

BREWSHEET v2.0 (2010-06-17)

Batch			
Brew Name:	Hakuna Matata Pale Ale v3.0		
Bottle Top Code:	Calories per Pint:	184	
Estimated OG:	1.056	Actual OG:	1.055
Estimated FG:	1.013	Actual FG:	1.016
Estimated IBU:	39	Actual IBU:	39
Estimated SRM:	9	Actual SRM:	9
Brew Date:	09/12/10	Collected (gal):	11.15
Rack Date:	09/26/10	Racked (gal):	
Bottle Date:	09/26/10	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:	72%
Into Boiler:	87%
Into Fermenter:	73%

Yeast Strain	
Yeast Strain:	White Labs WLP001 (California Ale)
Type:	California Ale
Attenuation (%):	73-80%
Actual Attenuation (%):	71%
Fermentation Temp (F):	68-73F
Flocculation:	medium

Summary	
Hakuna Matata Pale Ale v3.0	

Batch Size: 11.00 gal (14.33 gal preboil)	
Estimated OG: 1.056 SG (actual: 1.055 SG)	
Estimated FG: 1.013 SG (actual: 1.016 SG)	
Estimated IBUs: 39 (Tinseth; actual: 39)	
Estimated Color: 9 SRM (actual: 9 SRM)	
Brewhouse Efficiency: 73% (actual: 72%)	
Boil Time: 90 minutes	

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	21.00	1.036	0.050	2.0	89.36%
Caramel/Crystal 60L	1.50	1.034	0.003	60.0	6.38%
Victory Malt	1.00	1.034	0.002	25.0	4.26%

Brewing			
Batch Size (gal):	11.00	Estimated First Runnings (gal):	8.64
Total Grain Weight (lbs):	23.50	Desired Sparge Temperature (F):	170
Grain Temperature (F):	81	Sparge Water (gal):	5.69
Mash Ratio (qts/lb):	1.30	Sparge Water Temperature (F):	186
Mash/Lauter Deadspace (gal):	0.25	Estimated Preboil Volume (gal):	14.33
Total Water Needed (gal):	17.52	Boil Time (min):	90
Desired Mash Temperature (F):	153	Evaporation Rate (%):	12%
Strike Water (gal):	7.64	Estimated Evaporation Loss (gal):	2.58
Strike Temperature (F):	167	Trub Loss (gal):	0.75
Grain Absorption (gal):	2.94	Volume Left in Kettle (gal):	0.00
Mash-out Temperature (F):	151	Actual Evaporation Rate (%):	12%
Mash-out Water (gal):	4.19	Actual Evaporation Loss (gal):	2.60

Hop	Alpha %	Ounces	Boil Time	IBU	% Bill
Magnum (GR)	12.5%	1.00	60	18.7	9.76%
Cluster	5.0%	2.00	60	14.9	19.51%
Cascade	4.6%	2.25	10	5.6	21.95%
Cascade	4.6%	5.00	0	0.0	48.78%

Gravity		Collections	
Potential OG:	1.076	First Runnings (gal):	8.50
OG:	1.052	SG of First Runnings:	1.067
OG Temperature (F):	83	SG Temperature (F):	132
Corrected OG:	1.055	Corrected SG:	1.060
SG at Racking:		Second Runnings (gal):	6.00
SG Temperature (F):		SG of Second Runnings:	1.023
Corrected SG:		SG Temperature (F):	146
FG:	1.016	Corrected SG:	1.040
FG Temperature (F):	60	Estimated Preboil SG:	1.064
Corrected FG:	1.016	Preboil Volume (gal):	14.50
Potential ABV (%):	7.3%	SG of Preboil Volume:	1.037
Actual ABV (%):	5.1%	SG Temperature (F):	133
IBU to Gravity Ratio:	0.71	Corrected SG:	1.050

Diacetyl Rest		Carbonation	
Target Fermentation Completion:	75%	CO2 Volume:	2.25
Target SG for Diacetyl Rest:	1.023	Bottling Temperature (F):	38
		Priming Sugar (oz):	3.92
		DME (oz):	5.49
		Forced Carbonation (lbs):	8.6

Notes	
Made two 1L starters with WLP001 from a friend's washed yeast.	
First runnings refrac = 19.3 plato (1.081) - very close!	
Forgot to take refrac reading for second runnings - doh!	
Preboil refrac = 12.2 plato (1.049) - still close.	
Collected refrac = 13.4 plato (1.055) - dead on!	
Didn't rack to secondary.	
09/22: moved fermenters to ambient temp (78F) when SGs were 1.017 and 1.019.	
09/26: kegged at 1.017 SG (A) for 70% attenuation and at 1.015 SG (B) for 72% attenuation.	
09/27: carbed and shook keg (A) at 23 PSI for 3 mins; waited 1 hour; purged, carbed at 8.6 PSI	
10/1: tasted this "young" at Antoberfest, great beer overall with good bitterness.	

Yeast Amounts	
Cell Count (billions):	428
Vials (White Labs/Wyeast):	3.6
Dry Yeast (g):	21
Starter Volume (mL):	4750
DME Required (oz):	16.63
Vials Required (w/ Starter):	1.0

ON BREW DAY	
Heat 7.64 gallons of strike water to 167F	
Add grain and mash at 153F for 60 minutes	
Mash-out with 4.19 gallons at 210F, mix and hold for 10 minutes	
Vorlauf and collect first runnings (approx. 8.64 gallons)	
Add 5.69 gallons at 186F to lautur tun and sparge	
Vorlauf and collect second runnings (approx. 5.69 gallons)	
Boil for a total of 90 minutes with the following hop schedule:	
1 oz. Magnum (GR) @60 minute(s)	
2 oz. Cluster @60 minute(s)	
2.25 oz. Cascade @10 minute(s)	
5 oz. Cascade @0 minute(s)	

Grains:	
21.00#	Pale Malt (2-Row) US (89.36%)
1.50#	Caramel/Crystal 60L (6.38%)
1.00#	Victory Malt (4.26%)

Hops:	
1.00 oz	Magnum (GR) (12.5%) @60 min
2.00 oz	Cluster (5.0%) @60 min
2.25 oz	Cascade (4.6%) @10 min
5.00 oz	Cascade (4.6%) @0 min

Extra Variables	
12 oz. Bottles Required:	102
Primary Fermentation Temp. (F):	66
Secondary Fermentation Temp (F):	66

Yeast:	
White Labs WLP001 (California Ale) (California Ale)	
Mash/Sparge Schedule:	
Single Infusion, 153F; Batch Sparge	
Mash for 60 min at 153F w/ 7.64 gal of water at 167F	
Mashout w/ 4.19 gal of water at 210F; hold for 10 min	
Batch sparge w/ 5.69 gal of water at 186F; hold for 10 min	
Fermentation Schedule:	