

BREWSHEET v3.3 (2012-03-18)

user input
calculated

Brew			
Name: Raise Your Glass (Kolsch)			
Brew Date: 2013 August 19		Collected (gal): 11.20	
Rack Date:		Racked (gal):	
Keg/Bottle Date: 2013 September 11		Kegged/Bottled (gal): 10.00	
Estimated	Actual	Estimated	Actual
ABV (%): 4.4%	ABV (%): 4.6%	OG (SG): 1.045	OG (SG): 1.047
FG (SG): 1.011	FG (SG): 1.012	IBU: 24.8	IBU: 24.6
SRM: 4.0	SRM: 4.0	IBU/Gravity Ratio: 0.55	IBU/Gravity Ratio: 0.53

Grain	Pounds	Potential	SG Share	Color	% Bill
Pilsner (2-Row) Germany	18.25	1.037	0.043	2.0	94.81%
Munich Malt 10L	1.00	1.035	0.002	10.0	5.19%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Spalt (GR)	P	3.00	85	4.1%	21.5	75.00%
Spalt (GR)	P	1.00	15	4.1%	3.3	25.00%

Design Notes	
Mash at 134F for 15 min, raise to 152F for 60 min, raise to 168F for 20 min.	

Batch Variables and Calculations	
Batch Size (gal):	11.00
Grain Temperature (F):	80
Total Grain Weight (lbs):	19.25
Mash	
Mash Time (min):	90
Desired Mash Temperature (F):	150
Strike Water (gal):	9.58
Strike Temperature (F):	164
Mash Ratio (qts/lb):	1.99
Grain Absorption (gal):	2.41
Mash Volume (gal):	11.12
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	7.03
First Runnings (gal):	7.05
First Runnings Gravity (Brix):	14.10
First Runnings Gravity (SG):	1.055
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	6.57
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	7.04
Second Runnings (gal):	7.02
Second Runnings Gravity (Brix):	5.50
Second Runnings Gravity (SG):	1.021
Estimated Preboil Volume (gal):	14.07
Estimated Preboil Gravity (Brix):	9.81
Preboil Volume (gal):	14.07
Preboil Gravity (Brix):	10.40
Preboil Gravity (SG):	1.040
Extraction Efficiency (%):	80%
Boil	
Boil Time (min):	90
Estimated Evaporation Loss (gal):	1.93
Hop Absorption (gal):	0.10
Volume Left in Kettle (gal):	-0.25
Actual Evaporation Rate (gal/hr):	1.31
Actual Evaporation Loss (gal):	1.97
Original Gravity (Brix):	11.99
Batch Size Efficiency (%):	72%
Actual Efficiency (%):	72%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	60
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	28
Secondary Fermentation Temperature (F):	32
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	
Tertiary Fermentation Temperature (F):	
Final Gravity (SG):	1.014
Temperature of Reading (F):	39
Corrected SG:	1.012
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	154
1/2 oz. Bottles Required:	102
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	2.55
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):	1.29
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:	Kolsch
Code:	6C
OG:	1.044-1.050
FG:	1.007-1.011
IBU:	20.0-30.0
SRM:	4.0-5.0
ABV:	4.4-5.2%
CO2:	2.4-2.7

Yeast Strain	
Yeast Strain:	White Labs WLP029 (German Ale/Kolsch)
Type:	German Ale/Kolsch
Attenuation (%):	72-78%
Actual Attenuation (%):	75%
Fermentation Temp (F):	65-69F
Flocculation:	medium

Required Amounts	
Cell Count (billions):	350
Vials (White Labs/Wyeast):	5.4
Dry Yeast (g):	17.5
Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	4
Date Yeast Produced:	2013 June 27
Yeast Viability (%):	65%
Yeast Growth Rate:	1.34
Yeast Inoculation Rate (million/ml):	295.72
Starter Volume Required (ml):	883
DME Required (oz):	2.87
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	244

User Variables	

Batch Scaling				
Desired OG:	1.045	Total Weight (lbs):	19.16	
Batch Size (gal):	11.00	Total Bill:	100.00%	
Brewhouse Efficiency (%):	70%			
Grain				
	Pounds	Potential	Color	% Bill
Pilsner (2-Row) Germany	18.21	1.037	2.0	95.00%
Munich Malt 10L	0.96	1.035	10.0	5.00%

Poundage		
Goal (lbs):	18.25	
Amount (lbs oz f. oz):	2	8.14
Amount (lbs oz f. oz):	2	7.58
Amount (lbs oz f. oz):	2	7.82
Amount (lbs oz f. oz):	2	6.98
Amount (lbs oz f. oz):	2	8.60
Amount (lbs oz f. oz):	2	13.11
Amount (lbs oz f. oz):	2	11.63
Amount (lbs oz f. oz):	0	4.14
Amount (lbs oz f. oz):		
Amount (lbs oz f. oz):		
Amount (lbs oz f. oz):		
Amount (lbs oz f. oz):	0	0.00

Hydrometer Correction	
SG:	1.045
Temperature (F):	80
Corrected SG:	1.047

Gravity Calculator		
Brix:	11.30	11.99
Specific Gravity:	1.044	1.047
Degrees Plato:	10.88	11.51

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes	
Plan to pitch 4 vials of yeast (no starter) which should be adequate for the OG.	
Had problems with the grain mill again; increased Pilsner to 18.75#.	
Mashed at 150F for 70 min.	
9/11; kegged and lagered	
1st batch: 1.011 FG (4.6% ABV); aroma is grainy and very slightly yeasty (maybe skunky?)	
Flavor is grainy, crisp, dry, and quite delicious.	
2nd batch: 1.012 FG (4.6% ABV); quite similar to 1st batch but a bit cleaner, I think.	
So far, I think the 2nd batch is best for ARToberfest.	