

Bells_HopSlam.xlsx

Category: 21. IPA
 Style: 21A. American IPA

Brewer: BEER-N-BBQ by Larry
 Brew Date: February 10, 2019

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Grain Bill, Adjuncts, & Sugars		
Type	Qty lb	% of Bill
Pale Malt: Brewers Malt, 2-row (Briess)	11.00	59.9%
Pale Ale Malt: Pale Ale Malt (Rahr)	5.50	29.9%
Caramel Malt: Caramel Malt 40L (Briess)	0.50	2.7%
Sugar: Honey	0.75	4.1%
Sugar: Corn Sugar (Dextrose)	0.63	3.4%

Recipe Outputs		
	Design	Actual
Extract Eff.:	78.6%	67.3%
Brewhouse Eff.:	69.9%	67.5%
Pre-Boil SG:	1.076	1.063
O.G.:	1.087	1.079
F.G.:	1.017	1.010
Ferm Vol:	22.0	23.5
Batch Vol:	20.0	20.0
App Atten:	81.0%	86.7%
IBUs:	46	44
ABV:	9.1%	8.9%
SRM:	7.0	6.8

Water Information		
Chicago (Lake Michigan)		
ppm (mg/L)	Orig.	Adj.
Calcium	37	60
Magnesium	12	12
Sodium	9	9
Chloride	16	16
Sulfate	25	80
Alkalinity	102	102
Cl/SO ₄ Ratio	0.64	0.20

Brewing Process Parameters			
Name	Design	Actual	Units
Total Water Req'd	38.11	38.00	qt
Ambient Grain Temp	68.0		°F
Desired Mash Temp	149.0	149.0	°F
Strike Water Volume	21.25	24.00	qt
Strike Water Temp	162.0	162	°F
Estimated Mash pH	5.3		5.3
Sparge Water Req'd	16.86	14.00	qt

Fly Sparge	-	-	-	
	-	-	-	
	Time Req'd	16.86	20.00	min
	Flow Rate	1.00	0.70	qt/min
	Pre-Boil Volume	28.76	30.50	qt

Hop Bill & Schedule					
Species	Type	Alpha (%)	Qty oz	AAU	Time (min)
Crystal	Pellet	4.3	0.50	2.2	45
Mosaic™	Pellet	12.7	0.50	6.4	20
Glacier (U.S.)	Pellet	5.3	0.50	2.7	20
Centennial	Pellet	10.8	1.00	10.8	15
Mosaic™	Pellet	12.7	0.50	6.4	5
Glacier (U.S.)	Pellet	5.3	0.50	2.7	5
Amarillo®	Pellet	8.6	2.00	17.2	Hop Stand (15)
Crystal	Pellet	4.3	0.50	2.2	Hop Stand (15)
Simcoe®	Pellet	13.4	4.00	53.6	Dry Hop

Water Additions (grams)		
	Mash	Sparge
Gypsum	2.0	1.6
Cal Chloride	0.0	0.0
Epson Salt	0.0	0.0
Slaked Lime	0.0	0.0
Baking Soda	0.0	0.0
Chalk	0.0	0.0

Yeast Information		
Fermentis		
SafAle US-05		
Ferm Temp:	64-82	°F

Forced Carbonation		
CO2 Volume	2.5	2.5
Temperature	38.0	°F
Pressure	11.2	PSI

Preferred SG Tool		Hydrometer		
Pre-Boil S.G.	Hydro.	1.076	1.062	Temp
	Corr SG		1.063	69.5
	Refract.		14.8	° Brix
	Corr SG		1.060	1.060
	Extract Efficiency (Grains Only)	78.6%	67.3%	Hydro.
			63.9%	Refrac
	Boil Time	75	75	min
	Post-Boil Volume	25.25	26.00	qt
Original Gravity	Hydro.	1.087	1.078	Temp
	Corr SG		1.079	65.6
	Refract.		18.8	° Brix
	Corr SG		1.078	1.078
	Fermenter Volume	22.0	23.5	qt
Final Gravity	Hydro.	1.017	1.010	Temp
	Corr SG		1.010	64.5
	Refract.		8.2	° Brix
	Corr SG		1.012	1.012
	Target Batch Size	20.0	20.0	qt

Other Ingredients/Additions	Amount	When
Yeast nutrient	1 tsp	Boil
Dry Yeast	2 pkg	Ferm

NOTES: Recipe adapted from BYO Magazine recipe, modified for my Grainfather, and scaled up to provide 5.5 gallons into the fermenter. 70 min mash. Mash out at 168 for 10 min. Add honey and corn sugar at end of boil with hop stand additions. Stir well, whirlpool, then let settle for 15 minutes before chilling. Aerate well with oxygen tank and aeration stone for 5+ minutes. Dry hop on day 5. Beware: Resulting very thick mash required addition of 3 more quarts water to mash in. Almost overflowed the overflow pipe! Grain bill pushed the GF to it's limit. Forgot gypsum mash addition.
 Tasting Notes: IBUs estimates may be on the low side of the actual bitterness. Very good beer! Very similar to original but ultimately preferred the clone.

YouTube Channel: BEERNBBQBYLARRY
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