

BREWSHEET v2.0 (2010-06-17)

Batch			
Brew Name:	Back in Black IPA		
Bottle Top Code:	Calories per Pint:	231	
Estimated OG:	1.067	Actual OG:	1.069
Estimated FG:	1.017	Actual FG:	1.019
Estimated IBU:	75	Actual IBU:	83
Estimated SRM:	30	Actual SRM:	33
Brew Date:	09/17/10	Collected (gal):	5.35
Rack Date:	09/30/10	Racked (gal):	5.10
Bottle Date:	10/08/10	Bottled (gal):	5.00

BJCP Style Guidelines	
Style:	Cascadian Dark Ale
Code:	
OG:	1.060-1.075
FG:	1.008-1.016
IBU:	60.0-90.0
SRM:	30.0-40.0
ABV:	
CO2:	1.5-2.3

Inventory	
Bottles:	
Gallons:	
Date Checked:	

Efficiency	
Brewhouse:	73%
Batch Size:	75%
Into Boiler:	85%
Into Fermenter:	67%

Yeast Strain	
Yeast Strain:	White Labs WLP007 (English Ale)
Type:	English Ale
Attenuation (%):	70-80%
Actual Attenuation (%):	73%
Fermentation Temp (F):	65-70F
Flocculation:	medium-high

Yeast Amounts	
Cell Count (billions):	277
Vials (White Labs/Wyeast):	2.4
Dry Yeast (g):	14
Starter Volume (mL):	1250
DME Required (oz):	4.38
Vials Required (w/ Starter):	2.0

ON BREW DAY	
Heat 5.04 gallons of strike water to 166F	
Add grain and mash at 152F for 60 minutes	
Mash-out with 2.52 gallons at 210F, mix and hold for 10 minutes	
Vorlauf and collect first runnings (approx. 5.47 gallons)	
Add 2.92 gallons at 189F to lauter tun and sparge	
Vorlauf and collect second runnings (approx. 2.92 gallons)	
Boil for a total of 90 minutes with the following hop schedule:	

Collections	
1.5 oz. Centennial @90 minute(s)	
1.25 oz. Cascade @20 minute(s)	
1.25 oz. Centennial @20 minute(s)	
1.25 oz. Cascade @5 minute(s)	
1.5 oz. Columbus @5 minute(s)	
2 oz. Cascade @0 minute(s)	
1 oz. Columbus @0 minute(s)	

Summary	
Back in Black IPA	

Batch Size: 6.00 gal (8.39 gal preboil)	
Estimated OG: 1.067 SG (actual: 1.069 SG)	
Estimated FG: 1.017 SG (actual: 1.019 SG)	
Estimated IBUs: 75 (Tinseth; actual: 83)	
Estimated Color: 30 SRM (actual: 33 SRM)	
Brewhouse Efficiency: 73% (actual: 75%)	
Boil Time: 90 minutes	
Grains:	
14.00# Pale Malt (2-Row) US (90.32%)	
1.00# De-bittered black malt (6.45%)	
0.50# Caramel/Crystal 90L (3.23%)	

Hops	
1.50 oz Centennial (9.1%) @90 min	
1.25 oz Cascade (4.6%) @20 min	
1.25 oz Centennial (9.1%) @20 min	
1.25 oz Cascade (4.6%) @5 min	
1.50 oz Columbus (14.5%) @5 min	
2.00 oz Cascade (4.6%) @0 min	
1.00 oz Columbus (14.5%) @0 min	
1.00 oz Cascade (4.6%) (dry hop)	
0.63 oz Columbus (14.5%) (dry hop)	
0.38 oz Columbus (14.5%) (dry hop)	
1.00 oz Amarillo (8.6%) (dry hop)	
1.00 oz Centennial (9.1%) (dry hop)	
1.00 oz Simcoe (12.2%) (dry hop)	

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	14.00	1.036	0.061	2.0	90.32%
De-bittered black malt	1.00	1.030	0.004	413.0	6.45%
Caramel/Crystal 90L	0.50	1.034	0.002	90.0	3.23%

Hop	Alpha %	Ounces	Boil Time	IBU	% Bill
Centennial	9.1%	1.50	90	36.1	10.17%
Cascade	4.6%	1.25	20	8.6	8.47%
Centennial	9.1%	1.25	20	17.0	8.47%
Cascade	4.6%	1.25	5	2.8	8.47%
Columbus	14.5%	1.50	5	10.7	10.17%
Cascade	4.6%	2.00	0	0.0	13.56%
Columbus	14.5%	1.00	0	0.0	6.78%
Cascade	4.6%	1.00	dry	0.0	6.78%
Columbus	14.5%	0.63	dry	0.0	4.24%
Columbus	14.5%	0.38	dry	0.0	2.54%
Amarillo	8.6%	1.00	dry	0.0	6.78%
Centennial	9.1%	1.00	dry	0.0	6.78%
Simcoe	12.2%	1.00	dry	0.0	6.78%

Brewing	
Batch Size (gal):	6.00
Total Grain Weight (lbs):	15.50
Grain Temperature (F):	81
Mash Ratio (qts/lb):	1.30
Mash/Lauter Deadspace (gal):	0.25
Total Water Needed (gal):	10.57
Desired Mash Temperature (F):	152
Strike Water (gal):	5.04
Strike Temperature (F):	166
Grain Absorption (gal):	1.94
Mash-out Temperature (F):	152
Mash-out Water (gal):	2.62

Gravity		Collections	
Potential OG:	1.092	First Runnings (gal):	6.00
OG:	1.066	SG of First Runnings:	1.047
OG Temperature (F):	84	SG Temperature (F):	143
Corrected OG:	1.069	Corrected SG:	1.064
SG at Racking:	1.022	Second Runnings (gal):	2.60
SG Temperature (F):	70	SG of Second Runnings:	1.019
Corrected SG:	1.023	SG Temperature (F):	153
FG:	1.017	Corrected SG:	1.039
FG Temperature (F):	75	Estimated Preboil SG:	1.056
Corrected FG:	1.019	Preboil Volume (gal):	8.60
Potential ABV (%):	8.8%	SG of Preboil Volume:	1.040
Actual ABV (%):	6.6%	SG Temperature (F):	136
IBU to Gravity Ratio:	1.20	Corrected SG:	1.055

Diacetyl Rest		Carbonation	
Target Fermentation Completion:	75%	CO2 Volume:	2.20
Target SG for Diacetyl Rest:	1.030	Bottling Temperature (F):	
		Priming Sugar (oz):	
		DME (oz):	
CO2 Released During Fermentation (g):	1005.22	Forced Carbonation (lbs):	

Notes

6 gal batch size to take into account hop absorption (5.5 gal collected).
 Mash temp, mash-out temp and sparge temp hit dead on!
 First runnings refrac = 15.5 (1.064) – dead on!
 Second runnings refrac = 9.2 (1.037) – acceptable.
 Preboil refrac = 12.7 (1.052) – acceptable.
 Collected refrac = 16.4 (1.068) – close enough.
 Higher evaporation rate than predicted affected OG and efficiency.
 09/30: nice roastiness and bitterness at racking; this will be nice after dry hopping!
 10/6: great aroma and hop flavor; slight malty and roasty undertones
 10/14: total west coast IPA hop aroma that's oh so good!

10/14: low carbonation now; slight toast in the initial flavor, but it's mostly all about the hops.
 Bitterness kicks in and then lingers with a toast that fights its way in.

Extra Variables	
12 oz Bottles Required:	51
Primary Fermentation Temp. (F):	66
Secondary Fermentation Temp (F):	66

Yeast:
 White Labs WLP007 (English Ale) (English Ale)

Mash/Sparge Schedule:
 Single Infusion, 152F; Batch Sparge
 Mash for 60 min at 152F w/ 5.04 gal of water at 166F
 Mashout w/ 2.62 gal of water at 210F; hold for 10 min
 Batch sparge w/ 2.92 gal of water at 189F; hold for 10 min

Fermentation Schedule:
 Primary Fermentation: 13 days @66F