BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew			
Name:	Flanders Red		
Brew Date:	2016 February 9	Collected (gal):	5.00
Rack Date:	2016 July 10	Racked (gal):	5.00
Keg/Bottle Date:	2017 January 6	Kegged/Bottled (gal):	4.50
Estimated		**Actual**	
ABV (%):	5.4%	ABV (%):	5.5%
OG (SG):	1.052	OG (SG):	1.054
FG (SG):	1.010	FG (SG):	1.012
IBU:	18.1	IBU:	19.5
SRM:	14.5	SRM:	15.9
IBU/Gravity Ratio:	0.35	IBU/Gravity Ratio:	0.36

Grain	Pounds	Potential	SG Share	Color	% Bill
Pilsner (2-Row) Germany	4.50	1.037	0.021	2.0	40.00%
Vienna Malt	4.00	1.036	0.018	3.5	35.56%
Munich Malt 10L	1.00	1.035	0.004	10.0	8.89%
Belgian aromatic malt	0.50	1.036	0.002	26.0	4.44%
Belgian Special "B"	0.50	1.030	0.002	220.0	4.44%
Unmalted Raw White Wheat	0.75	1.037	0.004	2.0	6.67%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Hallertauer (GR)	P	2.00	105	2.7%	18.1	100.00%

Design Notes

Mash-in at 146F for 15 min; raise to 156F for 30 min; raise to 162F for 15 min; mash-out.
After initial fermentation is complete, add oak cubes (2 oz per 5 gal) and age for 3 months.
Rack, then brew a second batch and pitch on top of yeast cake.
Do the same with the second batch; then blend the two batches to target sourness.
Can also use the oak chair leg in carboy method.

Batch Variables and Calculations	
Batch Size (gal):	5.50
Grain Temperature (F):	59
Total Grain Weight (lbs):	11.25
Mash	
Mash Time (min):	70
Desired Mash Temperature (F):	146
Strike Water (gal):	5.69
Strike Temperature (F):	162
Mash Ratio (qts/lb):	2.02
Grain Absorption (gal):	1.41
Mash Volume (gal):	6.59
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	4.14
First Runnings (gal):	4.25
First Runnings Gravity (Brix):	15.50
First Runnings Gravity (SG):	1.060
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	3.68
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	4.15
Second Runnings (gal):	4.20
Second Runnings Gravity (Brix):	6.10
Second Runnings Gravity (SG):	1.024
Estimated Preboil Volume (gal):	8.30
Estimated Preboil Gravity (Brix):	10.83
Preboil Volume (gal):	8.45
Preboil Gravity (Brix):	10.40
Preboil Gravity (SG):	1.040
Extraction Efficiency (%):	84%
Boil	
Boil Time (min):	105
Estimated Evaporation Loss (gal):	1.93
Hop Absorption (gal):	0.05
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.49
Actual Evaporation Loss (gal):	2.61
Original Gravity (Brix):	14.00
Batch Size Efficiency (%):	74%
Actual Efficiency (%):	67%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	70
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	90
Secondary Fermentation Temperature (F):	72
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	
Tertiary Fermentation Temperature (F):	
Final Gravity (SG):	1.010
Temperature of Reading (F):	70
Corrected SG:	1.012
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	179
12 oz. Bottles Required:	46
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	2.20
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):	1.10
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:	Flanders Red Ale
Code:	17B
OG:	1.048-1.057
FG:	1.002-1.012
IBU:	10.0-25.0
SRM:	10.0-16.0
ABV:	5.0-5.5%
CO2:	1.9-2.5

Yeast Strain	
Yeast Strain:	Wyeast 3763 (Roeselare Ale Blend)
Type:	Roeselare Ale Blend
Attenuation (%):	80-80%
Actual Attenuation (%):	78%
Fermentation Temp (F):	65-85F
Flocculation:	variable

Required Amounts	
Cell Count (billions):	199
Vials (White Labs/Wyeast):	2.8
Dry Yeast (g):	10.0
Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	1
Date Yeast Produced:	2015 December 28
Yeast Viability (%):	72%
Yeast Growth Rate:	2.77
Yeast Innoculation Rate (million/ml):	60.64
Starter Volume Required (ml);	1184
DME Required (oz):	3.85
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	125

User Variables	

Batch Scaling				
Desired OG:	1.052	Total Weight (lbs):		11.38
Batch Size (gal):	5.50	Total Bill:		100.00%
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Pilsner (2-Row) Germany	3.98	1.037	2.0	35.00%
Vienna Malt	3.98	1.036	3.5	35.00%
Munich Malt 10L	1.14	1.035	10.0	10.00%
Belgian aromatic malt	0.80	1.036	26.0	7.00%
Belgian Special "B"	0.80	1.030	220.0	7.00%
Unmalted Raw White Wheat	0.68	1.037	2.0	6.00%

Poundage		
Goal (lbs):	4.00	
Amount (lbs | oz.f_oz):	2	6.59
Amount (lbs | oz.f_oz):	2	9.41
Amount (lbs | oz.f_oz):		
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Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Needed (lbs | oz.f_oz):	-1	0.00

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

Gravity Calculator			
Brix:	14.00		
Specific Gravity:	1.054		
Degrees Plato:	13.34		

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

2/9: accidentally put 5# Vienna instead of 4#... so should be 1.056 OG, 17.5 IBU and 15.1 SRM.
Stopped boil at 105 min (OG was reached and volume was about right).
3/19: sampled; aroma is acidic; so is flavor with a tiny hint of sourness; good funk; very slight malty notes; more acidic than the brown.
No real pellicle yet; check in a month and add oak at that time.
5/7: added oak (12" dowel into the head of the carboy; taped with blue tape.
6/27: sampled; aroma is acidic, sour, wild, fruity, wonderful; flavor is initially tart, smooth, very slightly sour with hints of citrus and malt; slightly bitter; aroma much more pronounced than flavor. Overall very good (should be great when blended).
7/10: transferred to a secondary so that a fresh batch can be collected on top of the yeast cake.
1.011 SG (5.7% ABV); aroma is just wonderful; flavor is delicious; sourness is only slight; huge white pellicle on top.
Placed the oak dowel in the secondary.
11/10: sampled; aroma of stinky feet; will let sit for a while to see how it ages.

1/6/17: kegged 4.5 gal