BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew			
Name:	Clorona		
Brew Date:	2015 May 31	Collected (gal):	11.00
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2015 July 1	Kegged/Bottled (gal):	10.00

Estimated		Actual	
ABV (%):	3.9%	ABV (%):	4.7%
OG (SG):	1.040	OG (SG):	1.042
FG (SG):	1.010	FG (SG):	1.006
IBU:	15.4	IBU:	15.2
SRM:	2.7	SRM:	2.7
IBU/Gravity Ratio:	0.38	IBU/Gravity Ratio:	0.36

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	12.00	1.036	0.027	2.0	71.22%
Carapils/Dextrine	0.85	1.033	0.002	2.0	5.04%
Corn sugar (dextrose)	4.00	1.043	0.011	0.0	23.74%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Glacier	P	0.78	60	5.6%	7.5	20.63%
Tettnanger (US)	P	1.00	60	4.6%	7.9	26.46%
Tettnanger (US)	P	2.00	0	4.6%	0.0	52.91%

Design Notes

Add 4# corn sugar at T-20.
Zero dextrose to precisely calculate strike water.

Batch Variables and Calculations	
Batch Size (gal):	11.00
Grain Temperature (F):	76
Total Grain Weight (lbs):	12.85
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	148
Strike Water (gal):	8.47
Strike Temperature (F):	160
Mash Ratio (qts/lb):	2.64
Grain Absorption (gal):	1.61
Mash Volume (gal):	9.50
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	6.72
First Runnings (gal):	6.95
First Runnings Gravity (Brix):	10.40
First Runnings Gravity (SG):	1.040
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	6.26
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	6.73
Second Runnings (gal):	6.40
Second Runnings Gravity (Brix):	3.40
Second Runnings Gravity (SG):	1.013
Estimated Preboil Volume (gal):	13.46
Estimated Preboil Gravity (Brix):	7.04
Preboil Volume (gal):	13.35
Preboil Gravity (Brix):	7.00
Preboil Gravity (SG):	1.027
Extraction Efficiency (%):	79%
Boil	
Boil Time (min):	60
Estimated Evaporation Loss (gal):	1.32
Hop Absorption (gal):	0.09
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.21
Actual Evaporation Loss (gal):	1.21
Original Gravity (Brix):	10.74
Batch Size Efficiency (%):	73%
Actual Efficiency (%):	73%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	51
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	2
Secondary Fermentation Temperature (F):	63
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	28
Tertiary Fermentation Temperature (F):	32
Final Gravity (SG):	1.006
Temperature of Reading (F):	40
Corrected SG:	1.006
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	136
12 oz. Bottles Required:	102
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	2.60
Priming Sugar (oz):	
DME (oz):	
Forced Carbonation (lbs):	

System Variables	
Brewhouse Efficiency (%):	70%
Volume in Hoses (gal):	0.22
Volume in Wort Chiller (gal):	0.19
Volume in HERMS Coil (gal):	0.25
Mash/Lauter Tun Deadspace (gal):	0.14
Strike to Sparge Volume Ratio (%):	50%
Trub Loss (gal):	0.16
FWH IBU Factor (%):	10%
Strike Temperature Factor (F):	7
Sparge Temperature Factor (F):	4
Estimated Evaporation Rate (gal/hr):	1.32
Leaf Hop Absorption Ratio (qts/oz):	0.40
Pellet Hop Absorption Ratio (qts/ oz):	0.10
Cooling Losses (%):	4%
Hydrometer Correction (SG):	0.001

BJCP Style Guidelines	
Style:	Lite American Lager
Code:	1A
OG:	1.028-1.040
FG:	0.998-1.008
IBU:	8.0-12.0
SRM:	2.0-3.0
ABV:	2.8-4.2%
CO2:	2.5-2.7

Yeast Strain	
Yeast Strain:	White Labs WLP940 (Mexican Lager)
Type:	Mexican Lager
Attenuation (%):	70-78%
Actual Attenuation (%):	85%
Fermentation Temp (F):	50-55F
Flocculation:	medium

Required Amounts	
Cell Count (billions):	624
Vials (White Labs/Wyeast):	11.8
Dry Yeast (g):	31.2
Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	3
Date Yeast Produced:	2015 March 20
Yeast Viability (%):	53%
Yeast Growth Rate:	3.94
Yeast Innoculation Rate (million/ml):	28.11
Starter Volume Required (ml);	4000
DME Required (oz):	13.00
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	557

User Variables	

Batch Scaling				
Desired OG:	1.040	Total Weight (lbs):		16.77
Batch Size (gal):	11.00	Total Bill:		100.00%
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Pale Malt (2-Row) US	11.74	1.036	2.0	70.00%
Carapils/Dextrine	0.84	1.033	2.0	5.00%
Corn sugar (dextrose)	4.19	1.043	0.0	25.00%

Poundage		
Goal (lbs):	0.85	
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
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Amount (lbs | oz.f_oz):		
Needed (lbs | oz.f_oz):	0	13.60

Hydrometer Correction		
SG:	1.039	
Temperature (F):	74	
Corrected SG:	1.042	

Gravity Calculator			
Brix:	9.05	10.74	
Specific Gravity:	1.035	1.042	
Degrees Plato:	8.79	10.36	

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

5/28: made a 4L starter.
6/11: increased temp to 56F to begin diacetyl rest.
6/12: increased temp to 61F then to 64F.
6/13: 1.009 SG and sample tastes great! Reduced temp in the evening to 59F.
6/14: Reduced temp to 52F then to 42F.
6/15: Reduced temp to 32F.
7/1: kegged; first batch is 1.006 FG (4.7% ABV); aroma is grainy, clean, and crisp with some corn; flavor is dry, crisp, slight grain with a wonderful lager finish that hints at corn.
Second batch is almost exactly the same, but perhaps a bit more crisp and clean.