BREWSHEET v3.3 (2012-03-18)

| user input |
|------------|
| calculated |

| Brew | | | | | |
|-------------------------------|------------------|----------------------------------|-------|--|--|
| Name: The Big Bamboo Pale Ale | | | | | |
| Brew Date: | 2013 January 21 | 2013 January 21 Collected (gal): | | | |
| Rack Date: | | Racked (gal): | | | |
| Keg/Bottle Date: | 2013 February 11 | Kegged/Bottled (gal): | 9.90 | | |
| Estimated | | Actual | | | |
| ABV (%): | 5.0% | ABV (%): | 5.4% | | |
| OG (SG): | 1.051 | OG (SG): | 1.053 | | |
| FG (SG): | 1.013 | FG (SG): | 1.012 | | |
| IBU: | 36.2 | IBU: | 35.9 | | |
| SRM: | 9.9 | SRM: | 10.0 | | |
| IBU/Gravity Ratio: | 0.71 | IBU/Gravity Ratio: | 0.67 | | |

| Pounds | Potential | SG Share | Color | % Bill |
|--------|---------------|---------------------------|---------------------------------------|--|
| 15.50 | 1.036 | 0.036 | 2.8 | 68.89% |
| 4.50 | 1.035 | 0.010 | 10.0 | 20.00% |
| 2.50 | 1.035 | 0.006 | 34.0 | 11.11% |
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| | | | | |
| | 15.50 4.50 | 15.50 1.036 4.50 1.035 | 15.50 1.036 0.036 4.50 1.035 0.010 | 15.50 1.036 0.036 2.8 4.50 1.035 0.010 10.0 |

| Hop | Type | Ounces | Boil Time | Alpha % | IBU | % Bill |
|--------------------|------|--------|-----------|---------|------|--------|
| Warrior | P | 0.28 | 60 | 15.8% | 6.9 | 3.32% |
| Magnum (GR) | P | 0.65 | 60 | 12.5% | 12.7 | 7.71% |
| Nelson Sauvin (NZ) | P | 0.50 | 15 | 11.2% | 4.3 | 5.93% |
| Summit | P | 1.00 | | 15.9% | 12.3 | 11.86% |
| Nelson Sauvin (NZ) | P | 1.00 | 0 | 11.2% | 0.0 | 11.86% |
| Summit | P | 2.00 | 0 | 15.9% | 0.0 | 23.72% |
| Nelson Sauvin (NZ) | P | 1.00 | dry | 11.2% | 0.0 | 11.86% |
| Summit | P | 2.00 | dry | 15.9% | 0.0 | 23.72% |
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| Design Notes | | | | |
|------------------|--------------------|-----------------|-------|--|
| dd 15 min hops a | t 5 and 0 min hops | at end of whirl | pool. | |
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| Batch Size (gal): | 11.00 |
|---|--------------|
| Grain Temperature (F): | 61 |
| Total Grain Weight (lbs): | 22.50 |
| Mash | - 00 |
| Mash Time (min): | 60 |
| Desired Mash Temperature (F): | 150 9.72 |
| Strike Water (gal): | 167 |
| Strike Temperature (F): Mash Ratio (qts/lb): | 1.73 |
| Mash Ratio (qts/ib): Grain Absorption (gal): | 2.81 |
| Mash Volume (gal): | 11.52 |
| Mash-out Temperature (F): | 168 |
| Estimated First Runnings (gal): | 6.77 |
| First Runnings (gal): | 6.72 |
| First Runnings Gravity (Brix): | 16.70 |
| First Runnings Gravity (SG): | 1.065 |
| Sparge | 1 |
| Desired Sparge Temperature (F): | 168 |
| Sparge Water (gal): | 6.29 |
| Sparge Water Temperature (F): | 172 |
| Estimated Second Runnings (gal): | 6.76 |
| Second Runnings (gal): | 6.48 |
| Second Runnings Gravity (Brix): | 7.40 |
| Second Runnings Gravity (SG): | 1.029 |
| Estimated Preboil Volume (gal): | 13.53 |
| Estimated Preboil Gravity (Brix): | 12.13 |
| Preboil Volume (gal): | 13.20 |
| Preboil Gravity (Brix): | 12.80 |
| Preboil Gravity (SG): | 1.050 |
| Extraction Efficiency (%): | 82% |
| Boil | |
| Boil Time (min): | 60 |
| Estimated Evaporation Loss (gal): | 1.35 |
| Hop Absorption (gal): | 0.14 |
| Volume Left in Kettle (gal): | 0.00 |
| Actual Evaporation Rate (gal/hr): | 1.18 |
| Actual Evaporation Loss (gal): | 1.18 |
| Original Gravity (Brix): Batch Size Efficiency (%): | 13.77 73% |
| Actual Efficiency (%): | 72% |
| Fermentation | 12/0 |
| Primary Fermentation (days): | 14 |
| Primary Fermentation Temperature (F): | 66 |
| Gravity After Primary Fermentation (SG): | |
| Temperature of Reading (F): | |
| Corrected SG: | |
| Secondary Fermentation (days): | 6 |
| Secondary Fermentation Temperature (F): | 70 |
| Gravity After Secondary Fermentation (SG): | 1.022 |
| Temperature of Reading (F): | 67 |
| Corrected SG: | 1.022 |
| Tertiary Fermentation (days): | 3 |
| Tertiary Fermentation Temperature (F): | 32 |
| Final Gravity (SG): | 1.014 |
| Temperature of Reading (F): | 38 |
| Corrected SG: | 1.012 |
| Target Fermentation for Diacetyl Rest (%): | |
| Target Gravity for Diacetyl Rest (SG): | 1 . |
| Calories per Pint: | 177 |
| 12 oz. Bottles Required: | 101 |
| Carbonation | |
| Bottling Temperature (F): | 2.45 |
| Volumes of CO2: | 2.45 |
| | 1 |
| Priming Sugar (oz): | |
| Priming Sugar (62): DME (62): 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): | 7 |
| Sparge Temperature Factor (F): | 4 |
| Estimated Evaporation Rate (gal/hr): | 1.35 |
| 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% | | |
| CO2: | 2.2-2.7 | | |

Yeast Strain

Danstar American West Coast (Dry Ale)

Yeast Strain:

| Type: | Dry Ale | | |
|----------------------------|---------------|---------|------|
| Attenuation (%): | 70-78% | | |
| Actual Attenuation (%): | 77% | | |
| Fermentation Temp (F): | 60-70F | | |
| Flocculation: | high | | |
| F | Required An | nounts | |
| Cell Count (billions): | | | 393 |
| Vials (White Labs/Wyeast) |): | | |
| Dry Yeast (g): | | | 19.7 |
| Y | east Starter | /Slurry | |
| Vials (White Labs/Wyeast) |): | | |
| Date Yeast Produced: | | | |
| Yeast Viability (%): | | | |
| Yeast Growth Rate: | | | |
| Yeast Innoculation Rate (r | nillion/ml): | | |
| Starter Volume Required (| (ml); | | |
| DME Required (oz): | | | |
| Yeast slurry concentration | (billion/ml): | | 2.5 |
| Non-yeast Percentage (% |): | | 20% |
| Yeast Slurry Required (ml |): | | |

| reast Sturry Required (IIII). | |
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| User Variable | ıs |
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| Batch S | caling | | | |
|----------------------------|--------|------------------------|-------|---------|
| Desired OG: | 1.051 | Total Weight (lbs): 11 | | |
| Batch Size (gal): | 5.50 | Total Bill: | | 100.00% |
| Brewhouse Efficiency (%): | 70% | | | |
| Grain | Pounds | Potential | Color | % Bill |
| Northwestern Pale Ale malt | 7.86 | 1.036 | 2.8 | 70.00% |
| Munich Malt 10L | 2.24 | 1.035 | 10.0 | 20.00% |
| British carastan | 1.12 | 1.035 | 34.0 | 10.00% |
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| Poundage | | | |
|-------------------------|-------|------|--|
| Goal (lbs): | 15.50 | | |
| Amount (lbs oz.f_oz): | 2 | 2.96 | |
| Amount (lbs oz.f_oz): | 2 | 4.67 | |
| Amount (lbs oz.f_oz): | 2 | 4.83 | |
| Amount (lbs oz.f_oz): | 2 | 6.81 | |
| Amount (lbs oz.f_oz): | 2 | 4.79 | |
| Amount (lbs oz.f_oz): | 2 | 6.62 | |
| Amount (lbs oz.f_oz): | 1 | 9.32 | |
| Amount (lbs oz.f_oz): | | | |
| Amount (lbs oz.f_oz): | | | |
| 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: | 1.014 | | |
| Temperature (F): | 68 | | |
| Corrected SG: | 1.013 | | |
| | | | |
| Grav | ity Calculator | | |
| | ity Calculator | 13.77 | |
| Grav Brix: Specific Gravity: Degrees Plato: | | 13.77 | |

| Brix Ethanol Correction | | |
|-------------------------|--|--|
| Original Brix: | | |
| Current Brix: | | |
| co. | | |

1/21: mash was extended to ~1h45m due to problems with previous batch (Overdose IPA).

Mash temps started at ~151F and went down to ~147F while Overdose IPA was in whirtpool. Decided to ferment half with Windsor and half with Danstar West Coast.
2/3: Windsor sample at 1.022 SG (4.1% ABV, 59% attenuation); other sample at 1.013 SG (5.2% ABV, 75% attenuation).
Windsor sample is a bit more malty and has slight residual sweetness with slightly less hop flavor and without sample is a unit note many and has signit resoluted sweetness with signity less hop have an aroma. Both samples smell delicious! Nice pronounced citrus aroma of grapefruit with similar pronounced flavor. This was a try at something like Drifter Pale Ale, and so far it's quite similar.

Dry hopped (mistake with Windsor: added an extra 0.5 oz Nelson Sauvin by accident).

Dry hopped (mistake with Windsor: added an extra 0.5 oz Nelson Sauvin by accident). Also dry hopped 3 days early by accident; so may be on hops for 9 days instead of 6. 2/8: dry hopped one batch (West Coast). 2/11: kegged WC batch. Aroma of grapefruit and slight mait; flavor is all grapefruit that fades into a light bitterness. This is exactly what I was looking for! 2/16: kegged Windsor batch; 1.013 FG (5.3% ABV, 76% attenuation). Aroma is less pronounced than other batch. Flavor also less pronounced than other batch.

Brewing Notes

[2/27: quite a bit of grapefruit and passion fruit in both flavor and aroma; tangerine too. Dry.