League Patriot (AG)

Specialty IPA (21 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 with Diacetyl Rest

Date: 22 Mar 2022
Efficiency: 75.00 %
Est Mash Efficiency: 81.5 %



Brewing Notes:
There is no boil hop addition with all bitterness coming from the steep/whirlpool hops. The average temperature of the hop stand should be around 90C. Once fermentation is complete, any exposure to oxygen will impact the beer flavour and aroma.

This recipe also uses a large amount of steep/whirlpool and dry hops. Suggest using a hop spider for the steep/whirlpool addition and hop bags for the dry hop additions. The dry hop additions are performed duirng active fermentation to allow the yeast to remove any oxygen that is introduced.

The large dry hop additions should cause some 'dry hop creep' which will result in additional fermentation of previously unfermentable sugars. A lower FG and higher ABV than is predicted can be expected.

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 - 110, Mg - 10, Na - 10, SO4 - 75, Cl - 150.

1. If flavour minerals are available, add to boil only as mash pH is taken care of with the acid malt.
2. If available, add sufficient lactic acid to the sparge water to lower the pH to 5.6 prior to heating (~ 0.5 - 1.5 ml depending on water source).
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 90C for 20 min. Once complete, cool the wort quickly to transfer temperature.
5. It is recommended that the yeast be rehydrated per the manufacturer's instructions. Pitch at 18C and maintain for 48 hours.
6. After 48 hours, add the first dry hop addition and raise the temp to 20C.
7. Add second dry hop addition once fermentation slows but is still active and raise the temp to 22C for a diacetyl rest.
8. Ferment for another 5 days to ensure full attenuation and diacetyl removal by the yeast.
9. Once fermentation is complete, lower the temperature to 2C and hold for 2 - 3 days prior to packaging.
10. Use care to minimize or eliminate exposure to oxygen during dry hopping, cold crashing and packaging.
11. Carbonate to 2.5 - 2.7 volumes of CO2.
12. For peak flavour and aroma, this beer is best consumed fresh.

Mash or Steep Grains

Mash Ingredients

Amt	Name	Type	#	%/IBU	Volume
3.600 kg	Gladfield American Ale Malt (4.7 EBC)	Grain	1	65.1 %	2.35 L
0.900 kg	Harraway's Rolled Oats (2.8 EBC)	Grain	2	16.3 %	0.59 L
0.450 kg	Gladfield Raw Wheat (3.2 EBC)	Grain	3	8.1 %	0.29 L
0.300 kg	Gladfield Sour Grapes Malt (acid malt) (4.0 EBC)	Grain	4	5.4 %	0.20 L
0.280 kg	Gladfield Toffee Malt (10.5 EBC)	Grain	5	5.1 %	0.18 L

Mash Steps

Name	Description	Step Temperature	Step Time
Protein Rest	Add 18.43 L of water at 53.2 C	50.0 C	30 min
Saccharification	Heat to 66.7 C over 15 min	66.7 C	45 min
Mash Out	Heat to 75.6 C over 10 min	75.6 C	10 min

◯ Fly sparge with 15.61 L water at 75.6 C
◯ Add water to achieve boil volume of 28.50 L
◯ Estimated pre-boil gravity is 1.047 SG

Boil Ingredients

Amt	Name	Type	#	%/IBU	Volume
10.00 g	Calcium Chloride (Boil)	Water Agent	6	-	-
4.00 g	Gypsum (Calcium Sulfate) (Boil)	Water Agent	7	-	-

Steeped Hops

Amt	Name	Type	#	%/IBU	Volume
50.00 g	Citra [13.80 %] - Steep/Whirlpool 30.0 min, 90.0 C	Hop	8	26.9 IBUs	-
30.00 g	Eukanot [14.00 %] - Steep/Whirlpool 30.0 min, 90.0 C	Hop	9	16.4 IBUs	-
20.00 g	Mosaic (HBC 369) [12.60 %] - Steep/Whirlpool 30.0 min, 9…	Hop	10	9.8 IBUs	-

◯ Estimated Post Boil Vol: 26.00 L and Est Post Boil Gravity: 1.054 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	Liberty Bell Ale (Mangrove Jack's #M36)	Yeast	11	-	-

◯ Measure Actual Original Gravity _____ (Target: 1.054 SG)
◯ Measure Actual Batch Volume _____ (Target: 23.00 L)

Fermentation

◯ 22 Mar 2022 - Primary Fermentation (3.00 days at 18.0 C ending at 18.0 C)
◯ 25 Mar 2022 - Secondary Fermentation (6.00 days at 20.0 C ending at 20.0 C)
◯ 31 Mar 2022 - Tertiary Fermentation (5.00 days at 22.0 C ending at 22.0 C)

Dry Hop and Bottle/Keg

Dry Hop/Bottling Ingredients

Amt	Name	Type	#	%/IBU	Volume
50.00 g	Citra [13.80 %] - 7.0 Days Before Bottling for 7.0 Days	Hop	12	0.0 IBUs	-
35.00 g	Eukanot [14.00 %] - 7.0 Days Before Bottling for 7.0 Days	Hop	13	0.0 IBUs	-
15.00 g	Mosaic (HBC 369) [12.60 %] - 7.0 Days Before Bottling for…	Hop	14	0.0 IBUs	-
50.00 g	Citra [13.80 %] - 5.0 Days Before Bottling for 5.0 Days	Hop	15	0.0 IBUs	-
35.00 g	Eukanot [14.00 %] - 5.0 Days Before Bottling for 5.0 Days	Hop	16	0.0 IBUs	-
15.00 g	Mosaic (HBC 369) [12.60 %] - 5.0 Days Before Bottling for…	Hop	17	0.0 IBUs	-

◯ Measure Final Gravity: _____ (Estimate: 1.012 SG)
◯ Date Bottled/Kegged: - Carbonation: Keg with 12.54 PSI