BREWSHEET v3.3 (2012-03-18)

user input
calculated

Brew			
Name:	Dos Testes		
Brew Date:	2012 December 16	Collected (gal):	11.00
Rack Date:	2013 January 8	Racked (gal):	10.15
Keg/Bottle Date:	2013 February 8	Kegged/Bottled (gal):	10.00
Estimated		**Actual**	
ABV (%):	3.9%	ABV (%):	5.1%
OG (SG):	1.040	OG (SG):	1.048
FG (SG):	1.011	FG (SG):	1.009
IBU:	14.3	IBU:	13.4
SRM:	3.6	SRM:	3.6
IBU/Gravity Ratio:	0.35	IBU/Gravity Ratio:	0.28

Grain	Pounds	Potential	SG Share	Color	% Bill
Northwestern Pale Ale malt	8.00	1.036	0.018	2.8	45.71%
Pilsner (2-Row) Germany	5.00	1.037	0.012	2.0	28.57%
Carapils/Dextrine	1.00	1.033	0.002	2.0	5.71%
Flaked Corn	3.50	1.037	0.008	1.3	20.00%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Hersbrucker	P	2.00	60	2.5%	8.6	50.00%
Hersbrucker	P	1.00	20	2.5%	2.6	25.00%
Saaz (CZ)	P	1.00	20	3.0%	3.1	25.00%

Design Notes

Batch Variables and Calculations	
Batch Size (gal):	11.00
Grain Temperature (F):	72
Total Grain Weight (lbs):	17.50
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	150
Strike Water (gal):	9.48
Strike Temperature (F):	164
Mash Ratio (qts/lb):	2.17
Grain Absorption (gal):	2.19
Mash Volume (gal):	10.88
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	7.15
First Runnings (gal):	7.00
First Runnings Gravity (Brix):	14.25
First Runnings Gravity (SG):	1.055
Sparge	
Desired Sparge Temperature (F):	170
Sparge Water (gal):	6.68
Sparge Water Temperature (F):	175
Estimated Second Runnings (gal):	7.15
Second Runnings (gal):	7.31
Second Runnings Gravity (Brix):	5.40
Second Runnings Gravity (SG):	1.021
Estimated Preboil Volume (gal):	14.31
Estimated Preboil Gravity (Brix):	9.73
Preboil Volume (gal):	14.31
Preboil Gravity (Brix):	10.75
Preboil Gravity (SG):	1.042
Extraction Efficiency (%):	94%
Boil	
Boil Time (min):	90
Estimated Evaporation Loss (gal):	2.17
Hop Absorption (gal):	0.10
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.45
Actual Evaporation Loss (gal):	2.17
Original Gravity (Brix):	12.29
Batch Size Efficiency (%):	83%
Actual Efficiency (%):	83%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	52
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	65
Secondary Fermentation Temperature (F):	2
Gravity After Secondary Fermentation (SG):	1.015
Temperature of Reading (F):	61
Corrected SG:	1.014
Tertiary Fermentation (days):	28
Tertiary Fermentation Temperature (F):	32
Final Gravity (SG):	1.011
Temperature of Reading (F):	36
Corrected SG:	1.009
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	156
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):	1.44
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:	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 (%):	81%
Fermentation Temp (F):	50-55F
Flocculation:	medium

Required Amounts	
Cell Count (billions):	629
Vials (White Labs/Wyeast):	11.2
Dry Yeast (g):	31.5
Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	2
Date Yeast Produced:	2012 October 10
Yeast Viability (%):	56%
Yeast Growth Rate:	5.61
Yeast Innoculation Rate (million/ml):	12.99
Starter Volume Required (ml);	8631
DME Required (oz):	28.05
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	523

User Variables

Batch Scaling				
Desired OG:	1.040	Total Weight (lbs):	17.32	
Batch Size (gal):	11.00	Total Bill:	100.00%	
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Northwestern Pale Ale malt	7.97	1.036	2.8	46.00%
Pilsner (2-Row) Germany	5.02	1.037	2.0	29.00%
Carapils/Dextrine	1.04	1.033	2.0	6.00%
Flaked Corn	3.29	1.037	1.3	19.00%

Poundage		
Goal (lbs):	8.00	
Amount (lbs | oz.f_oz):	2	5.18
Amount (lbs | oz.f_oz):	2	1.40
Amount (lbs | oz.f_oz):	2	6.69
Amount (lbs | oz.f_oz):	1	2.73
Amount (lbs | oz.f_oz):		
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Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Needed (lbs | oz.f_oz):	0	0.00

Hydrometer Correction		
SG:	1.048	
Temperature (F):	65	
Corrected SG:	1.048	

Gravity Calculator		
Brix:	11.00	12.29
Specific Gravity:	1.043	1.048
Degrees Plato:	10.60	11.79

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

12/12: changed recipe to 5.5 gal because yeast was a little old; made 1.8L starter.
12/13: changed my mind; back to 11 gal; stepped up 2L to 2*3L (added 4L fresh starter).
12/16: realized that strike volume has been miscalculated because of rice hulls addition
Best way to handle this is not to add the item in the grain bill.
1/5: diacetyl rest (raised temp to 62F).
1/8: racked and lowered to lagering temp (at 6F per day).
Target is 56F today, 50F on 1/9, 44F on 1/10, 38F on 1/11, and 32F on 1/12
Slight diacetyl in aroma and flavor at this temp; should be fine after lagering and once cooled.
Placed carboys at room temp for a few more days.
We'll see the difference in a month.
Otherwise, aroma is nice and crisp with distinct corn; flavor is similar and quite dry for the SG.
2/8: slight diacetyl in aroma with a lot of corn; pretty clean otherwise.
Flavor is big corn, slight grain, and quite dry; good bitterness (perhaps higher than actual).
2/10: no diacetyl at all; perhaps was more of a grainy thing with corn.
Very clean beer with no noticeable flaws; great lawnmower brew!
4/7: After several months in the keg, I would nost likely not change the recipe.