League Freestyle (AG)

New Zealand Pilsner (X5)

Type: All Grain
Batch Size: 23.00 L
Boil Size: 28.50 L
Boil Time: 60 min
Final Bottling Vol: 22.00 L
Fermentation: California Common - Lager

Date: 18 Feb 2020
Efficiency: 75.00 %
Est Mash Efficiency: 81.5 %



Brewing Notes:
This recipe uses a lager yeast that is tolerant of warmer fermentation temperatures while maintaining a clean fermentation profile. If possible, ferment at the cool end of the range (12C - 15C). The beer 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. If available, add kettle finings and yeast nutrient 15 min before the end of boil.
3. Cool the wort to 85C, add the whirlpool hops and maintain the temp at 85C for 20 min before continuing to chill to pitching temp.
4. It is recommended that the yeast be rehydrated per the manufacturers instructions. Pitch at 12C - 15C and maintain until fermentation is nearing completion.
5. Once fermentation slows (~7 - 10 days), raise temp to 18C for a diacetyl rest and add the dry hop addition.
6. After 5 days, cold crash to 2C and let lager for at least a week before packaging.
7. Carbonate to 2.5 - 2.7 volumes of CO2.

Mash or Steep Grains

Mash Ingredients

Amt	Name	Type	#	%/IBU	Volume
2.300 kg	BEST Pilsen Malt (BESTMALZ) (3.5 EBC)	Grain	1	46.9 %	1.50 L
2.300 kg	Gladfield German Pilsner Malt (4.0 EBC)	Grain	2	46.9 %	1.50 L
0.300 kg	Sour Grapes Malt (4.0 EBC)	Grain	3	6.1 %	0.20 L

Mash Steps

Name	Description	Step Temperature	Step Time
Saccharification	Add 16.73 L of water at 69.8 C	65.0 C	75 min
Mash Out	Heat to 76.0 C over 10 min	76.0 C	10 min

Fly sparge with 16.68 L water at 77.0 C
Add water to achieve boil volume of 28.50 L
Estimated pre-boil gravity is 1.042 SG

Boil Ingredients

Amt	Name	Type	#	%/IBU	Volume
20.00 g	Nelson Sauvin [10.10 %] - Boil 60.0 min	Hop	4	22.5 IBUs	-
6.00 g	Gypsum (Calcium Sulfate) (Boil)	Water Agent	5	-	-
3.30 g	Calcium Chloride (CaCl2) (Boil)	Water Agent	6	-	-
0.50 Items	Whirlfloc Tablet (Boil 15.0 mins)	Fining	7	-	-
1.25 g	Yeast Nutrient (Boil 15.0 mins)	Other	8	-	-
15.00 g	Riwaka [6.20 %] - Boil 10.0 min	Hop	9	6.0 IBUs	-

Steeped Hops

Amt	Name	Type	#	%/IBU	Volume
30.00 g	Nelson Sauvin [10.10 %] - Steep/Whirlpool 15.0 min, 85.0 C	Hop	10	5.5 IBUs	-
25.00 g	Motueka [8.20 %] - Steep/Whirlpool 15.0 min, 85.0 C	Hop	11	3.7 IBUs	-

Estimated Post Boil Vol: 26.00 L and Est Post Boil Gravity: 1.048 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	California Lager (Mangrove Jack's #M54)	Yeast	12	-	-

Measure Actual Original Gravity _____ (Target: 1.048 SG)
Measure Actual Batch Volume _____ (Target: 23.00 L)

Fermentation

18 Feb 2020 - Primary Fermentation (7.00 days at 14.0 C ending at 14.0 C)
25 Feb 2020 - Secondary Fermentation (5.00 days at 18.0 C ending at 18.0 C)

Dry Hop and Bottle/Keg

Dry Hop/Bottling Ingredients

Amt	Name	Type	#	%/IBU	Volume
35.00 g	Riwaka [6.20 %] - Dry Hop 5.0 Days	Hop	13	0.0 IBUs	-
25.00 g	Motueka [8.20 %] - Dry Hop 5.0 Days	Hop	14	0.0 IBUs	-

Measure Final Gravity: _____ (Estimate: 1.009 SG)
Date Bottled/Kegged: - Carbonation: Keg with 17.22 PSI