League 40 Nights (AG)

American Stout (20 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: 20 May 2020
Efficiency: 75.00 %
Est Mash Efficiency: 81.5 %



Brewing Notes:
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 - 50, Mg - 10, Na - 30, SO4 - 60, Cl - 60.

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 depending on water source).
2. If flavour minerals are available, add to boil only as mash pH is taken care of by the specialty malts.
3. For the salt addition, use plain (non-iodised) table salt or canning salt. This is included because the added sodium can enhance dark beer flavour.
4. If available, add yeast nutrient and kettle finings 15 min prior to the end of boil.
5. It is recommended that the yeast be rehydrated per the manufacturers instructions. Pitch at 18C and maintain for 2 days then let rise to 20C.
6. Once fermentation nears completion, raise the temp to 22C for a diacetyl rest and hold until fermentation is complete.
7. If possible, cold crash for a few days prior to packaging.
8. Carbonate to 2.6 - 2.7 volumes of CO2 (more carbonation than for a dry Irish stout).

Mash or Steep Grains

Mash Ingredients

Amt	Name	Type	#	%/IBU	Volume
3.700 kg	Gladfield American Ale Malt (4.7 EBC)	Grain	1	67.3 %	2.41 L
0.500 kg	Harraway's Rolled Oats (2.8 EBC)	Grain	2	9.1 %	0.33 L
0.480 kg	Gladfield Light Chocolate Malt (900.0 EBC)	Grain	3	8.7 %	0.31 L
0.400 kg	Gladfield Dark Crystal Malt (190.0 EBC)	Grain	4	7.3 %	0.26 L
0.340 kg	Gladfield Munich Malt (15.5 EBC)	Grain	5	6.2 %	0.22 L
0.080 kg	Gladfield Roast Barley (1450.0 EBC)	Grain	6	1.5 %	0.05 L

Mash Steps

Name	Description	Step Temperature	Step Time
Saccharification	Add 18.35 L of water at 72.1 C	67.0 C	75 min
Mash Out	Heat to 76.0 C over 10 min	76.0 C	10 min

◯ Fly sparge with 15.66 L water at 76.0 C
◯ Add water to achieve boil volume of 28.50 L

◯ Estimated pre-boil gravity is 1.048 SG

Boil Ingredients

Amt	Name	Type	#	%/IBU	Volume
50.00 g	Cascade [6.80 %] - Boil 60.0 min	Hop	7	35.8 IBUs	-
3.40 g	Gypsum (Calcium Sulfate) (Boil)	Water Agent	8	-	-
1.70 g	Calcium Chloride (Boil)	Water Agent	9	-	-
1.40 g	Salt (Boil)	Water Agent	10	-	-
0.50 Items	Whirlfloc Tablet (Boil 15.0 mins)	Fining	11	-	-
1.50 g	Yeast Nutrient (Boil 15.0 mins)	Other	12	-	-
50.00 g	Cascade [6.80 %] - Boil 5.0 min	Hop	13	17.4 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	Liberty Bell (Mangrove Jack's #M36)	Yeast	14	-	-

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

Fermentation

◯ 20 May 2020 - Primary Fermentation (2.00 days at 18.0 C ending at 18.0 C)
◯ 22 May 2020 - Secondary Fermentation (7.00 days at 20.0 C ending at 20.0 C)
◯ 29 May 2020 - Tertiary Fermentation (3.00 days at 22.0 C ending at 22.0 C)

Dry Hop and Bottle/Keg

◯ Measure Final Gravity: _____ (Estimate: 1.012 SG)
◯ Date Bottled/Kegged: - Carbonation: Keg with 17.22 PSI