BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew			
Name:	German Hombre		
Brew Date:	2016 May 7	Collected (gal):	11.00
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2016 June 6	Kegged/Bottled (gal):	10.00
Estimated		**Actual**	
ABV (%):	5.0%	ABV (%):	5.4%
OG (SG):	1.052	OG (SG):	1.051
FG (SG):	1.014	FG (SG):	1.010
IBU:	19.1	IBU:	19.3
SRM:	5.3	SRM:	5.3
IBU/Gravity Ratio:	0.37	IBU/Gravity Ratio:	0.38

Grain	Pounds	Potential	SG Share	Color	% Bill
Vienna Malt	12.66	1.036	0.029	3.5	60.31%
Maris Otter Malt	6.33	1.038	0.015	4.0	30.16%
Corn sugar (dextrose)	2.00	1.043	0.008	0.0	9.53%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Hallertauer (GR)	P	4.00	45	2.7%	15.3	68.61%
Hallertauer (GR)	P	1.83	15	2.7%	3.8	31.39%

Design Notes

Add corn sugar at T-20.
Zero dextrose to precisely calculate strike water.
Recalculate red, bold values.
make 10L wort @T-8: 1L into 2L flask (#1), pitch yeast, 3L into 6L flask (#2), 6L into 6L flask (#3)
ferment #1; when done, pour 1L fresh wort from #2 to #1 @T-6: #1 now has 2L fermenting,
#2 now has 2L fresh wort, #3 still has 6L fresh wort
when done, pour 2L from #1 to #2 @T-5: #1 is now empty (clean for later use),
#2 now has 4L fermenting, #3 still has 6L fresh wort
when done: @T-4: pour 2L fermented wort from #2 into #1 (sanitized)
pour 3L fresh wort from #3 into #2, pour 2L fermented wort from #1 into #3,
#1 is now empty (clean and store), #2 now has 5L fermenting, #3 now has 5L fermenting
when done, cold crash for >= 48 hours @T-2.5-ish

Mash-in at 1.5qts/lb to a target temp of 127F; rest for 45 min.
5 min into the rest, decoct 2.5 gal (@0.65 qts/lb – thick), boil for 40 min, return to raise mash
temp to 150F; rest for 60 min.
With 25 min left in the rest, decoct 2.5 gal (@1.5 qts/lb – thin), boil for 20 min, return to raise
mash temp to 168F; recirculate for 15 min and collect first runnings.
Sparge at 168F, recirculate, and collect second runnings.

Batch Variables and Calculations	
Batch Size (gal):	11.00
Grain Temperature (F):	76
Total Grain Weight (lbs):	18.99
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	148
Strike Water (gal):	9.30
Strike Temperature (F):	162
Mash Ratio (qts/lb):	1.96
Grain Absorption (gal):	2.37
Mash Volume (gal):	10.81
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	6.79
First Runnings (gal):	6.90
First Runnings Gravity (Brix):	13.00
First Runnings Gravity (SG):	1.050
Sparge	
Desired Sparge Temperature (F):	170
Sparge Water (gal):	6.31
Sparge Water Temperature (F):	175
Estimated Second Runnings (gal):	6.78
Second Runnings (gal):	6.65
Second Runnings Gravity (Brix):	6.40
Second Runnings Gravity (SG):	1.025
Estimated Preboil Volume (gal):	13.55
Estimated Preboil Gravity (Brix):	9.76
Preboil Volume (gal):	13.55
Preboil Gravity (Brix):	9.75
Preboil Gravity (SG):	1.038
Extraction Efficiency (%):	74%
Boil	
Boil Time (min):	60
Estimated Evaporation Loss (gal):	1.36
Hop Absorption (gal):	0.15
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.36
Actual Evaporation Loss (gal):	1.36
Original Gravity (Brix):	13.04
Batch Size Efficiency (%):	80%
Actual Efficiency (%):	80%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	52
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	3
Secondary Fermentation Temperature (F):	62
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	28
Tertiary Fermentation Temperature (F):	32
Final Gravity (SG):	1.010
Temperature of Reading (F):	40
Corrected SG:	1.010
Target Fermentation for Diacetyl Rest (%):	70%
Target Gravity for Diacetyl Rest (SG):	1.024
Calories per Pint:	166
12 oz. Bottles Required:	102
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	2.50
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):	1.36
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:	Vienna Lager
Code:	3A
OG:	1.046-1.052
FG:	1.010-1.014
IBU:	18.0-30.0
SRM:	10.0-16.0
ABV:	4.5-5.7%
CO2:	2.4-2.6

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):	800
Vials (White Labs/Wyeast):	10.0
Dry Yeast (g):	40.1
Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	4
Date Yeast Produced:	2016 April 6
Yeast Viability (%):	80%
Yeast Growth Rate:	2.51
Yeast Innoculation Rate (million/ml):	75.09
Starter Volume Required (ml);	**5000**
DME Required (oz):	16.25
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	447

User Variables	

Batch Scaling				
Desired OG:	1.050	Total Weight (lbs):	20.46	
Batch Size (gal):	11.00	Total Bill:	100.00%	
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Vienna Malt	12.66	1.036	3.5	60.00%
Maris Otter Malt	6.33	1.038	4.0	30.00%
Corn sugar (dextrose)	1.48	1.043	0.0	10.00%

Poundage		
Goal (lbs):	12.67	
Amount (lbs | oz.f_oz):	2	2.29
Amount (lbs | oz.f_oz):	2	3.10
Amount (lbs | oz.f_oz):	2	6.77
Amount (lbs | oz.f_oz):	2	9.23
Amount (lbs | oz.f_oz):	1	14.19
Amount (lbs | oz.f_oz):		
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Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Needed (lbs | oz.f_oz):	1	7.09

Hydrometer Correction	
SG:	1.048
Temperature (F):	73
Corrected SG:	1.051

Gravity Calculator		
Brix:	12.00	13.04
Specific Gravity:	1.047	1.051
Degrees Plato:	11.52	12.47

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

4/30: made 5L wort and cold crashed a few days later.
6/6: kegged.
Batch 1: 1.010 FG (5.4% ABV); slightly darker than Clorona; aroma similar, although more from the malt; flavor is less pronounced in terms of yeast from Clorona (again, more from the malt).
Batch 2: 1.009 FG (5.4% ABV); appearance same as batch 1; similar aroma and flavor; more maltiness, with less contribution from the yeast (but still with a wonderful yeast profile).
Finish is clean, crisp, and dry.
6/27: color is darker than Clorona; aroma is quite similar, perhaps with a bit more yeastiness, maltiness and graininess; flavor is also similar but is more malty, grainy, peppery, and yeasty;
Finish is clean, crisp, and dry.