

Marzen-20190817.xlsx

Category: 6. Amber Malty European Lager
 Style: 6A. Märzen

Brewer: BEER-N-BBQ by Larry
 Brew Date: August 17, 2019

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Grain Bill, Adjuncts, & Sugars		
Type	Qty lb	% of Bill
Pale Malt: Brewers Malt, 2-row (Briess)	10.00	40.0%
Munich Malt: Dark Munich Malt (Avangard)	10.00	40.0%
Vienna Malt: Goldpils® Vienna Malt (Briess)	5.00	20.0%

Recipe Outputs		
	Design	Actual
Extract Eff.:	75.0%	77.9%
Brewhouse Eff.:	66.5%	66.1%
Pre-Boil SG:	1.049	1.050
O.G.:	1.056	1.056
F.G.:	1.014	1.015
Ferm Vol:	44.0	44.0
Batch Vol:	40.0	40.0
App Atten:	75.0%	73.8%
IBUs:	22	21
ABV:	5.5%	5.4%
SRM:	9.5	9.5

Water Information		
Chicago (Lake Michigan)		
ppm (mg/L)	Orig.	Adj.
Calcium	37	56
Magnesium	12	12
Sodium	9	9
Chloride	16	50
Sulfate	25	25
Alkalinity	102	
Cl/SO ₄ Ratio	0.64	2.02

Water Additions (grams)		
	Mash	Sparge
Gypsum	0.0	0.0
Cal Chloride	5.0	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		
Wyeast		
Octoberfest Lager Blend 2633		
Ferm Temp:	48-58	°F

Forced Carbonation		
CO2 Volume	2.6	
Temperature	38.0	°F
Pressure	12.3	PSI

Hop Bill & Schedule					
Species	Type	Alpha (%)	Qty oz	AAU	Time (min)
Tettnanger (U.S.)	Pellet	3.2	3.00	9.6	60
Tettnanger (U.S.)	Pellet	3.2	3.00	9.6	15

Other Ingredients/Additions	Amount	When
Whirfloc tablet	1	15 min
Gelatin	1-2 tsp	post-ferm

Brewing Process Parameters			
Name	Design	Actual	Units
Total Water Req'd	74.08		qt
Ambient Grain Temp	72.0	75.0	°F
Desired Mash Temp	153.0	155.0	°F
Strike Water Volume	31.25	31.50	qt
Strike Water Temp	165.5	166	°F
Estimated Mash pH	5.6		
Mash Time	90	90	min
Sparge Water Volume	42.83	43.00	qt
Batch Sparge	Add	14.04	qt
	Drain	28.79	43.00
	Add/Drain	28.79	14.60
Add/Drain	0.00	0.00	qt
Pre-Boil Volume	57.58	58.40	qt
Grain Absorption Rate	0.60	0.58	qt/lb
Preferred SG Tool	Hydrometer		
Pre-Boil SG Grains Only	Hydro.	1.049	1.045
	Corr SG		1.050
	Refract.	12.0	12.4
Corr SG		1.050	
Pre-Boil SG Total	Hydro.	75.0%	77.9%
	Corr SG		78.5%
	Refract.	1.049	1.045
Corr SG		1.050	
Boil Time	90	90	min
Post-Boil Volume	49.60	50.00	qt
Boil-Off Rate	4.00	4.28	qt/hr
Original Gravity	Hydro.	1.056	1.053
	Corr SG		1.056
	Refract.	13.9	13.8
Corr SG		1.056	
Fermenter Volume	44.00	44.00	qt
Hop Absorption Rate	0.10	0.17	qt/oz
Final Gravity	Hydro.	1.014	1.013
	Corr SG		1.015
	Refract.	3.6	7.5
Corr SG		1.014	
Target Batch Size	40.0	40.0	qt

NOTES: Single infusion mash. Ferment under pressure (15 psi max) at 65-70 F. Wait a couple extra days for diacetyl rest to finish. Rack to keg and chill into the mid 30's F. Add gelatin (after preparing per instructions). Purge CO2 from head space. Force carbonate for at least another couple of day.
 Gelatin Instructions: Boil 1/2 cup water for a few minutes to sanitize it. Allow to cool a bit (<-170 F). Mix in 1-2 tsp gelatin.