League F5 NZ Pilsner (AG)

Czech Premium Pale Lager (3 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: Lager, Two Stage

Date: 25 Mar 2019
Efficiency: 75.00 %
Est Mash Efficiency: 81.5 %



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.

1. If flavour minerals are available, add to boil only as mash pH is taken care of with acid malt.
2. Add the whirlpool hops at the start of cooling down the wort (i.e., when the cooling water is applied to the wort chiller).
3. Pitch at 10C and maintain 10C - 12C until fermentation is nearing completion.
4. Once fermentation slows (~10 - 12 days), raise temp to 17C for a diacytle rest and add the dry hop addition.
5. After 5 days, cold crash to 2C and let lager for at least a week before packaging.
6. Carbonate to 2.5 volumes of CO2.

Mash or Steep Grains

Mash Ingredients

Amt	Name	Type	#	%/IBU	Volume
4.200 kg	Gladfield Pilsner Malt (3.8 EBC)	Grain	1	80.0 %	2.74 L
0.430 kg	Gladfield Toffee Malt (10.5 EBC)	Grain	2	8.2 %	0.28 L
0.400 kg	Gladfield Sour Grapes Malt (acid malt) (4.0 EBC)	Grain	3	7.6 %	0.26 L
0.220 kg	Gladfield Aurora Malt (58.0 EBC)	Grain	4	4.2 %	0.14 L

Mash Steps

Name	Description	Step Temperature	Step Time
Saccharification	Add 17.68 L of water at 70.1 C	65.0 C	60 min
Mash Out	Heat to 76.0 C over 10 min	76.0 C	10 min

Fly sparge with 16.08 L water at 76.0 C
Add water to achieve boil volume of 28.50 L
Estimated pre-boil gravity is 1.044 SG

Boil Ingredients

Amt	Name	Type	#	%/IBU	Volume
5.40 g	Gypsum (Calcium Sulfate) (Boil)	Water Agent	5	-	-
4.00 g	Calcium Chloride (Boil)	Water Agent	6	-	-
20.00 g	Motueka [7.40 %] - Boil 45.0 min	Hop	7	15.3 IBUs	-
20.00 g	Wakatu (Hallertau Aroma) [6.10 %] - Boil 45.0 min	Hop	8	12.6 IBUs	-

Steeped Hops

Amt	Name	Type	#	%/IBU	Volume
30.00 g	Motueka [7.40 %] - Steep/Whirlpool 20.0 min, 90.0 C	Hop	9	7.0 IBUs	-
30.00 g	Wakatu (Hallertau Aroma) [6.10 %] - Steep/Whirlpool 20.0 min, 90.0 C	Hop	10	5.8 IBUs	-

Estimated Post Boil Vol: 26.00 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 23.00 L

Pitch Yeast and Measure Gravity and Volume

Fermentation Ingredients

Amt	Name	Type	#	%/IBU	Volume
2.0 pkg	Bohemian Lager Yeast (Mangrove Jack's #M84)	Yeast	11	-	-

Measure Actual Original Gravity _____ (Target: 1.050 SG)
Measure Actual Batch Volume _____ (Target: 23.00 L)

Fermentation

25 Mar 2019 - Primary Fermentation (12.00 days at 12.0 C ending at 12.0 C)
06 Apr 2019 - 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
50.00 g	Nelson Sauvin [10.10 %] - Dry Hop 5.0 Days	Hop	12	0.0 IBUs	-
50.00 g	Pacifica [4.50 %] - Dry Hop 5.0 Days	Hop	13	0.0 IBUs	-

Measure Final Gravity: _____ (Estimate: 1.010 SG)
Date Bottled/Kegged: - Carbonation: Keg with 14.89 PSI