

BREWSHEET v3.3 (2012-03-18)

user input
 calculated

| Brew | | | |
|--------------------|------------------------|-----------------------|-------|
| Name: | Hakuna Matata Pale Ale | | |
| Brew Date: | 2012 May 5 | Collected (gal): | 11.00 |
| Rack Date: | | Racked (gal): | |
| Keg/Bottle Date: | 2012 June 1 | Kegged/Bottled (gal): | 10.00 |
| Estimated | | Actual | |
| ABV (%): | 5.8% | ABV (%): | 6.0% |
| OG (SG): | 1.055 | OG (SG): | 1.056 |
| FG (SG): | 1.013 | FG (SG): | 1.010 |
| IBU: | 34 | IBU: | 34.8 |
| SRM: | 3.3 | SRM: | 3.6 |
| IBU/Gravity Ratio: | 0.62 | IBU/Gravity Ratio: | 0.62 |

| Grain | Pounds | Potential | SG Share | Color | % Bill |
|----------------------------|--------|-----------|----------|-------|--------|
| Northwestern Pale Ale malt | 21.25 | 1.036 | 0.049 | 2.8 | 84.16% |
| British carastan | 3.00 | 1.035 | 0.007 | 34.0 | 11.88% |
| Rice hulls | 1.00 | 1.000 | 0.000 | 0.0 | 3.96% |

| Hop | Type | Ounces | Boil Time | Alpha % | IBU | % Bill |
|-------------|------|--------|-----------|---------|------|--------|
| Magnum (GR) | P | 0.75 | 60 | 12.5% | 14.1 | 7.14% |
| Perle (GR) | P | 0.75 | 60 | 6.7% | 7.5 | 7.14% |
| Cascade | L | 3.00 | 10 | 8.8% | 12.5 | 28.57% |
| Cascade | L | 4.00 | 0 | 8.8% | 0.0 | 38.10% |
| Cascade | P | 2.00 | dry | 5.5% | 0.0 | 19.05% |

| Design Notes | |
|--|--|
| Use yeast harvested from Soul Stripper IPA. | |
| Mash a little lower and longer to try to dry this thing out a bit more than usual. | |
| Dry hops was originally 4 oz. | |

| Batch Variables and Calculations | |
|----------------------------------|-------|
| Batch Size (gal): | 11.00 |
| Grain Temperature (F): | 78 |
| Total Grain Weight (lbs): | 25.25 |
| Mash | |
| Mash Time (min): | 75 |
| Desired Mash Temperature (F): | 150 |
| Strike Water (gal): | 10.17 |
| Strike Temperature (F): | 164 |
| Mash Ratio (qts/lb): | 1.51 |
| Grain Absorption (gal): | 3.16 |
| Mash Volume (gal): | 12.19 |
| Mash-out Temperature (F): | 168 |
| Estimated First Runnings (gal): | 6.87 |
| First Runnings (gal): | 6.80 |
| First Runnings Gravity (Brix): | 16.80 |
| First Runnings Gravity (SG): | 1.065 |

| Sparge | |
|-----------------------------------|-------|
| Desired Sparge Temperature (F): | 170 |
| Sparge Water (gal): | 6.40 |
| Sparge Water Temperature (F): | 174 |
| Estimated Second Runnings (gal): | 6.87 |
| Second Runnings (gal): | 6.94 |
| Second Runnings Gravity (Brix): | 7.40 |
| Second Runnings Gravity (SG): | 1.029 |
| Estimated Preboil Volume (gal): | 13.74 |
| Estimated Preboil Gravity (Brix): | 12.05 |
| Preboil Volume (gal): | 13.74 |
| Preboil Gravity (Brix): | 13.00 |
| Preboil Gravity (SG): | 1.050 |
| Extraction Efficiency (%): | 80% |

| Boil | |
|-----------------------------------|-------|
| Boil Time (min): | 60 |
| Estimated Evaporation Loss (gal): | 1.31 |
| Hop Absorption (gal): | 0.39 |
| Volume Left in Kettle (gal): | -0.30 |
| Actual Evaporation Rate (gal/hr): | 1.61 |
| Actual Evaporation Loss (gal): | 1.61 |
| Original Gravity (Brix): | 14.43 |
| Batch Size Efficiency (%): | 71% |
| Actual Efficiency (%): | 69% |

| Fermentation | |
|--|-------|
| Primary Fermentation (days): | 14 |
| Primary Fermentation Temperature (F): | 66 |
| Gravity After Primary Fermentation (SG): | |
| Temperature of Reading (F): | |
| Corrected SG: | |
| Secondary Fermentation (days): | 7 |
| Secondary Fermentation Temperature (F): | 66 |
| Gravity After Secondary Fermentation (SG): | |
| Temperature of Reading (F): | |
| Corrected SG: | |
| Tertiary Fermentation (days): | 3 |
| Tertiary Fermentation Temperature (F): | 35 |
| Final Gravity (SG): | 1.011 |
| Temperature of Reading (F): | 57 |
| Corrected SG: | 1.010 |
| Target Fermentation for Diacetyl Rest (%): | |
| Target Gravity for Diacetyl Rest (SG): | |
| Calories per Pint: | 184 |
| 12 oz. Bottles Required: | 102 |

| Carbonation | |
|------------------------------|------|
| Bottling Temperature (F): | |
| Volumes of CO ₂ : | 2.45 |
| Priming Sugar (oz): | |
| DME (oz): | |
| Forced Carbonation (lbs): | |

| System Variables | |
|---------------------------------------|--------|
| Brewhouse Efficiency (%): | 70% |
| Volume in Hoses (gal): | 0.22 |
| Volume in Wort Chiller (gal): | 0.19 |
| Volume in HERMS Coil (gal): | 0.25 |
| Mash/Lauter Tun Deadspace (gal): | 0.14 |
| Strike to Sparge Volume Ratio (%): | 50% |
| Trub Loss (gal): | 0.16 |
| FWH IBU Factor (%): | 10% |
| Strike Temperature Factor (F): | 5 |
| Sparge Temperature Factor (F): | 3 |
| Estimated Evaporation Rate (gal/hr): | 1.31 |
| Leaf Hop Absorption Ratio (qts/oz): | 0.20 |
| Pellet Hop Absorption Ratio (qts/oz): | 0.10 |
| Cooling Losses (%): | 4% |
| Hydrometer Correction (SG): | -0.001 |

| 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% |
| CO ₂ : | 2.2-2.7 |

| Yeast Strain | |
|-------------------------|----------------------------------|
| Yeast Strain: | Fermentis Safale US-05 (Dry Ale) |
| Type: | Dry Ale |
| Attenuation (%): | 75-79% |
| Actual Attenuation (%): | 82% |
| Fermentation Temp (F): | 59-75F |
| Flocculation: | low-medium |

| Required Amounts | |
|--|------|
| Call Count (billions): | 424 |
| Vials (White Labs/Wyeast): | |
| Dry Yeast (g): | 21.3 |
| Yeast Starter/Slurry | |
| Vials (White Labs/Wyeast): | |
| Date Yeast Produced: | |
| Yeast Viability (%): | |
| Yeast Growth Rate: | |
| Yeast Inoculation Rate (million/ml): | |
| Starter Volume Required (ml): | |
| DME Required (oz): | |
| Yeast slurry concentration (billion/ml): | 2.5 |
| Non-yeast Percentage (%): | 20% |
| Yeast Slurry Required (ml): | |

| User Variables | |
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| Batch Scaling | | | | | |
|----------------------------|-------|---------------------|------------------|--------------|---------------|
| Desired OG: | 1.055 | Total Weight (lbs): | 24.09 | | |
| Batch Size (gal): | 11.00 | Total Bill: | 100.00% | | |
| Brewhouse Efficiency (%): | 70% | | | | |
| Grain | | Pounds | Potential | Color | % Bill |
| Northwestern Pale Ale malt | 21.20 | 1.036 | 2.8 | 88.00% | |
| British carastan | 2.89 | 1.035 | 34.0 | 12.00% | |

| Poundage | |
|-------------------------|-----------|
| Goal (lbs): | 21.25 |
| Amount (lbs oz f_oz): | 2 3.20 |
| Amount (lbs oz f_oz): | 2 13.91 |
| Amount (lbs oz f_oz): | 2 13.87 |
| Amount (lbs oz f_oz): | 2 10.79 |
| Amount (lbs oz f_oz): | 3 0.32 |
| Amount (lbs oz f_oz): | 3 0.29 |
| Amount (lbs oz f_oz): | 3 0.08 |
| Amount (lbs oz f_oz): | 1 9.54 |
| Amount (lbs oz f_oz): | |
| Amount (lbs oz f_oz): | |
| Amount (lbs oz f_oz): | |
| Needed (lbs oz f_oz): | 0 0.00 |

| Hydrometer Correction | |
|-----------------------|-------|
| SG: | 1.011 |
| Temperature (F): | 73 |
| Corrected SG: | 1.012 |

| Gravity Calculator | |
|--------------------|--|
| Brix: | |
| Specific Gravity: | |
| Degrees Plato: | |

| Brix Ethanol Correction | |
|-------------------------|--|
| Original Brix: | |
| Current Brix: | |
| SG: | |

| Brewing Notes | |
|--|--|
| Decided not to use yeast from Soul Stripper (lactic?) | |
| Went with Danstar Windsor for half and Safale US-05 for half. | |
| 5/11: Windsor is at 1.019 SG (4.8% ABV); Safale is at 1.013 SG (5.7% ABV). | |
| No krausen on either; slight foam on safale. | |
| 5/18: Windsor is at 1.019 SG (4.9% ABV, 67% attenuation); Safale is at 1.012 SG (5.8% ABV, 79% attenuati | |
| Dry hop in a few days; also agitate the Windsor batch a bit. | |
| 5/21: dry hopped; dropped dry hops from 2 oz per 5 gal to 1 oz per 5 gal. | |
| Windsor is at 1.014 SG (5.5% ABV, 76% attenuation); Safale is at 1.011 SG (5.9% ABV, 81% attenuation). | |
| B1: kegged. | |
| Safale is at 1.010 SG (6% ABV, 82% attenuation) and tastes great! | |
| Windsor is at 1.010 SG (1) (6% ABV, 82% attenuation) and is good... | |
| ...but perhaps has some slight banana business? | |
| Did not add gelatin. | |