League Rocky IPA (AG)

American IPA (21 A)

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: 13 Apr 2020
Efficiency: 75.00 %
Est Mash Efficiency: 81.5 %



Brewing Notes:
This beer has a large dry hop addition which can cause what is known as 'dry hop creep'. This is where enzymes in the hops convert some normally non-fermentable sugars into fermentable ones. This can lower the final gravity raising the ABV as well as reintroduce diacetyl precursors (the target ABV is ~6%). One way to address this is to add the dry hops while the yeast is still quite active, bump the temp up, and let ferment completely which is the approach used in the instructions below. Another option is to let ferment fully, drop the temp to 5C and then dry hop for a shorter period (cold and short dry hop). The second option will prevent the ABV increase but, to ensure no additional fermentation in packaging (e.g., bottles), only do this if kegging.

Most of the calculated IBUs in this recipe are coming from the late boil and steep/whirlpool additions. Note, this recipe uses a high sulphate to chloride ratio (~4:1) when the flavour minerals are used. This is meant to accentuate the dryness and hoppiness of the beer.

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 prior to the end of boil.
3. Add the whirlpool hops after cooling the wort to 80C. Maintain 80C for the entire hop stand (30 min).
4. It is recommended that the yeast be rehydrated per the manufacturers instructions. Pitch at 18C and let rise to 20C over 48 hours.
5. Once fermentation slows (~5 - 7 days), add the dry hop addition and raise temp to 23C for a diacetyl rest.
5. Let ferment completely (~5 days) and, if possible, cold crash for a few days before packaging.
6. Carbonate to 2.6 - 2.7 volumes of CO2.

Mash or Steep Grains

Mash Ingredients

Amt	Name	Type	#	%/IBU	Volume
2.000 kg	Gladfield American Ale Malt (4.7 EBC)	Grain	1	35.5 %	1.30 L
2.000 kg	Pale Malt, Maris Otter (Thomas Fawcett) (5.9 EBC)	Grain	2	35.5 %	1.30 L
1.000 kg	Gladfield Wheat Malt (4.2 EBC)	Grain	3	17.8 %	0.65 L
0.350 kg	Gladfield Sour Grapes Malt (acid malt) (4.0 EBC)	Grain	4	6.2 %	0.23 L
0.200 kg	Gladfield Munich Malt (15.5 EBC)	Grain	5	3.6 %	0.13 L
0.080 kg	Gladfield Medium Crystal Malt (111.0 EBC)	Grain	6	1.4 %	0.05 L

Mash Steps

Name	Description	Step Temperature	Step Time
Saccharification	Add 18.70 L of water at 71.0 C	66.0 C	60 min
Mash Out	Heat to 76.0 C over 10 min	76.0 C	10 min

Fly sparge with 15.44 L water at 75.6 C
Add water to achieve boil volume of 28.50 L
Estimated pre-boil gravity is 1.049 SG

Boil Ingredients

Amt	Name	Type	#	%/IBU	Volume
6.00 g	Columbus (Tomahawk) [15.30 %] - Boil 60.0 min	Hop	7	9.7 IBUs	-
12.30 g	Gypsum (Calcium Sulfate) (Boil)	Water Agent	8	-	-
3.40 g	Calcium Chloride (Boil)	Water Agent	9	-	-
0.50 Items	Whirlfloc Tablet (Boil 15.0 mins)	Fining	10	-	-
1.50 g	Yeast Nutrient (Boil 15.0 mins)	Other	11	-	-
25.00 g	Simcoe [12.90 %] - Boil 10.0 min	Hop	12	20.8 IBUs	-
20.00 g	Columbus (Tomahawk) [15.30 %] - Boil 10.0 min	Hop	13	19.8 IBUs	-

Steeped Hops

Amt	Name	Type	#	%/IBU	Volume
50.00 g	Simcoe [12.90 %] - Steep/Whirlpool 30.0 min, 80.0 C	Hop	14	11.6 IBUs	-
34.00 g	Columbus (Tomahawk) [15.30 %] - Steep/Whirlpool 30.0 min, 80.0 C	Hop	15	9.4 IBUs	-
20.00 g	Mosaic (HBC 369) [13.00 %] - Steep/Whirlpool 30.0 min, 80.0 C	Hop	16	4.7 IBUs	-

Estimated Post Boil Vol: 26.00 L and Est Post Boil Gravity: 1.055 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	17	-	-

Measure Actual Original Gravity _____ (Target: 1.055 SG)
Measure Actual Batch Volume _____ (Target: 23.00 L)

Fermentation

13 Apr 2020 - Primary Fermentation (2.00 days at 18.0 C ending at 18.0 C)
15 Apr 2020 - Secondary Fermentation (6.00 days at 20.0 C ending at 20.0 C)
21 Apr 2020 - Tertiary Fermentation (5.00 days at 23.0 C ending at 23.0 C)

Dry Hop and Bottle/Keg

Dry Hop/Bottling Ingredients

Amt	Name	Type	#	%/IBU	Volume
75.00 g	Simcoe [12.90 %] - Dry Hop 5.0 Days	Hop	18	0.0 IBUs	-
40.00 g	Columbus (Tomahawk) [15.30 %] - Dry Hop 5.0 Days	Hop	19	0.0 IBUs	-
30.00 g	Mosaic (HBC 369) [13.00 %] - Dry Hop 5.0 Days	Hop	20	0.0 IBUs	-

Measure Final Gravity: _____ (Estimate: 1.009 SG)
Date Bottled/Kegged: - Carbonation: Keg with 13.72 PSI