BREWSHEET v3.3 (2012-03-18)

user input
calculated

Brew			
Name:	Lambic Starter		
Brew Date:	2013 November 10	Collected (gal):	5.40
Rack Date:		Racked (gal):	
Keg/Bottle Date:		Kegged/Bottled (gal):	

Estimated		Actual	
ABV (%):		ABV (%):	
OG (SG):	1.050	OG (SG):	1.052
FG (SG):		FG (SG):	
IBU:	6.4	IBU:	6.9
SRM:	4.0	SRM:	4.3
IBU/Gravity Ratio:	0.13	IBU/Gravity Ratio:	0.13

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	7.57	1.036	0.032	2.0	65.03%
Unmalted Raw White Wheat	4.07	1.037	0.018	2.0	34.97%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Tettnanger (US)	P	3.68	240	0.5%	6.4	100.00%

Design Notes

Cantillon uses 5g/L of hops (~0.67 oz/gal or ~3.68 oz/5.5 gal).
Cantillon mashes in at 113F and increases through 162F.
Cantillon racks to the barrel at 64.4F.
Dough-in with 20% of total water (1.26 gals or 0.4 qts/lb) at 136F to raise mash to 113F. Rest for 20 min.
Add 20% of total water (1.26 gal) at 212F to raise mash to 136F. Rest for 15 min.
Remove 33% (0.83 gal) of mash liquor, heat in secondary kettle to 190F, and hold.
Add 25% of total water (1.58 gal) at 212F to raise mash to 150F. Rest for 30 min.
Remove 50% (1.64 gal) of mash liquor, add to secondary kettle, reheat to 190F, and hold.
Add 35% of total water (2.21 gal) at 212F to raise mash to 162F. Rest for 30 min.
Remove 35% of total mash liquor volume (after all infusions: 2.21 gal), add to boil kettle, and begin heating.
Add contents of secondary kettle (2.47 gal) at 190F to raise mash to 167F. Rest for 20 min.
Recirculate wort until clear.
Drain mash tun (2.53 gal) into kettle.
Sparge with 6.79 gal water at 190F to reach preboil volume of 11.53 gal.

Batch Variables and Calculations	
Batch Size (gal):	5.50
Grain Temperature (F):	68
Total Grain Weight (lbs):	11.64
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	86
Strike Water (gal):	7.36
Strike Temperature (F):	90
Mash Ratio (qts/lb):	2.53
Grain Absorption (gal):	1.46
Mash Volume (gal):	8.29
Mash-out Temperature (F):	170
Estimated First Runnings (gal):	5.76
First Runnings (gal):	4.65
First Runnings Gravity (Brix):	12.30
First Runnings Gravity (SG):	1.048
Sparge	
Desired Sparge Temperature (F):	172
Sparge Water (gal):	5.30
Sparge Water Temperature (F):	175
Estimated Second Runnings (gal):	5.77
Second Runnings (gal):	6.65
Second Runnings Gravity (Brix):	3.50
Second Runnings Gravity (SG):	1.014
Estimated Preboil Volume (gal):	11.53
Estimated Preboil Gravity (Brix):	7.12
Preboil Volume (gal):	11.30
Preboil Gravity (Brix):	7.10
Preboil Gravity (SG):	1.028
Extraction Efficiency (%):	74%
Boil	
Boil Time (min):	240
Estimated Evaporation Loss (gal):	5.13
Hop Absorption (gal):	0.09
Volume Left in Kettle (gal):	-0.41
Actual Evaporation Rate (gal/hr):	1.35
Actual Evaporation Loss (gal):	5.41
Original Gravity (Brix):	13.37
Batch Size Efficiency (%):	67%
Actual Efficiency (%):	61%
Fermentation	
Primary Fermentation (days):	7
Primary Fermentation Temperature (F):	72
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):	270
Tertiary Fermentation Temperature (F):	72
Final Gravity (SG):	
Temperature of Reading (F):	
Corrected SG:	
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	
12 oz. Bottles Required:	
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	3.55
Priming Sugar (oz):	
DME (oz):	
Forced Carbonation (lbs):	

System Variables	
Brewhouse Efficiency (%):	65%
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):	3
Sparge Temperature Factor (F):	2
Estimated Evaporation Rate (gal/hr):	1.28
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:	Fruit Lambic
Code:	17F
OG:	1.040-1.060
FG:	1.000-1.010
IBU:	2.0-10.0
SRM:	3.0-7.0
ABV:	5.0-7.0%
CO2:	2.6-4.5

Yeast Strain	
Yeast Strain:	White Labs WLP655 (Belgian Sour Mix)
Type:	Belgian Sour Mix
Attenuation (%):	
Actual Attenuation (%):	
Fermentation Temp (F):	
Flocculation:	

Required Amounts	
Cell Count (billions):	385
Vials (White Labs/Wyeast):	
Dry Yeast (g):	19.3
Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	1
Date Yeast Produced:	
Yeast Viability (%):	
Yeast Growth Rate:	
Yeast Innoculation Rate (million/ml):	
Starter Volume Required (ml);	
DME Required (oz):	
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	

User Variables	

Batch Scaling				
Desired OG:	1.050	Total Weight (lbs):		11.64
Batch Size (gal):	5.50	Total Bill:		100.00%
Brewhouse Efficiency (%):	65%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Northwestern Pale Ale malt	7.57	1.036	2.8	65.00%
Unmalted Raw Red Wheat	4.07	1.037	2.0	35.00%

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):		
Needed (lbs | oz.f_oz):		

Hydrometer Correction		
SG:	1.052	
Temperature (F):	67	
Corrected SG:	1.052	

Gravity Calculator			
Brix:	11.90	13.37	
Specific Gravity:	1.046	1.052	
Degrees Plato:	11.43	12.77	

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

Doughed in with ~1.5 gal at 140F → mash was thick and at 105F.
Ambient temp was ~51F (and mash tun was cold).
Suggest to set strike at +10F next time.
Added strike then poured entire grain bill and mixed.
Rested 20 min.
Added 1.5 gal at 212F → 131F (getting closer).
Rested 15 min.
Removed 0.83 gal to 4 gal kettle and maintained at 190F.
Added 1.6 gal at 212F → 142F.
Removed 1.65 gal to 4 gal kettle and maintained at 190F.
Added 2.25 gal (some from HLT) at mostly 212F → 147F.
Started recirculating to increase temp and maintain at 162F.
Collected 2.25 gal to boil kettle.
Added contents of kettle 2 to mash tun → 164F; recirculated and maintained at 167F.
Started heating contents of boil kettle.
Drained and collected 2.4 gal.
Sparged with ~6.4 gal, recirculated, and collected.
Preboil gravity taken ~30 min into the boil.