

BREWSHEET v2.1 (2011-01-04)

Batch			
Brew Name:	Hakuna Matata Pale Ale v4		
Bottle Top Code:	Calories per Pint:		195
Estimated OG:	1.056	Actual OG:	1.059
Estimated FG:	1.013	Actual FG:	1.011
Estimated IBU:	37	Actual IBU:	39
Estimated SRM:		Actual SRM:	8
Brew Date:	01/08/11	Collected (gal):	11.10
Rack Date:	01/22/11	Racked (gal):	10.80
Bottle Date:	02/02/11	Bottled (gal):	10.00

BJCP Style Guidelines	
Style:	American Pale Ale
Code:	10A
OG:	1.045-1.060
FG:	1.010-1.015
IBU:	30.0-45.0
SRM:	5.0-14.0
ABV:	4.5-6.0%
CO2:	2.2-2.7

Inventory	
Bottles:	
Gallons:	
Date Checked:	

Efficiency	
Brewhouse:	73%
Batch Size:	78%
Into Boiler:	91%
Into Fermenter:	72%

Yeast Strain	
Yeast Strain:	White Labs WLP001 (California Ale)
Type:	California Ale
Attenuation (%):	73-80%
Actual Attenuation (%):	81%
Fermentation Temp (F):	68-73F
Flocculation:	medium

Yeast Amounts	
Cell Count (billions):	465
Vials (White Labs/Wyeast):	4.0
Dry Yeast (g):	23
Starter Volume (mL):	5000
DME Required (oz):	17.50
Vials Required (w/ Starter):	1.0

ON BREW DAY	
Heat 7.97 gallons of strike water to 173F	
Add grain and mash at 154F for 60 minutes	
Mash-out with 3.76 gallons at 210F, mix and hold for 10 minutes	
Vorlauf and collect first runnings (approx. 8.29 gallons)	
Add 7.09 gallons at 183F to lautur tun and sparge	
Vorlauf and collect second runnings (approx. 7.09 gallons)	
Boil for a total of 90 minutes with the following hop schedule:	
1 oz. Magnum (GR) @60 minute(s)	
1 oz. Perle (GR) @60 minute(s)	
4 oz. Cascade @10 minute(s)	
4 oz. Cascade @0 minute(s)	

Summary

Hakuna Matata Pale Ale v4	
Batch Size: 12.00 gal (15.38 gal preboil)	
Estimated OG: 1.056 SG (actual: 1.059 SG)	
Estimated FG: 1.013 SG (actual: 1.011 SG)	
Estimated IBUs: 37 (Finseth; actual: 39)	
Estimated Color: 8 SRM (actual: 9 SRM)	
Brewhouse Efficiency: 73% (actual: 78%)	
Boil Time: 90 minutes	
Grains:	
23.00# Northwestern Pale Ale malt (2.8L) (90.20%)	
2.50# British carastan (34.0L) (9.80%)	

Grain	Pounds	Potential	SG Share	Color	% Bill
Northwestern Pale Ale malt	23.00	1.036	0.050	2.8	90.20%
British carastan	2.50	1.035	0.005	34.0	9.80%

Brewing			
Batch Size (gal):	12.00	Estimated First Runnings (gal):	8.29
Total Grain Weight (lbs):	25.50	Desired Sparge Temperature (F):	170
Grain Temperature (F):	64	Sparge Water (gal):	7.09
Mash Ratio (qts/lb):	1.25	Sparge Water Temperature (F):	183
Mash/Lauter Deadspace (gal):	0.25	Estimated Preboil Volume (gal):	15.38
Total Water Needed (gal):	18.81	Boil Time (min):	90
Desired Mash Temperature (F):	154	Evaporation Rate (gal/hr):	1.75
Strike Water (gal):	7.97	Estimated Evaporation Loss (gal):	2.63
Strike Temperature (F):	173	Trub Loss (gal):	0.75
Grain Absorption (gal):	3.19	Volume Left in Kettle (gal):	0.00
Mash-out Temperature (F):	154	Actual Evaporation Rate (gal/hr):	2.20
Mash-out Water (gal):	3.76	Actual Evaporation Loss (gal):	3.30

Hop	Alpha %	Ounces	Boil Time	IBU	% Bill
Magnum (GR)	12.5%	1.00	60	17.1	7.14%
Perle (GR)	6.7%	1.00	60	9.2	7.14%
Cascade	5.4%	4.00	10	10.7	28.57%
Cascade	5.4%	4.00	0	0.0	28.57%
Cascade	5.4%	4.00	dry	0.0	28.57%

Gravity		Collections	
Potential OG:	1.076	First Runnings (gal):	8.15
OG:	1.059	SG of First Runnings:	1.109
OG Temperature (F):	60	SG Temperature (F):	60
Corrected OG:	1.059	Corrected SG:	1.109
SG at Racking:	1.010	Second Runnings (gal):	7.00
SG Temperature (F):	66	SG of Second Runnings:	1.049
Corrected SG:	1.011	SG Temperature (F):	60
FG:	1.012	Corrected SG:	1.049
FG Temperature (F):	50	Estimated Preboil SG:	1.081
Corrected FG:	1.011	Preboil Volume (gal):	15.15
Potential ABV (%):	7.3%	SG of Preboil Volume:	1.055
Actual ABV (%):	6.2%	SG Temperature (F):	60
IBU to Gravity Ratio:	0.66	Corrected SG:	1.055

Diacetyl Rest		Carbonation	
Target Fermentation Completion:		CO2 Volume:	2.45
Target SG for Diacetyl Rest:		Bottling Temperature (F):	
		Priming Sugar (oz):	
		DME (oz):	
		Forced Carbonation (lbs):	

Notes	
Bulk grain buy included carastan (30-37L) so I decided to use it instead of C60. Same with NW Pale Ale malt; slightly more malty which will be nice.	4/5: May decide to bottle this batch and let it age since it has "funk."
Collection gravities off probably due to grain depth in tun.	5/8: dumped both kegs; bacterial infection and I needed the kegs... first time ever!
I measured the first of the runnings which were probably more dense.	
Used yeast harvested from Hopfully IPA a long time ago.	
Made 2500 mL starter then grew to 5000 mL; pitched next day after crash cool.	
1/22: Hopefully all is well; not "too" bad but not sure if we have an infection.	
Low SG might indicate an infection, but time will tell.	
Racked -half to secondary on dry hops; dry hopped the other half in the primary.	
2/2: Racked batch at 1.012 SG (5 gals); other at 1.011 SG (5 gals and tastes better).	
2/6: gelatin batch is much clearer; no noticeable dry hop difference.	

User Variables	
12 oz. Bottles Required:	102
Primary Fermentation Temp. (F):	68
Secondary Fermentation Temp (F):	71
FNW/IBU Factor (%):	10%
Strike Temperature Factor (F):	5
Sparge Temperature Factor (F):	3
Specific Gravity (P):	14.5
Specific Gravity (SG):	1.059

Yeast:	
White Labs WLP001 (California Ale)	
Mash/Sparge Schedule:	
Single Infusion, 154F; Batch Sparge	
Mash for 60 min at 154F w/ 7.97 gal of water at 173F	
Mashout w/ 3.76 gal of water at 210F; hold for 10 min	
Batch sparge w/ 7.09 gal of water at 183F; hold for 10 min	
Fermentation Schedule:	
Primary Fermentation: 14 days @68F	
Secondary Fermentation: 11 days @71F	