gladfield Sour Grapes Malt (acid malt) (4.0 EBC)	Grain	3	5.3 %	0.46 L
0.600 kg	Gladfield Aurora Malt (58.0 EBC)	Grain	4	4.5 %	0.39 L

Mash Steps

Name	Description	Step Temperature	Step Time
Saccharification	Add 42.81 L of water at 70.3 C	65.0 C	60 min
Mash Out	Heat to 76.0 C over 10 min	76.0 C	10 min

◯ Fly sparge with 39.63 L water at 76.0 C

◯ Add water to achieve boil volume of 69.12 L
◯ Estimated pre-boil gravity is 1.045 SG

Boil Ingredients

Amt	Name	Type	#	%/IBU	Volume
40.00 g	Motueka [7.40 %] - Boil 60.0 min	Hop	5	12.7 IBUs	-
40.00 g	Wakatu (Hallertau Aroma) [6.10 %] - Boil 60.0 min	Hop	6	10.5 IBUs	-
13.20 g	Gypsum (Calcium Sulfate) (Boil)	Water Agent	7	-	-
9.90 g	Calcium Chloride (Boil)	Water Agent	8	-	-
1.50 Items	Whirlfloc Tablet (Boil 15.0 mins)	Fining	9	-	-
3.50 g	Yeast Nutrient (Boil 15.0 mins)	Other	10	-	-

Steeped Hops

Amt	Name	Type	#	%/IBU	Volume
60.00 g	Motueka [7.40 %] - Steep/Whirlpool 20.0 min, 90.0 C	Hop	11	5.5 IBUs	-
60.00 g	Wakatu (Hallertau Aroma) [6.10 %] - Steep/Whirlpool 2…	Hop	12	4.6 IBUs	-
25.00 g	Nelson Sauvin [10.10 %] - Steep/Whirlpool 20.0 min, 9…	Hop	13	3.1 IBUs	-
25.00 g	Pacifica [3.30 %] - Steep/Whirlpool 20.0 min, 90.0 C	Hop	14	1.0 IBUs	-

◯ Estimated Post Boil Vol: 65.62 L and Est Post Boil Gravity: 1.050 SG

Cool and Transfer Wort

◯ Cool wort to fermentation temperature
◯ Transfer wort to fermenter
◯ Add water if needed to achieve final volume of 60.00 L

Pitch Yeast and Measure Gravity and Volume

Fermentation Ingredients

Amt	Name	Type	#	%/IBU	Volume
4.0 pkg	Bohemian Lager Yeast (Mangrove Jack's #M84)	Yeast	15	-	-

◯ Measure Actual Original Gravity _____ (Target: 1.050 SG)
◯ Measure Actual Batch Volume _____ (Target: 60.00 L)

Fermentation

◯ 30 Apr 2024 - Primary Fermentation (12.00 days at 12.0 C ending at 12.0 C)
◯ 12 May 2024 - Secondary Fermentation (5.00 days at 17.0 C ending at 17.0 C)

Dry Hop and Bottle/Keg

Dry Hop/Bottling Ingredients

Amt	Name	Type	#	%/IBU	Volume
125.00 g	Nelson Sauvin [10.10 %] - 3.0 Days Before Bottling for…	Hop	16	0.0 IBUs	-
125.00 g	Pacifica [4.50 %] - 3.0 Days Before Bottling for 5.0 Days	Hop	17	0.0 IBUs	-

◯ Measure Final Gravity: _____ (Estimate: 1.013 SG)
◯ Date Bottled/Kegged: - Carbonation: Keg with 14.89 PSI