BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew

Name:	Spruce You Up		
Brew Date:	2015 October 11	Collected (gal):	11.00
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2015 October 28	Kegged/Bottled (gal):	10.00

Estimated		Actual	
ABV (%):	6.3%	ABV (%):	5.3%
OG (SG):	1.060	OG (SG):	1.056
FG (SG):	1.012	FG (SG):	1.016
IBU:	29.9	IBU:	30.4
SRM:	23.9	SRM:	23.6
IBU/Gravity Ratio:	0.50	IBU/Gravity Ratio:	0.54

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	16.25	1.036	0.037	2.0	60.55%
Munich Malt 10L	4.98	1.035	0.011	10.0	18.55%
Caramel/Crystal 90L	0.96	1.034	0.002	90.0	3.58%
Caramel/Crystal 60L	0.90	1.034	0.002	60.0	3.35%
Chocolate Malt	0.50	1.028	0.001	350.0	1.86%
Roasted barley	0.50	1.028	0.001	450.0	1.86%
Flaked oats	2.75	1.033	0.006	2.2	10.25%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Challenger (UK)	P	2.25	60	7.0%	22.7	11.11%
Golding (US)	P	1.00	30	4.0%	4.4	4.94%
Golding (US)	P	1.00	15	4.0%	2.9	4.94%
Spruce tips	L	12.00	15	0.0%	0.0	59.26%
Spruce tips	L	4.00	0	0.0%	0.0	19.75%

Design Notes

Smell the spruce tips. If they're strong, consider reducing the amounts.
Tweaked hop absorption to account for spruce tips (less absorption)

Batch Variables and Calculations

Batch Size (gal):	11.00
Grain Temperature (F):	75
Total Grain Weight (lbs):	26.84

Mash

Mash Time (min):	60
Desired Mash Temperature (F):	156
Strike Water (gal):	10.47
Strike Temperature (F):	173
Mash Ratio (qts/lb):	1.56
Grain Absorption (gal):	3.35
Mash Volume (gal):	12.62
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	6.97
First Runnings (gal):	7.00
First Runnings Gravity (Brix):	18.10
First Runnings Gravity (SG):	1.070

Sparge

Desired Sparge Temperature (F):	168
Sparge Water (gal):	6.50
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	6.97
Second Runnings (gal):	7.00
Second Runnings Gravity (Brix):	8.10
Second Runnings Gravity (SG):	1.031
Estimated Preboil Volume (gal):	13.95
Estimated Preboil Gravity (Brix):	13.10
Preboil Volume (gal):	14.00
Preboil Gravity (Brix):	13.00
Preboil Gravity (SG):	1.050
Extraction Efficiency (%):	75%

Boil

Boil Time (min):	60
Estimated Evaporation Loss (gal):	1.40
Hop Absorption (gal):	0.50
Volume Left in Kettle (gal):	0.25
Actual Evaporation Rate (gal/hr):	1.21
Actual Evaporation Loss (gal):	1.21
Original Gravity (Brix):	14.39
Batch Size Efficiency (%):	65%
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):	3
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):	1.016
Temperature of Reading (F):	38
Corrected SG:	1.016
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	186
12 oz. Bottles Required:	102

Carbonation

Bottling Temperature (F):	
Volumes of CO2:	2.35
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):	1.40
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:	Specialty Beer
Code:	23A
OG:	
FG:	
IBU:	
SRM:	
ABV:	
CO2:	2.2-2.5

Yeast Strain

Yeast Strain:	Danstar Nottingham (Dry Ale)
Type:	Dry Ale
Attenuation (%):	75-85%
Actual Attenuation (%):	72%
Fermentation Temp (F):	57-70F
Flocculation:	high

Required Amounts

Cell Count (billions):	457
Vials (White Labs/Wyeast):	
Dry Yeast (g):	22.9

Yeast Starter/Slurry

Vials (White Labs/Wyeast):	
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:	1.060	Total Weight (lbs):	26.92
Batch Size (gal):	11.00	Total Bill:	100.00%
Brewhouse Efficiency (%):	70%		

Grain	Pounds	Potential	Color	% Bill
Pale Malt (2-Row) US	16.08	1.036	2.0	59.75%
Munich Malt 10L	5.38	1.035	10.0	20.00%
Caramel/Crystal 90L	1.35	1.034	90.0	5.00%
Belgian Special "B"	0.61	1.030	220.0	2.25%
Chocolate Malt	0.61	1.028	350.0	2.25%
Roasted barley	0.20	1.028	450.0	0.75%
Flaked oats	2.69	1.033	2.2	10.00%

Poundage

Goal (lbs):	16.25	
Amount (lbs | oz.f_oz):	1	12.32
Amount (lbs | oz.f_oz):	2	6.91
Amount (lbs | oz.f_oz):	2	10.86
Amount (lbs | oz.f_oz):	2	14.10
Amount (lbs | oz.f_oz):	2	8.60
Amount (lbs | oz.f_oz):	2	13.78
Amount (lbs | oz.f_oz):	1	1.43
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):		
Needed (lbs | oz.f_oz):	0	0.00

Hydrometer Correction

SG:	1.054
Temperature (F):	77
Corrected SG:	1.057

Gravity Calculator

Brix:	14.00	14.58
Specific Gravity:	1.054	1.057
Degrees Plato:	13.34	13.87

Brix Ethanol Correction

Original Brix:	
Current Brix:	
SG:	

Brewing Notes

10/11: Didn't reduce spruce tips; no guts, no glory!!!
And they smelled like a grand Christmas tree!
Didn't use a hop bag; not too bad, just a few seconds of stuck at the beginning of the whirlpool.
10/24: sampled; stuffed up, but others mentioned nice spruce aroma with initial spruce flavor that's followed by a profound woodiness.
10/28: first batch is 1.016 FG (5.2% ABV); aroma is slight spruce, woody, malty, sweet; flavor is bold spruce with a pronounced woodiness, followed by malt and roast; finish is woody with spruce, with a good bitterness.
Second batch is 1.015 FG (5.3% ABV); aroma is like the first batch although perhaps a tad cleaner; flavor is like the first batch but a tad less roasty; finish is the same.
Delicious brews!