BREWSHEET v2.0 (2010-06-17)

Batch			
Brew Name:	Hopfully IPA		
Bottle Top Code:		Calories per Pint:	244
Estimated OG:	1.068	Actual OG:	1.074
Estimated FG:	1.016	Actual FG:	1.018
Estimated IBU:	90	Actual IBU:	115
Estimated SRM:	9	Actual SRM:	11
Brew Date:	11/19/10	Collected (gal):	5.00
Rack Date:	12/04/10	Racked (gal):	4.75
Bottle Date:	12/11/10	Bottled (gal):	4.00

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

Inventory	
Bottles:	
Gallons:	
Date Checked:	

Efficiency	
Brewhouse:	73%
Batch Size:	78%
Into Boiler:	84%
Into Fermenter:	59%

Yeast Strain	
Yeast Strain:	White Labs WLP001 (California Ale)
Type:	California Ale
Attenuation (%):	73-80%
Actual Attenuation (%):	76%
Fermentation Temp (F):	68-73F
Flocculation:	medium

Yeast Amounts	
Cell Count (billions):	283
Vials (White Labs/Wyeast):	2.4
Dry Yeast (g):	14
Starter Volume (mL):	3500
DME Required (oz)	12.25
Vials Required (w/ Starter):	1.0

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	14.00	1.036	0.061	2.0	88.89%
Carapils/Dextrine	0.88	1.033	0.004	2.0	5.56%
Caramel/Crystal 60L	0.88	1.034	0.004	60.0	5.56%

Hop	Alpha %	Ounces	Boil Time	IBU	% Bill
Simcoe	12.2%	1.00	90	31.9	11.43%
Simcoe	12.2%	0.25	60	7.5	2.86%
Columbus	14.5%	0.25	60	8.9	2.86%
Simcoe	12.2%	0.25	30	5.7	2.86%
Columbus	14.5%	0.25	30	6.8	2.86%
Simcoe	12.2%	0.75	15	11.1	8.57%
Columbus	14.5%	0.75	15	13.2	8.57%
Cascade	4.6%	1.25	10	5.1	14.29%
Simcoe	12.2%	0.50	0	0.0	5.71%
Columbus	14.5%	0.50	0	0.0	5.71%
Amarillo	8.6%	0.50	dry	0.0	5.71%
Cascade	4.6%	0.50	dry	0.0	5.71%
Centennial	9.1%	0.50	dry	0.0	5.71%
Columbus	14.5%	0.00	dry	0.0	0.00%
Simcoe	12.2%	0.50	dry	0.0	5.71%
Citra	12.0%	1.00	dry	0.0	11.43%

Brewing			
Batch Size (gal):	6.00	Estimated First Runnings (gal):	5.50
Total Grain Weight (lbs):	15.75	Desired Sparge Temperature (F):	170
Grain Temperature (F):	68	Sparge Water (gal):	2.89
Mash Ratio (qts/lb):	1.30	Sparge Water Temperature (F):	189
Mash/Lauter Deadspace (gal):	0.25	Estimated Preboil Volume (gal):	8.39
Total Water Needed (gal):	10.60	Boil Time (min):	90
Desired Mash Temperature (F):	152	Evaporation Rate (%):	13%
Strike Water (gal):	5.12	Estimated Evaporation Loss (gal):	1.64
Strike Temperature (F):	168	Trub Loss (gal):	0.75
Grain Absorption (gal):	1.97	Volume Left in Kettle (gal):	-0.50
Mash-out Temperature (F):	152	Actual Evaporation Rate (%):	24%
Mash-out Water (gal):	2.66	Actual Evaporation Loss (gal):	2.90

Gravity		Collections	
Potential OG:	1.094	First Runnings (gal):	5.65
OG:	1.073	SG of First Runnings:	1.058
OG Temperature (F):	63	SG Temperature (F):	114
Corrected OG:	1.074	Corrected SG:	1.067
SG at Racking:	1.022	Second Runnings (gal):	2.50
SG Temperature (F):	70	SG of Second Runnings:	1.027
Corrected SG:	1.023	SG Temperature (F):	134
FG:	1.017	Corrected SG:	1.041
FG Temperature (F):	71	Estimated Preboil SG:	1.059
Corrected FG:	1.018	Preboil Volume (gal):	8.15
Potential ABV (%):	9.0%	SG of Preboil Volume:	1.054
Actual ABV (%):	7.3%	SG Temperature (F):	88
IBU to Gravity Ratio:	1.56	Corrected SG:	1.058

Diacetyl Rest		Carbonation	
Target Fermentation Completion:	75%	CO2 Volume:	1.90
Target SG for Diacetyl Rest:	1.031	Bottling Temperature (F):	
		Priming Sugar (oz):	
Fermentation		DME (oz):	
CO2 Released During Fermentation (g):	1040.50	Forced Carbonation (lbs):	

ON BREW DAY

Heat 5.12 gallons of strike water to 168F
Add grain and mash at 152F for 60 minutes
Mash-out with 2.66 gallons at 210F, mix and hold for 10 minutes
Vorlauf and collect first runnings (approx. 5.5 gallons)
Add 2.89 gallons at 189F to lauter tun and sparge
Vorlauf and collect second runnings (approx. 2.89 gallons)
Boil for a total of 90 minutes with the following hop schedule:
- 1 oz. Simcoe @90 minute(s)
- 0.25 oz. Simcoe @60 minute(s)
- 0.25 oz. Columbus @60 minute(s)
- 0.25 oz. Simcoe @30 minute(s)
- 0.25 oz. Columbus @30 minute(s)
- 0.75 oz. Simcoe @15 minute(s)
- 0.75 oz. Columbus @15 minute(s)
- 1.25 oz. Cascade @10 minute(s)
- 0.5 oz. Simcoe @0 minute(s)
- 0.5 oz. Columbus @0 minute(s)

Notes

First runnings refrac = 16.22 P = 1.067 SG
Second runnings refrac = 10 P = 1.040 SG
Preboil refrac = 14 P = 1.057 SG
Collected refrac = 16.8 P = 1.069 SG
New bunkhead on new kettle; air was being pulled in so had to tilt kettle and fiddle.
Screwy evaporation!
Substituted 1 oz Citra for Columbus (ran out) in the dry hop.
12/11: Nice and bitter; great hop aroma; 7.3% ABV!
I have to remember that whole hops absorb a lot of beer!
12/13: Great fresh taste! Hop aroma is string and 115 IBUs feels more like 95.

I get a slight sweetness that is not obnoxious since it's kept in line by the bitterness.
This was a great brew, but I think I might want to lower the FG next time by mashing at 150.

Extra Variables	
12 oz. Bottles Required:	41
Primary Fermentation Temp. (F):	66
Secondary Fermentation Temp (F):	71

Summary

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Hopfully IPA
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Batch Size: 6.00 gal (8.39 gal preboil)
Estimated OG: 1.068 SG (actual: 1.074 SG)
Estimated FG: 1.016 SG (actual: 1.018 SG)
Estimated IBUs: 90 (Tinseth; actual: 115)
Estimated Color: 9 SRM (actual: 11 SRM)
Brewhouse Efficiency: 73% (actual: 78%)
Boil Time: 90 minutes

Grains:
14.00# Pale Malt (2-Row) US (88.89%)
0.88# Carapils/Dextrine (5.56%)
0.88# Caramel/Crystal 60L (5.56%)

Hops:
1.00 oz Simcoe (12.2%) @90 min
0.25 oz Simcoe (12.2%) @60 min
0.25 oz Columbus (14.5%) @60 min
0.25 oz Simcoe (12.2%) @30 min
0.25 oz Columbus (14.5%) @30 min
0.75 oz Simcoe (12.2%) @15 min
0.75 oz Columbus (14.5%) @15 min
1.25 oz Cascade (4.6%) @10 min
0.50 oz Simcoe (12.2%) @0 min
0.50 oz Columbus (14.5%) @0 min
0.50 oz Amarillo (8.6%) (dry hop)
0.50 oz Cascade (4.6%) (dry hop)
0.50 oz Centennial (9.1%) (dry hop)
0.00 oz Columbus (14.5%) (dry hop)
0.50 oz Simcoe (12.2%) (dry hop)
1.00 oz Citra (12.0%) (dry hop)

Yeast:
White Labs WLP001 (California Ale) (California Ale)

Mash/Sparge Schedule:
Single Infusion, 152F; Batch Sparge
Mash for 60 min at 152F w/ 5.12 gal of water at 168F
Mashout w/ 2.66 gal of water at 210F; hold for 10 min
Batch sparge w/ 2.89 gal of water at 189F; hold for 10 min

Fermentation Schedule:
Primary Fermentation: 15 days @66F
Secondary Fermentation: 7 days @71F
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