BREWSHEET v3.3 (2012-03-18)

user input
calculated

Brew			
Name:	Clorona		
Brew Date:	2012 February 21	Collected (gal):	12.45
Rack Date:	2012 March 8	Racked (gal):	11.50
Keg/Bottle Date:	2012 April 9	Kegged/Bottled (gal):	11.50
Estimated		**Actual**	
ABV (%):	4.7%	ABV (%):	5.4%
OG (SG):	1.048	OG (SG):	1.049
FG (SG):	1.013	FG (SG):	1.008
IBU:	21.4	IBU:	18.8
SRM:	2.7	SRM:	2.5
IBU/Gravity Ratio:	0.44	IBU/Gravity Ratio:	0.38

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	12.00	1.036	0.027	2.0	62.34%
Carapils/Dextrine	1.00	1.033	0.002	2.0	5.19%
Corn sugar (dextrose)	5.00	1.040	**0.018**	0.0	25.97%
Flaked Corn	0.25	1.037	0.001	1.3	1.30%
Rice hulls	1.00	1.000	0.000	0.0	5.19%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Cluster	P	2.50	60	5.0%	20.0	50.00%
Hallertauer (GR)	P	2.50	2	4.3%	1.5	50.00%

Design Notes

Add corn sugar at beginning of boil.
Added flaked corn at the last minute because I needed to get rid of it...
Split with Ryan.
Make yeast starter with half as much volume, half as many vials, and half as much DME.
Yeast production date is average of both vials I have.

Batch Variables and Calculations	
Batch Size (gal):	11.00
Grain Temperature (F):	64
Total Grain Weight (lbs):	19.25
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	151
Strike Water (gal):	9.58
Strike Temperature (F):	167
Mash Ratio (qts/lb):	1.99
Grain Absorption (gal):	2.41
Mash Volume (gal):	11.12
Mash-out Temperature (F):	170
Estimated First Runnings (gal):	7.03
First Runnings (gal):	7.44
First Runnings Gravity (Brix):	10.62
First Runnings Gravity (SG):	1.041
Sparge	
Desired Sparge Temperature (F):	170
Sparge Water (gal):	6.56
Sparge Water Temperature (F):	174
Estimated Second Runnings (gal):	7.03
Second Runnings (gal):	6.11
Second Runnings Gravity (Brix):	2.96
Second Runnings Gravity (SG):	1.011
Estimated Preboil Volume (gal):	14.07
Estimated Preboil Gravity (Brix):	7.17
Preboil Volume (gal):	13.55
Preboil Gravity (Brix):	10.60
Preboil Gravity (SG):	1.041
Extraction Efficiency (%):	83%
Boil	
Boil Time (min):	60
Estimated Evaporation Loss (gal):	1.90
Estimated Hop Absorption (gal):	0.13
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.50
Actual Evaporation Loss (gal):	0.53
Original Gravity (Brix):	12.63
Batch Size Efficiency (%):	80%
Actual Efficiency (%):	90%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	50
Gravity After Primary Fermentation (SG):	1.017
Temperature of Reading (F):	52
Corrected SG:	1.016
Secondary Fermentation (days):	3
Secondary Fermentation Temperature (F):	65
Gravity After Secondary Fermentation (SG):	1.008
Temperature of Reading (F):	67
Corrected SG:	1.008
Tertiary Fermentation (days):	28
Tertiary Fermentation Temperature (F):	35
Final Gravity (SG):	1.010
Temperature of Reading (F):	41
Corrected SG:	1.008
Target Fermentation for Diacetyl Rest (%):	85%
Target Gravity for Diacetyl Rest (SG):	1.018
Calories per Pint:	160
12 oz. Bottles Required:	117
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	2.40
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):	1.90
Leaf Hop Absorption Ratio (qts/oz):	0.20
Pellet Hop Absorption Ratio (qts/ oz):	0.10
Cooling Losses (%):	4%
Hydrometer Correction (SG):	-0.001

BJCP Style Guidelines	
Style:	Classic American Pilsner
Code:	2C
OG:	1.044-1.060
FG:	1.010-1.015
IBU:	25.0-40.0
SRM:	3.0-6.0
ABV:	4.4-5.2%
CO2:	2.3-2.5

Yeast Strain	
Yeast Strain:	White Labs WLP940 (Mexican Lager)
Type:	Mexican Lager
Attenuation (%):	70-78%
Actual Attenuation (%):	84%
Fermentation Temp (F):	50-55F
Flocculation:	medium

Required Amounts	
Cell Count (billions):	746
Vials (White Labs/Wyeast):	10.2
Dry Yeast (g):	37.4

Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	3
Date Yeast Produced:	2012 January 11
Yeast Viability (%):	73%
Yeast Growth Rate:	3.4
Yeast Innoculation Rate (million/ml):	38.68
Starter Volume Required (ml);	5671
DME Required (oz):	18.43
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	458

User Variables	

Batch Scaling				
Desired OG:		Total Weight (lbs):		
Batch Size (gal):		Total Bill:		
Brewhouse Efficiency (%):				
Grain	**Pounds**	**Potential**	**Color**	**% Bill**

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

Hydrometer Correction		
SG:		
Temperature (F):		
Corrected SG:		

Gravity Calculator			
Brix:			
Specific Gravity:			
Degrees Plato:			

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

Accidentally pitched yeast on hot wort when making starter; so pitching 3 new vials.
2/21: changed corn sugar to 5# (from 5.5#); preboil gravity was 7.45 Brix (1.029 SG) before addition.
Topped off preboil by about 1.2 gal.
Collected an extra 1.7 gals in an extra bucket (why waste).
I think Ryan's sight gauge is off or at least it was off due to the submerged tube in the wort.
So volumes may be off; let's call evaporation rate 1.5 gal/hr.
Next time, adjust corn sugar for 100% efficiency.
2/27: 1.025 SG (0.024 SG in 6 days: 0.004/day); check again in 2 days.
2/29: 1.018 SG (0.007 SG in 2 days: 0.0035/day); at 85% fermentation.
Diacetyl rest tomorrow morning.
3/1: 1.016 SG; took out of fermenter to rest until fermentation is finished.
3/4: 1.010 SG; checking for diacetyl.
No noticeable diacetyl; aromas were basically the same.
Continued rest anyways because Heil Bier! needed it; temp raised to 68F.
3/8: 1.008 SG (66.5F); 5.4% ABV.
No diacetyl present; racked; lagering.
Racked my 5 gal but decided to rest the 1.45 gal that was sitting in the beer fridge.
I assume that Ryan racked 5 gal.
3/10: collected another 1.5 gal for lagering; SG is almost the same.
3/20: beer fridge went out, so needed the lagering fridge for serving; moved to ambient and covered.
3/22: beer went back to lagering temps.
Smaller jugs left uncovered at ambient temps.
4/9: kegged; great aroma and flavor; probably my best version so far.
Nice Corona aroma and flavor, but without the skunkiness.
Left the extra in growlers continue to sit at ambient temps; will bottle when I have more time.
I assume Ryan kegged/will keg 5 gals.
5/11: slight diacetyl presence in warmed samples; not too bad though.