BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew			
Name:	Juicy New England IPA		
Brew Date:	2020 May 31	Collected (gal):	5.50
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2020 June 21	Kegged/Bottled (gal):	5.00
Estimated		**Actual**	
ABV (%):	5.0%	ABV (%):	5.6%
OG (SG):	1.051	OG (SG):	1.052
FG (SG):	1.013	FG (SG):	1.009
IBU:	41.3	IBU:	41.2
SRM:	4.0	SRM:	4.0
IBU/Gravity Ratio:	0.81	IBU/Gravity Ratio:	0.80

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	7.75	1.036	0.036	2.0	68.89%
Pilsner (2-Row) Germany	1.75	1.037	0.008	2.0	15.56%
Flaked oats	1.25	1.033	0.005	2.2	11.11%
Flaked wheat	0.50	1.034	0.002	2.0	4.44%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Amarillo	P	1.50	fwh	7.7%	41.3	11.54%
Amarillo	P	1.50	0	7.7%	0.0	11.54%
Citra	P	1.00	0	12.9%	0.0	7.69%
Galaxy	P	1.50	0	15.7%	0.0	11.54%
Mosaic	P	1.50	0	11.7%	0.0	11.54%
Citra	P	1.00	dry	12.9%	0.0	7.69%
Galaxy	P	0.50	dry	15.7%	0.0	3.85%
Mosaic	P	0.50	dry	11.7%	0.0	3.85%
Citra	P	1.00	dry	12.9%	0.0	7.69%
Galaxy	P	0.50	dry	15.7%	0.0	3.85%
Mosaic	P	0.50	dry	11.7%	0.0	3.85%
Citra	P	1.00	dry	12.9%	0.0	7.69%
Galaxy	P	0.50	dry	15.7%	0.0	3.85%
Mosaic	P	0.50	dry	11.7%	0.0	3.85%

Design Notes

Don't use a hop bag; hazy is good!
Target 5.5 pH; add CaCl2 and CaSO4
0.84 tsp CaCl2 to strike, 0.28 tsp CaSO4 to strike
0.55 tsp CaCl2 to sparge/boil, 0.18 tsp CaSO4 to sparge/boil
2 ml lactic acid to strike; check and add as needed to room temp strike water to get 5.5 pH
Start fermentation at 64F; let rise to 68F.
All dry hop additions stay in the beer for 3 days and are then removed!
No need to use gelatin when kegging.

1t CaCl2 = 4.4g --> 0.84t = 3.7g; 0.55t = 2.4g
1t CaSO4 = 5.3g --> 0.28t = 1.5g; 0.18t = 0.95g

Batch Variables and Calculations	
Batch Size (gal):	5.50
Grain Temperature (F):	79
Total Grain Weight (lbs):	11.25
Mash	
Mash Time (min):	75
Desired Mash Temperature (F):	152
Strike Water (gal):	5.57
Strike Temperature (F):	166
Mash Ratio (qts/lb):	1.98
Grain Absorption (gal):	1.41
Mash Volume (gal):	6.47
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	4.02
First Runnings (gal):	4.02
First Runnings Gravity (Brix):	15.20
First Runnings Gravity (SG):	1.059
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	3.56
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	4.03
Second Runnings (gal):	4.03
Second Runnings Gravity (Brix):	5.50
Second Runnings Gravity (SG):	1.021
Estimated Preboil Volume (gal):	8.05
Estimated Preboil Gravity (Brix):	10.34
Preboil Volume (gal):	8.05
Preboil Gravity (Brix):	10.00
Preboil Gravity (SG):	1.039
Extraction Efficiency (%):	78%
Boil	
Boil Time (min):	75
Estimated Evaporation Loss (gal):	1.56
Hop Absorption (gal):	0.18
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.25
Actual Evaporation Loss (gal):	1.56
Original Gravity (Brix):	13.30
Batch Size Efficiency (%):	71%
Actual Efficiency (%):	71%
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):	1.009
Temperature of Reading (F):	43
Corrected SG:	1.009
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	169
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):	1.25
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 New England (Dry Ale)
Type:	Dry Ale
Attenuation (%):	70-78%
Actual Attenuation (%):	82%
Fermentation Temp (F):	59-72F
Flocculation:	medium

Required Amounts	
Cell Count (billions):	197
Vials (White Labs/Wyeast):	
Dry Yeast (g):	9.9
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:	1.050	Total Weight (lbs):		10.99
Batch Size (gal):	5.50	Total Bill:		100.00%
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Pale Malt (2-Row) US	7.69	1.036	2.0	70.00%
Pilsner (2-Row) Germany	1.65	1.037	2.0	15.00%
Flaked oats	1.10	1.033	2.2	10.00%
Flaked wheat	0.55	1.034	2.0	5.00%

Poundage		
Goal (lbs):		
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):		
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):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Needed (lbs | oz.f_oz):		

Hydrometer Correction		
SG:	1.049	
Temperature (F):	73	
Corrected SG:	1.052	

Gravity Calculator			
Brix:	12.25	13.30	
Specific Gravity:	1.048	1.052	
Degrees Plato:	11.75	12.71	

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

5/31: added 7mL to strike at room temp; pH was ~5.5.
Strike temp was 156F; took 15 min to get to 152F.
6/3: added the first dry hop addition; target to remove on 6/6.
6/7: removed dry hops; added second batch.
6/10: removed dry hops; 1.009 SG (5.5% ABV at this point); added final dry hop addition.
Aroma is huge citrus hop!
6/14: removed dry hops and crashed.
Aroma is perfect at this point!
6/21: kegged (did not use gelatin); aroma is citrus and pineapple; flavor is quite similar; low bitterness and crisp; delicious!