

BREWSHEET v2.3 (2011-02-26)

| Batch | | | |
|------------------|------------------------|------------------|-------|
| Brew Name: | Hakuna Matata Pale Ale | | |
| Bottle Top Code: | Calories per Pint: | | 177 |
| Estimated OG: | 1.055 | Actual OG: | 1.053 |
| Estimated FG: | 1.013 | Actual FG: | 1.015 |
| Estimated IBU: | 34 | Actual IBU: | 35 |
| Estimated SRM: | | Actual SRM: | 8 |
| Brew Date: | 05/15/11 | Collected (gal): | 5.50 |
| Rack Date: | 06/12/11 | Racked (gal): | 5.00 |
| Bottle Date: | 06/12/11 | Bottled (gal): | 5.00 |

| 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: | 70% |
| Batch Size: | 67% |
| Into Boiler: | 78% |
| Into Fermenter: | 67% |

| Yeast Strain | |
|-------------------------|------------------------------------|
| Yeast Strain: | White Labs WLP001 (California Ale) |
| Type: | California Ale |
| Attenuation (%): | 73-80% |
| Actual Attenuation (%): | 72% |
| Fermentation Temp (F): | 68-73F |
| Flocculation: | medium |

| Yeast Amounts | |
|------------------------------|------|
| Cell Count (billions): | 232 |
| Vials (White Labs/Wyeast): | 2.0 |
| Dry Yeast (g): | 12 |
| Starter Volume (mL): | 2750 |
| DME Required (oz): | 9.63 |
| Vials Required (w/ Starter): | 1.0 |

| ON BREW DAY | |
|---|--|
| Heat 4.14 gallons of strike water to 173F | |
| Add grain and mash at 152F for 60 minutes | |
| Mash-out with 2.16 gallons at 210F, mix and hold for 10 minutes | |
| Vorlauf and collect first runnings (approx. 4.4 gallons) | |
| Add 4.93 gallons at 183F to lautur tun and sparge | |
| Vorlauf and collect second runnings (approx. 4.93 gallons) | |
| Boil for a total of 90 minutes with the following hop schedule: | |
| 0.5 oz. Magnum (GR) @60 minute(s) | |
| 0.5 oz. Perle (GR) @60 minute(s) | |
| 1.5 oz. Cascade @10 minute(s) | |
| 2 oz. Cascade @0 minute(s) | |

| Summary | |
|---|--|
| Hakuna Matata Pale Ale | |
| ----- | |
| Batch Size: 6.00 gal (9.33 gal preboil) | |
| Estimated OG: 1.055 SG (actual: 1.053 SG) | |
| Estimated FG: 1.013 SG (actual: 1.015 SG) | |
| Estimated IBUs: 34 (Finseth; actual: 35) | |
| Estimated Color: 9 SRM (actual: 9 SRM) | |
| Brewhouse Efficiency: 70% (actual: 67%) | |
| Boil Time: 90 minutes | |
| Grains: | |
| 11.75# Northwestern Pale Ale malt (2.8L) (88.68%) | |
| 1.50# British carastan (34.0L) (11.32%) | |

| Grain | Pounds | Potential | SG Share | Color | % Bill |
|----------------------------|--------|-----------|----------|-------|--------|
| Northwestern Pale Ale malt | 11.75 | 1.036 | 0.049 | 2.8 | 88.68% |
| British carastan | 1.50 | 1.035 | 0.006 | 34.0 | 11.32% |

| Brewing | | |
|-------------------------------|-------|--|
| Batch Size (gal): | 6.00 | Estimated First Runnings (gal): 4.40 |
| Total Grain Weight (lbs): | 13.25 | Desired Sparge Temperature (F): 170 |
| Grain Temperature (F): | 73 | Sparge Water (gal): 4.93 |
| Mash Ratio (qts/lb): | 1.25 | Sparge Water Temperature (F): 183 |
| Mash/Lauter Deadspace (gal): | 0.25 | Estimated Preboil Volume (gal): 9.33 |
| Total Water Needed (gal): | 11.23 | Boil Time (min): 90 |
| Desired Mash Temperature (F): | 152 | Evaporation Rate (gal/hr): 1.72 |
| Strike Water (gal): | 4.14 | Estimated Evaporation Loss (gal): 2.58 |
| Strike Temperature (F): | 173 | Trub Loss (gal): 0.75 |
| Grain Absorption (gal): | 1.86 | Volume Left in Kettle (gal): 0.50 |
| Mash-out Temperature (F): | 152 | Actual Evaporation Rate (gal/hr): 1.82 |
| Mash-out Water (gal): | 2.16 | Actual Evaporation Loss (gal): 2.43 |

| Hop | Alpha % | Ounces | Boil Time | IBU | % Bill |
|-------------|---------|--------|-----------|------|--------|
| Magnum (GR) | 12.5% | 0.50 | 60 | 17.2 | 7.69% |
| Perle (GR) | 6.7% | 0.50 | 60 | 9.2 | 7.69% |
| Cascade | 5.3% | 1.50 | 10 | 7.9 | 23.08% |
| Cascade | 5.3% | 2.00 | 0 | 0.0 | 30.77% |
| Cascade | 5.3% | 2.00 | dry | 0.0 | 30.77% |

| Gravity | | Collections | |
|-----------------------|-------|------------------------|-------|
| Potential OG: | 1.079 | First Runnings (gal): | 3.85 |
| OG: | 1.053 | SG of First Runnings: | 1.068 |
| OG Temperature (F): | 60 | SG Temperature (F): | 60 |
| Corrected OG: | 1.053 | Corrected SG: | 1.068 |
| SG at Racking: | | Second Runnings (gal): | 5.33 |
| SG Temperature (F): | | SG of Second Runnings: | 1.024 |
| Corrected SG: | | SG Temperature (F): | 60 |
| FG: | 1.015 | Corrected SG: | 1.024 |
| FG Temperature (F): | 58 | Estimated Preboil SG: | 1.043 |
| Corrected FG: | 1.015 | Preboil Volume (gal): | 9.18 |
| Potential ABV (%): | 7.3% | SG of Preboil Volume: | 1.040 |
| Actual ABV (%): | 5.0% | SG Temperature (F): | 60 |
| IBU to Gravity Ratio: | 0.66 | Corrected SG: | 1.040 |

| Diacetyl Rest | | Carbonation | |
|---------------------------------------|--------|---------------------------|------|
| Target Fermentation Completion: | | CO2 Volume: | 2.45 |
| Target SG for Diacetyl Rest: | | Bottling Temperature (F): | |
| | | Priming Sugar (oz): | |
| | | DME (oz): | |
| Fermentation | | Forced Carbonation (lbs): | |
| CO2 Released During Fermentation (g): | 785.21 | | |

| Notes | |
|--|--|
| No starter made since this brew was done spontaneously; pitched single vial. | |
| A little low on mashout; for some reason it didn't drain all the way... | |
| 6/3: added dry hops to primary | |
| 6/12: oh my! I think this beer will kick ass! | |

| User Variables | |
|----------------------------------|-------|
| 12 oz. Bottles Required: | 51 |
| Primary Fermentation Temp. (F): | 66 |
| Secondary Fermentation Temp (F): | 72 |
| FNWV IBU Factor (%): | 10% |
| Strike Temperature Factor (F): | 8 |
| Sparge Temperature Factor (F): | 5 |
| Mash Time (min): | 60 |
| Specific Gravity (Brix): | 13.6 |
| Specific Gravity (SG): | 1.053 |

| Yeast: | |
|--|--|
| White Labs WLP001 (California Ale) | |
| Mash/Sparge Schedule: | |
| Single Infusion, 152F; Batch Sparge | |
| Mash for 60 min at 152F w/ 4.14 gal of water at 173F | |
| Mashout w/ 2.16 gal of water at 210F; hold for 10 min | |
| Batch sparge w/ 4.93 gal of water at 183F; hold for 10 min | |
| Fermentation Schedule: | |
| Primary Fermentation: 28 days @66F | |
| Secondary Fermentation: 0 days @72F | |