

BREWSHEET v2.0 (2010-06-17)

Batch			
Brew Name:	Hakuna Matata Pale Ale v2.0		
Bottle Top Code:	HM	Calories per Pint:	184
Estimated OG:	1.053	Actual OG:	1.055
Estimated FG:	1.012	Actual FG:	1.014
Estimated IBU:	38	Actual IBU:	42
Estimated SRM:	8	Actual SRM:	9
Brew Date:	06/13/10	Collected (gal):	5.00
Rack Date:	06/27/10	Racked (gal):	4.75
Bottle Date:	07/04/10	Bottled (gal):	4.45

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:	46
Gallons:	4.31
Date Checked:	07/04/10

Efficiency	
Brewhouse:	72%
Batch Size:	75%
Into Boiler:	92%
Into Fermenter:	67%

Yeast Strain	
Yeast Strain:	White Labs WLP001
Type:	California Ale
Attenuation (%):	73-80%
Actual Attenuation (%):	75%
Fermentation Temp (F):	68-73F
Flocculation:	medium

Summary	
Hakuna Matata Pale Ale v2.0	

Batch Size:	5.50 gal (7.46 gal preboil)
Estimated OG:	1.053 SG
Estimated FG:	1.012 SG
Estimated IBUs:	38
Estimated Color:	8 SRM
Brewhouse Efficiency:	72%
Boil Time:	75 minutes

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	10.50	1.036	0.049	2.0	93.33%
Caramel/Crystal 60L	0.75	1.034	0.003	60.0	6.67%

Brewing			
Batch Size (gal):	5.50	Estimated First Runnings (gal):	3.81
Total Grain Weight (lbs):	11.25	Desired Sparge Temperature (F):	168
Grain Temperature (F):	81	Sparge Water (gal):	3.65
Mash Ratio (qts/lb):	1.30	Sparge Water Temperature (F):	180
Mash/Lauter Deadspace (gal):	0.25	Estimated Preboil Volume (gal):	7.46
Total Water Needed (gal):	9.12	Boil Time (min):	75
Desired Mash Temperature (F):	151	Evaporation Rate (%):	13%
Strike Water (gal):	3.66	Estimated Evaporation Loss (gal):	1.21
Strike Temperature (F):	165	Trub Loss (gal):	0.75
Grain Absorption (gal):	1.41	Volume Left in Kettle (gal):	-0.10
Mash-out Temperature (F):	150	Actual Evaporation Rate (%):	21%
Mash-out Water (gal):	1.81	Actual Evaporation Loss (gal):	2.05

Yeast Amounts	
Cell Count (billions):	203
Vials (White Labs/Wyeast):	1.7
Dry Yeast (g):	10
Starter Volume (mL):	2500
DME Required (oz):	8.75
Vials Required (w/ Starter):	1.0

Grains:	
10.50# Pale Malt (2-Row) US (93.33%)	
0.75# Caramel/Crystal 60L (6.67%)	

Hop	Alpha %	Ounces	Boil Time	IBU	% Bill
Magnum (GR)	14.4%	0.50	60	22.1	10.81%
Perle (US)	7.1%	0.38	60	8.2	8.11%
Cascade	9.1%	0.75	10	7.6	16.22%
Cascade	9.1%	2.00	0	0.0	43.24%
Cascade	9.1%	1.00	dry	0.0	21.62%

Gravity		Collections	
Potential OG:	1.073	First Runnings (gal):	4.20
OG:	1.053	SG of First Runnings:	1.045
OG Temperature (F):	79	SG Temperature (F):	151
Corrected OG:	1.055	Corrected SG:	1.064
SG at Racking:	1.016	Second Runnings (gal):	3.50
SG Temperature (F):	70	SG of Second Runnings:	1.012
Corrected SG:	1.017	SG Temperature (F):	155
FG:	1.012	Corrected SG:	1.032
FG Temperature (F):	75	Estimated Preboil SG:	1.050
Corrected FG:	1.014	Preboil Volume (gal):	7.70
Potential ABV (%):	6.9%	SG of Preboil Volume:	1.027
Actual ABV (%):	5.4%	SG Temperature (F):	157
IBU to Gravity Ratio:	0.75	Corrected SG:	1.048

ON BREW DAY	
Heat 3.66 gallons of strike water to 165F	
Add grain and mash at 151F for 60 minutes	
Mash-out with 1.81 gallons at 210F, mix and hold for 10 minutes	
Vorlauf and collect first runnings (approx. 3.81 gallons)	
Add 3.65 gallons at 180F to lauter tun and sparge	
Vorlauf and collect second runnings (approx. 3.65 gallons)	
Boil for a total of 75 minutes with the following hop schedule:	
0.5 oz. Magnum (GR) @60 minute(s)	
0.375 oz. Perle (US) @60 minute(s)	
0.75 oz. Cascade @10 minute(s)	
2 oz. Cascade @0 minute(s)	

Hops:	
0.50 oz Magnum (GR) (14.4%) @60 min	
0.38 oz Perle (US) (7.1%) @60 min	
0.75 oz Cascade (9.1%) @10 min	
2.00 oz Cascade (9.1%) @0 min	
1.00 oz Cascade (9.1%) (dry hop)	

Diacetyl Rest		Carbonation	
Target Fermentation Completion:	75%	CO2 Volume:	2.00
Target SG for Diacetyl Rest:	1.024	Bottling Temperature (F):	73
		Priming Sugar (oz):	2.87
		DME (oz):	4.01
		Forced Carbonation (lbs):	22.3

Notes	
Used yeast harvested from Hopfully IPA v2.0.	7/24: first bottle sample; pretty much the right bitterness.
New jet burner is harder to adjust and keep a good boil.	Dry hop had some effect, but not significant.
Sometimes, the boil was too much; other times not enough.	Nice malt aroma from the crystal.
Low efficiency into fermenter due to high evaporation rate (jet burner blues).	Next time, maybe dry hop with 1.5 oz.
	Maybe a nice pale ale is a cross between Harpooned and Hakuna Matata!

Extra Variables	
12 oz. Bottles Required:	46

Yeast:	
White Labs WLP001 (California Ale)	

Mash/Sparge Schedule:	
Single Infusion, 151F; Batch Sparge	
Mash for 60 min at 151F w/ 3.66 gal of water at 165F	
Mashout w/ 1.81 gal of water at 210F; hold for 10 min	
Batch sparge w/ 3.65 gal of water at 180F; hold for 10 min	