

BREWSHEET v2.7 (2012-01-27)

Batch			
Brew Name:	Back in Black IPA		
Bottle Top Code:	Calories per Pint:		219
Estimated OG:	1.070	Actual OG:	1.065
Estimated FG:	1.021	Actual FG:	1.020
Estimated IBU:	67	Actual IBU:	70
Estimated SRM:	49	Actual SRM:	49
Brew Date:	01/14/12	Collected (gal):	10.00
Rack Date:		Racked (gal):	
Bottle Date:	02/11/12	Bottled (gal):	9.15

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:	70%
Batch Size:	65%
Into Boiler:	65%
Into Fermenter:	65%

Yeast Strain	
Yeast Strain:	Danstar Windsor (Dry Ale)
Type:	Dry Ale
Attenuation (%):	67-72%
Actual Attenuation (%):	69%
Fermentation Temp (F):	64-70F
Flocculation:	medium

Yeast Amounts	
Cell Count (billions):	529
Vials (White Labs/Wyeast):	4.5
Dry Yeast (g):	26
Starter Volume (mL):	
DME Required (oz)	
Vials Required (w/ Starter):	

ON BREW DAY	
Heat 11.77 gallons of strike water to 173F	
Add grain and mash at 154F for 60 minutes	
Mash-out with 5.33 gallons at 210F, mix and hold for 10 minutes	
Vorlauf and collect first runnings (approx. 12.93 gallons)	
Add 1.51 gallons at 232F to lautur tun and sparge	
Vorlauf and collect second runnings (approx. 1.51 gallons)	
Boil for a total of 95 minutes with the following hop schedule:	

Summary	
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**Back in Black IPA**  
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 Batch Size: 11.00 gal (14.44 gal preboil)  
 Estimated OG: 1.070 SG (actual: 1.065 SG)  
 Estimated FG: 1.021 SG (actual: 1.020 SG)  
 Estimated IBUs: 67 (Tinseth; actual: 70)  
 Estimated Color: 49 SRM (actual: 49 SRM)  
 Brewhouse Efficiency: 70% (actual: 65%)  
 Boil Time: 95 minutes

**Grains:**  
 21.50# Maris Otter Malt (4.0L) (68.53%)  
 1.75# De-bittered black malt (413.0L) (5.58%)  
 3.25# Caramel/Crystal 75L (75.0L) (10.36%)  
 0.75# Caramel/Crystal 90L (90.0L) (2.39%)  
 1.25# Carapils/Dextrine (2.0L) (3.98%)  
 1.88# Chocolate Malt (350.0L) (5.98%)  
 1.00# Rice hulls (0.0L) (3.19%)

**Hops:**  
 3.25 oz Centennial (8.3%) (first wort)  
 2.00 oz Cascade (5.3%) @20 min  
 1.50 oz Centennial (8.3%) @20 min  
 2.25 oz Cascade (5.3%) @5 min  
 1.00 oz Columbus (14.5%) @5 min  
 2.75 oz Cascade (5.3%) @0 min  
 1.50 oz Columbus (14.5%) @0 min  
 1.13 oz Cascade (5.3%) (dry hop)  
 1.13 oz Columbus (14.5%) (dry hop)  
 1.13 oz Centennial (8.3%) (dry hop)  
 1.13 oz Amarillo (6.9%) (dry hop)

Grain	Pounds	Potential	SG Share	Color	% Bill
Maris Otter Malt	21.50	1.038	0.052	4.0	68.53%
De-bittered black malt	1.75	1.030	0.003	413.0	5.58%
Caramel/Crystal 75L	3.25	1.034	0.007	75.0	10.36%
Caramel/Crystal 90L	0.75	1.034	0.002	90.0	2.39%
Carapils/Dextrine	1.25	1.033	0.003	2.0	3.98%
Chocolate Malt	1.88	1.028	0.003	350.0	5.98%
Rice hulls	1.00	1.000	0.000	0.0	3.19%

Brewing			
Batch Size (gal):	11.00	Estimated First Runnings (gal):	12.93
Total Grain Weight (lbs):	31.38	Desired Sparge Temperature (F):	170
Grain Temperature (F):	63	Sparge Water (gal):	1.51
Mash Ratio (qts/lb):	1.50	Sparge Water Temperature (F):	232
Mash/Lauter Deadspace (gal):	0.25	Estimated Preboil Volume (gal):	14.44
Total Water Needed (gal):	18.61	Boil Time (min):	95
Desired Mash Temperature (F):	154	Evaporation Rate (gal/hr):	1.70
Strike Water (gal):	11.77	Estimated Evaporation Loss (gal):	2.69
Strike Temperature (F):	173	Trub Loss (gal):	0.75
Grain Absorption (gal):	3.92	Volume Left in Kettle (gal):	0.00
Mash-out Temperature (F):	154	Actual Evaporation Rate (gal/hr):	1.74
Mash-out Water (gal):	5.33	Actual Evaporation Loss (gal):	2.75

Gravity		Collections	
Potential OG:	1.100	First Runnings (gal):	5.85
OG:	1.065	SG of First Runnings:	1.076
OG Temperature (F):	60	60 SG Temperature (F):	60
Corrected OG:	1.065	Corrected SG:	1.076
SG at Racking:		Second Runnings (gal):	7.65
SG Temperature (F):		SG of Second Runnings:	1.033
Corrected SG:		SG Temperature (F):	60
FG:	1.021	Corrected SG:	1.033
FG Temperature (F):	38	Estimated Preboil SG:	1.052
Corrected FG:	1.020	Preboil Volume (gal):	13.50
Estimated ABV (%):	6.4%	SG of Preboil Volume:	1.053
Actual ABV (%):	5.9%	SG Temperature (F):	60
IBU to Gravity Ratio:	1.07	Corrected SG:	1.053

Diacetyl Rest		Carbonation	
Target Fermentation Completion:		CO2 Volume:	2.30
Target SG for Diacetyl Rest:		Bottling Temperature (F):	68
		Priming Sugar (oz):	7.06
		DME (oz):	9.88
		Forced Carbonation (lbs):	24.5

**Notes**  
 1/24: 1.031 SG; sweet aroma with toast and chocolate; flavor is slightly sweet and disappears quickly to a stiff bitterness; some chocolate and toast in flavor as well.  
 Although this would still be nice at this SG, I'd like it to get down to 1.025 if possible.  
 Will check again at dry hop time. Krausen had fallen completely.  
 1/28: 1.031 SG; added dry hops.  
 2/7: cold crashed; plan to keg/bottle on 2/11.  
 2/11: kegged/bottled.  
 Kegged batch: nice hop aroma off the bat with a stiff backing of chocolate.  
 Flavor is all hop at first, stiff bitterness, with chocolate coming through in the finish.  
 Much more intense roast than the previous attempts.  
 This dried out pretty quickly from 1/28 reading; very happy about that.  
 Bottled batch was 1.026 (5.1% ABV); added 3.6 oz corn sugar.  
 Collected 4.5 gals; filled 43 12-oz bottles and 2 "bombers."  
 Aroma and flavor was similar to the kegged batch but perhaps a tad sweeter and less "hoppy."  
 This was more than likely 1.070 SG due to refrac/hydro differences.

User Variables	
12 oz. Bottles Required:	93
Primary Fermentation Temp. (F):	66
Secondary Fermentation Temp (F):	72
FWH IBU Factor (%):	10%
Strike Temperature Factor (F):	7
Sparge Temperature Factor (F):	4
Mash Time (min):	60
Specific Gravity (Brix):	16.8
Specific Gravity (SG):	1.065
Volume in hoses (gal):	0.22
Volume in CFC (gal):	0.19
Volume in HERMS coil (gal):	0.25

**Yeast:**  
 Danstar Windsor (Dry Ale)

**Mash/Sparge Schedule:**  
 Single Infusion, 154F, 60 min; Batch Sparge

**Fermentation Schedule:**

Strike: 11.64 gal (~1.48 mash ratio); total mash vol: 14.15 gal; sparge: 7.72 gal.  
 Decided to do two mashes (each with exactly half the ingredients) - and two sparges.  
 FWH went in with second mash collection.  
 First mash first collections was 2.7 gal @ 1.080 SG.  
 First mash second collections was 4 gal @ 1.031 SG.  
 Second mash first collections was 3.15 gal @ 1.072 SG.  
 Second mash second collections was 3.65 gal @ 1.035 SG.  
 Total collected was 13.5 gal @ 1.052 SG.  
 Increased boil by 35 min for gravity.  
 Did not aerate, but there was a lot of foam after collecting to fermenters.  
 First mash was slow; not enough rice hulls.  
 2/26: bottle conditioned version is nice and almost perfectly carbonated.