BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew			
Name:	Hopfully IPA		
Brew Date:	2016 January 10	Collected (gal):	5.40
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2016 February 5	Kegged/Bottled (gal):	5.00
Estimated		**Actual**	
ABV (%):	6.3%	ABV (%):	6.3%
OG (SG):	1.060	OG (SG):	1.056
FG (SG):	1.012	FG (SG):	1.008
IBU:	86.5	IBU:	90.9
SRM:	10.0	SRM:	10.2
IBU/Gravity Ratio:	1.44	IBU/Gravity Ratio:	1.61

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	11.50	1.036	0.053	2.0	87.12%
Caramel/Crystal 75L	0.85	1.034	0.004	75.0	6.44%
Carapils/Dextrine	0.85	1.033	0.004	2.0	6.44%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Simcoe	L	1.00	70	11.9%	30.7	13.79%
Columbus	P	0.25	70	12.9%	9.6	3.45%
Simcoe	L	0.25	40	11.9%	6.5	3.45%
Columbus	P	0.25	40	12.9%	8.1	3.45%
Simcoe	L	0.75	15	11.9%	11.1	10.34%
Columbus	P	0.75	15	12.9%	13.8	10.34%
Cascade	P	1.00	10	6.3%	6.6	13.79%
Simcoe	L	0.50	0	11.9%	0.0	6.90%
Columbus	P	0.50	0	12.9%	0.0	6.90%
Cascade	P	0.50	dry	6.3%	0.0	6.90%
Centennial	P	0.50	dry	9.9%	0.0	6.90%
Columbus	P	0.50	dry	12.9%	0.0	6.90%
Simcoe	P	0.50	dry	13.0%	0.0	6.90%

Design Notes

Batch Variables and Calculations	
Batch Size (gal):	5.50
Grain Temperature (F):	57
Total Grain Weight (lbs):	13.20
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	152
Strike Water (gal):	5.71
Strike Temperature (F):	170
Mash Ratio (qts/lb):	1.73
Grain Absorption (gal):	1.65
Mash Volume (gal):	6.76
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	3.92
First Runnings (gal):	4.05
First Runnings Gravity (Brix):	16.40
First Runnings Gravity (SG):	1.064
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	3.45
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	3.92
Second Runnings (gal):	3.85
Second Runnings Gravity (Brix):	7.60
Second Runnings Gravity (SG):	1.029
Estimated Preboil Volume (gal):	7.84
Estimated Preboil Gravity (Brix):	12.11
Preboil Volume (gal):	7.90
Preboil Gravity (Brix):	12.00
Preboil Gravity (SG):	1.047
Extraction Efficiency (%):	78%
Boil	
Boil Time (min):	70
Estimated Evaporation Loss (gal):	1.20
Hop Absorption (gal):	0.32
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.18
Actual Evaporation Loss (gal):	1.37
Original Gravity (Brix):	14.53
Batch Size Efficiency (%):	66%
Actual Efficiency (%):	65%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	62
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	4
Secondary Fermentation Temperature (F):	70
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	3
Tertiary Fermentation Temperature (F):	32
Final Gravity (SG):	1.008
Temperature of Reading (F):	38
Corrected SG:	1.008
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	184
12 oz. Bottles Required:	51
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	1.90
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):	1.03
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:	American IPA
Code:	14B
OG:	1.056-1.075
FG:	1.010-1.018
IBU:	40.0-70.0
SRM:	6.0-15.0
ABV:	5.5-7.5%
CO2:	1.5-2.3

Yeast Strain	
Yeast Strain:	Danstar Nottingham (Dry Ale)
Type:	Dry Ale
Attenuation (%):	75-85%
Actual Attenuation (%):	86%
Fermentation Temp (F):	57-70F
Flocculation:	high

Required Amounts	
Cell Count (billions):	229
Vials (White Labs/Wyeast):	
Dry Yeast (g):	11.5
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):		13.21
Batch Size (gal):	5.50	Total Bill:		100.00%
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Pale Malt (2-Row) US	11.50	1.036	2.0	87.00%
Caramel/Crystal 75L	0.86	1.034	75.0	6.50%
Carapils/Dextrine	0.86	1.033	2.0	6.50%

Poundage		
Goal (lbs):	11.50	
Amount (lbs | oz.f_oz):	2	5.07
Amount (lbs | oz.f_oz):	2	4.47
Amount (lbs | oz.f_oz):	1	13.42
Amount (lbs | oz.f_oz):	2	3.20
Amount (lbs | oz.f_oz):	2	2.89
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):	0	10.95

Hydrometer Correction	
SG:	1.055
Temperature (F):	62
Corrected SG:	1.056

Gravity Calculator		
Brix:	12.70	14.53
Specific Gravity:	1.049	1.056
Degrees Plato:	12.16	13.82

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

Increased boil from 60min to 70min for volume and SG.
60 min and 30 min are the only hop additions added before extending the boil.
Swapped to 70 min and 40 min.
1/30: dry hopped
2/5: kegged; aroma is beautiful citrus mixed with pine; flavor is tangy citrus with light pine, dry, and nice bitterness; great malt in the backend with a smooth bitter finish.