League Roadrunner Hazy (AG) 38L

Hazy IPA (21 C)

Type: All Grain
Batch Size: 38.00 L
Boil Size: 44.00 L
Boil Time: 60 min
Final Bottling Vol: 38.00 L
Fermentation: Ale with Diacetyl Rest

Date: 15 Jan 2023
Efficiency: 75.00 %
Est Mash Efficiency: 79.9 %



Brewing Notes:
This recipe has no boil hop additions, all bitterness comes from the steep/whirlpool addition. The average temperature of the hop stand should be around 80C. 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 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 available, add sufficient lactic acid to the sparge water to lower the pH to ~5.6 prior to heating (~ 0.5 - 1.0 ml/10l lactic acid depending on water source).
2. If flavour minerals are available, add to boil only as mash pH is taken care of with acid malt. The target mash pH is ~5.4 (5.3 - 5.5).
3. If available, add kettle finings and yeast nutrient 15 min before the end of boil.
4. Cool the wort to 80C, add the whirlpool hops and maintain 80C for 30 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.
6. After 3 days, add the first dry hop addition and let the temperature rise to 20C.
7. Add the second dry hop addition near end of fermentation and raise the temp to 22C for a diacetyl rest.
8. Ferment for another 3-5 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 2.4 - 2.5 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
4.400 kg	Gladfield Pilsner Malt (3.8 EBC)	Grain	1	44.7 %	2.87 L
1.700 kg	Gladfield Vienna Malt (6.8 EBC)	Grain	2	17.3 %	1.11 L
1.000 kg	Big O - Malted Oats (4.5 EBC)	Grain	3	10.2 %	0.65 L
1.000 kg	Gladfield Wheat Malt (4.2 EBC)	Grain	4	10.2 %	0.65 L
1.000 kg	Harraway's Rolled Oats (2.8 EBC)	Grain	5	10.2 %	0.65 L
0.500 kg	Gladfield Sour Grapes Malt (4.0 EBC)	Grain	6	5.1 %	0.33 L
0.240 kg	BEST Red X (BESTMALZ) (30.0 EBC)	Grain	7	2.4 %	0.16 L

Mash Steps

Name	Description	Step Temperature	Step Time
Saccharification	Add 33.47 L of water at 72.0 C	67.0 C	60 min
Mash Out	Heat to 77.0 C over 10 min	77.0 C	10 min

◯ Fly sparge with 20.39 L water at 75.6 C
◯ Add water to achieve boil volume of 44.00 L
◯ Estimated pre-boil gravity is 1.053 SG

Boil Ingredients

Amt	Name	Type	#	%/IBU	Volume
16.20 g	Calcium Chloride (Boil)	Water Agent	8	-	-
7.00 g	Gypsum (Calcium Sulfate) (Boil)	Water Agent	9	-	-
1.00 Items	Whirlfloc Tablet (Boil 15.0 mins)	Fining	10	-	-
2.50 g	Yeast Nutrient (Boil 15.0 mins)	Other	11	-	-

Steeped Hops

Amt	Name	Type	#	%/IBU	Volume
120.00 g	Sabro [17.00 %] - Steep/Whirlpool 30.0 min, 80.0 C	Hop	12	21.9 IBUs	-
100.00 g	Nectaron (HORT 4337) [9.80 %] - Steep/Whirlpool 30.0…	Hop	13	10.5 IBUs	-

◯ Estimated Post Boil Vol: 41.50 L and Est Post Boil Gravity: 1.057 SG

Cool and Transfer Wort

◯ Cool wort to fermentation temperature
◯ Transfer wort to fermenter
◯ Add water if needed to achieve final volume of 38.00 L

Pitch Yeast and Measure Gravity and Volume

Fermentation Ingredients

Amt	Name	Type	#	%/IBU	Volume
3.0 pkg	SafAle English Ale (DCL/Fermentis #S-04) [0.02 L]	Yeast	14	-	-

◯ Measure Actual Original Gravity _____ (Target: 1.057 SG)
◯ Measure Actual Batch Volume _____ (Target: 38.00 L)

Fermentation

◯ 15 Jan 2023 - Primary Fermentation (3.00 days at 18.0 C ending at 18.0 C)
◯ 18 Jan 2023 - Secondary Fermentation (4.00 days at 20.0 C ending at 20.0 C)
◯ 22 Jan 2023 - 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
120.00 g	Sabro [17.00 %] - 3.0 Days Into Primary for 5.0 Days	Hop	15	0.0 IBUs	-
90.00 g	Nelson Sauvin [10.10 %] - 3.0 Days Into Primary for 5.0…	Hop	16	0.0 IBUs	-
100.00 g	Sabro [17.00 %] - 5.0 Days Before Bottling for 5.0 Days	Hop	17	0.0 IBUs	-
80.00 g	Nectaron (HORT 4337) [9.80 %] - 5.0 Days Before Bottlin…	Hop	18	0.0 IBUs	-

◯ Measure Final Gravity: _____ (Estimate: 1.012 SG)
◯ Date Bottled/Kegged: - Carbonation: Keg with 14.89 PSI