BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew			
Name:	Quadrupel Threat		
Brew Date:	2016 March 26	Collected (gal):	5.10
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2016 May 1	Kegged/Bottled (gal):	5.00
Estimated		**Actual**	
ABV (%):	10.1%	ABV (%):	10.6%
OG (SG):	1.100	OG (SG):	1.097
FG (SG):	1.023	FG (SG):	1.016
IBU:	25.3	IBU:	28.0
SRM:	36.7	SRM:	38.7
IBU/Gravity Ratio:	0.25	IBU/Gravity Ratio:	0.29

Grain	Pounds	Potential	SG Share	Color	% Bill
Pilsner (2-Row) Germany	15.00	1.037	0.071	2.0	72.29%
Munich Malt 10L	1.25	1.035	0.006	10.0	6.02%
Belgian aromatic malt	0.75	1.036	0.003	26.0	3.61%
Belgian Special "B"	0.75	1.030	0.003	220.0	3.61%
Belgian candi syrup d-180	1.00	1.032	0.006	180.0	4.82%
Belgian candi syrup d-90	2.00	1.032	0.012	90.0	9.64%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Hallertauer (GR)	P	2.75	60	2.7%	14.9	52.38%
Hallertauer (GR)	P	2.50	30	2.7%	10.4	47.62%

Design Notes

Mash at 146F for 60 min then at 156F for 30 min; mash-out at 168F for 10 min.
Add candi syrup at 10 min left in boil.
Ferment at 64 for 24 to 48 hours; then let the yeast rise the temp to 78F until fermentation is done; rack to secondary for a month after fermentation is done.

Batch Variables and Calculations	
Batch Size (gal):	5.50
Grain Temperature (F):	68
Total Grain Weight (lbs):	20.75
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	146
Strike Water (gal):	6.52
Strike Temperature (F):	165
Mash Ratio (qts/lb):	1.26
Grain Absorption (gal):	2.59
Mash Volume (gal):	8.18
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	3.79
First Runnings (gal):	4.00
First Runnings Gravity (Brix):	18.10
First Runnings Gravity (SG):	1.070
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	4.15
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	4.62
Second Runnings (gal):	4.50
Second Runnings Gravity (Brix):	9.80
Second Runnings Gravity (SG):	1.038
Estimated Preboil Volume (gal):	8.40
Estimated Preboil Gravity (Brix):	13.71
Preboil Volume (gal):	8.50
Preboil Gravity (Brix):	13.50
Preboil Gravity (SG):	1.052
Extraction Efficiency (%):	**69%**
Boil	
Boil Time (min):	90
Estimated Evaporation Loss (gal):	1.96
Hop Absorption (gal):	0.13
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.65
Actual Evaporation Loss (gal):	2.47
Original Gravity (Brix):	25.02
Batch Size Efficiency (%):	72%
Actual Efficiency (%):	67%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	64
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	30
Secondary Fermentation Temperature (F):	65
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	3
Tertiary Fermentation Temperature (F):	32
Final Gravity (SG):	1.014
Temperature of Reading (F):	71
Corrected SG:	1.016
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	318
12 oz. Bottles Required:	51
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	2.15
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 (%):	45%
Trub Loss (gal):	0.16
FWH IBU Factor (%):	10%
Strike Temperature Factor (F):	7
Sparge Temperature Factor (F):	4
Estimated Evaporation Rate (gal/hr):	1.31
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:	Belgian Dark Strong Ale
Code:	18E
OG:	1.075-1.110
FG:	1.010-1.024
IBU:	20.0-30.0
SRM:	12.0-22.0
ABV:	8.0-12.0+%
CO2:	1.9-2.4

Yeast Strain	
Yeast Strain:	White Labs WLP575 (Belgian Style Ale Yea
Type:	Belgian Style Ale Yeast Blend
Attenuation (%):	74-80%
Actual Attenuation (%):	83%
Fermentation Temp (F):	68-75F
Flocculation:	medium-high

Required Amounts	
Cell Count (billions):	368
Vials (White Labs/Wyeast):	8.3
Dry Yeast (g):	18.4
Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	2
Date Yeast Produced:	2016 January 1
Yeast Viability (%):	44%
Yeast Growth Rate:	4.15
Yeast Innoculation Rate (million/ml):	25.05
Starter Volume Required (ml);	3535
DME Required (oz):	11.49
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	405

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):		
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:	1.095	
Temperature (F):	69	
Corrected SG:	1.097	

Gravity Calculator			
Brix:	23.00	25.02	
Specific Gravity:	1.089	1.097	
Degrees Plato:	21.22	22.92	

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

3/26: pitched started at high krausen (~3L); used blowoff tube.
Significant fermentation.
3/29: 1.026 SG
4/5: 1.016 SG (10.6% ABV); no krausen to speak of.
Aroma is Belgian, dark fruit, date, sweet, a hint of clove and banana; flavor is dark fruit, slight maltiness, bread, clove, a hint of bitterness.
4/19: 1.016 SG (10.6% ABV).
Beautiful aroma and flavor; similar to last tasting, but much smoother and cleaner.
Cold crashing.
5/1: kegged.
Aroma is Belgian, dark fruit, date, sweet, a hint of clove and beets; flavor is dark fruit and malty with just a hint of residual sweetness; finish is nutty, slightly bitter, and a hint of cherries.
Somehow, gravity reading was 1.018 SG (higher than previous readings)?
Going with previous reading(s).
Pulled 1 gal to a separate secondary fermenter; plan to sour that one!
5/4: added one vial of White Labs WLP655 and one packet of Wyeast Roeselare.
6/27: pellicle has formed (not particularly pronounced though); plan to sample sometime in the fall.