League Vortex (AG)

American Pale Ale (18 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: League Ale Kit

Date: 04 Mar 2019
Efficiency: 75.00 %
Est Mash Efficiency: 81.5 %



Brewing Notes:
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 18C and keep as close to this temperature as possible for 3 days. After 3 days, let rise up to a maximum of 23C and hold until fermentation is complete. If possible, cold crash for a few days before packaging.
4. Dry hop for 5 days once fermentation nears completion.
5. Carbonate to 2.7 volumes of CO2.

Mash or Steep Grains

Mash Ingredients

Amt	Name	Type	#	%/IBU	Volume
3.500 kg	Gladfield Pilsner Malt (3.8 EBC)	Grain	1	74.5 %	2.28 L
0.425 kg	Gladfield Gladiator Malt (10.0 EBC)	Grain	2	9.0 %	0.28 L
0.425 kg	Gladfield Wheat Malt (4.2 EBC)	Grain	3	9.0 %	0.28 L
0.350 kg	Gladfield Sour Grapes Malt (4.0 EBC)	Grain	4	7.4 %	0.23 L
1.80 ml	Lactic Acid (Sparge)	Water Agent	5	-	-

Mash Steps

Name	Description	Step Temperature	Step Time
Saccharification	Add 16.19 L of water at 70.0 C	65.0 C	60 min
Mash Out	Heat to 76.0 C over 10 min	76.0 C	10 min

Sparge Water Acid: None
Fly sparge with 17.02 L water at 76.0 C
Add water to achieve boil volume of 28.50 L
Estimated pre-boil gravity is 1.040 SG

Boil Ingredients

Amt	Name	Type	#	%/IBU	Volume
6.30 g	Gypsum (Calcium Sulfate) (Boil)	Water Agent	6	-	-
3.30 g	Calcium Chloride (Boil)	Water Agent	7	-	-
12.00 g	Mosaic (HBC 369) [12.60 %] - Boil 15.0 min	Hop	8	11.4 IBUs	-
12.00 g	Citra [13.80 %] - Boil 5.0 min	Hop	9	9.1 IBUs	-
12.00 g	Nelson Sauvin [10.10 %] - Boil 5.0 min	Hop	10	6.7 IBUs	-

Steeped Hops

Amt	Name	Type	#	%/IBU	Volume
20.00 g	Cascade [6.80 %] - Steep/Whirlpool 20.0 min, 85.0 C	Hop	11	3.1 IBUs	-
18.00 g	Citra [13.80 %] - Steep/Whirlpool 20.0 min, 85.0 C	Hop	12	5.6 IBUs	-
18.00 g	Mosaic (HBC 369) [12.60 %] - Steep/Whirlpool 20.0 min, 85.0 C	Hop	13	5.1 IBUs	-
18.00 g	Nelson Sauvin [10.10 %] - Steep/Whirlpool 20.0 min, 85.0 C	Hop	14	4.1 IBUs	-

Estimated Post Boil Vol: 26.00 L and Est Post Boil Gravity: 1.046 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	Safale American (DCL/Fermentis #US-05) [0.05 L]	Yeast	15	-	-

Measure Actual Original Gravity _____ (Target: 1.046 SG)
Measure Actual Batch Volume _____ (Target: 23.00 L)

Fermentation

04 Mar 2019 - Primary Fermentation (3.00 days at 18.0 C ending at 18.0 C)
07 Mar 2019 - Secondary Fermentation (3.00 days at 18.0 C ending at 23.0 C)
10 Mar 2019 - Tertiary Fermentation (7.00 days at 23.0 C ending at 23.0 C)

Dry Hop and Bottle/Keg

Dry Hop/Bottling Ingredients

Amt	Name	Type	#	%/IBU	Volume
30.00 g	Cascade [6.80 %] - Dry Hop 5.0 Days	Hop	16	0.0 IBUs	-
20.00 g	Citra [13.80 %] - Dry Hop 5.0 Days	Hop	17	0.0 IBUs	-
20.00 g	Mosaic (HBC 369) [12.60 %] - Dry Hop 5.0 Days	Hop	18	0.0 IBUs	-
20.00 g	Nelson Sauvin [10.10 %] - Dry Hop 5.0 Days	Hop	19	0.0 IBUs	-

Measure Final Gravity: _____ (Estimate: 1.008 SG)
Date Bottled/Kegged: - Carbonation: Keg with 12.54 PSI