

BREWSHEET v2.0 (2010-06-17)

Batch			
Brew Name:	Low Voltage Barleywine		
Bottle Top Code:	LV	Calories per Pint:	321
Estimated OG:	1.105	Actual OG:	1.097
Estimated FG:	1.025	Actual FG:	1.020
Estimated IBU:	110	Actual IBU:	128
Estimated SRM:	18	Actual SRM:	20
Brew Date:	12/04/10	Collected (gal):	5.00
Rack Date:	12/14/10	Racked (gal):	4.00
Bottle Date:	06/02/11	Bottled (gal):	3.35

BJCP Style Guidelines	
Style:	American Barleywine
Code:	19C
OG:	1.080-1.120
FG:	1.016-1.030
IBU:	50.0-120.0
SRM:	10.0-19.0
ABV:	8.0-12.0+%
CO2:	1.3-2.3

Inventory	
Bottles:	29
Gallons:	2.72
Date Checked:	08/17/11

Efficiency	
Brewhouse:	57%
Batch Size:	52%
Into Boiler:	63%
Into Fermenter:	48%

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

Summary	
Low Voltage Barleywine	
Batch Size: 6.00 gal (9.25 gal preboil)	
Estimated OG: 1.105 SG (actual: 1.097 SG)	
Estimated FG: 1.025 SG (actual: 1.020 SG)	
Estimated IBUs: 110 (Tinseth; actual: 128)	
Estimated Color: 18 SRM (actual: 20 SRM)	
Brewhouse Efficiency: 57% (actual: 52%)	
Boil Time: 90 minutes	

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	20.00	1.036	0.068	2.0	62.50%
Munich Malt 10L	5.00	1.035	0.016	10.0	15.63%
Rye malt	5.00	1.030	0.014	3.5	15.63%
Caramel/Crystal 60L	1.50	1.034	0.005	60.0	4.69%
Caramel/Crystal 75L	0.50	1.034	0.002	75.0	1.56%

Brewing		
Batch Size (gal):	6.00	Estimated First Runnings (gal): 13.87
Total Grain Weight (lbs):	32.00	Desired Sparge Temperature (F): 170
Grain Temperature (F):	71	Sparge Water (gal): -4.62
Mash Ratio (qts/lb):	1.25	Sparge Water Temperature (F): 138
Mash/Lauter Deadspace (gal):	0.25	Estimated Preboil Volume (gal): 9.25
Total Water Needed (gal):	13.50	Boil Time (min): 90
Desired Mash Temperature (F):	147	Evaporation Rate (%): 18%
Strike Water (gal):	10.00	Estimated Evaporation Loss (gal): 2.50
Strike Temperature (F):	162	Trub Loss (gal): 0.75
Grain Absorption (gal):	4.00	Volume Left in Kettle (gal): 0.50
Mash-out Temperature (F):	142	Actual Evaporation Rate (%): 21%
Mash-out Water (gal):	8.12	Actual Evaporation Loss (gal): 2.95

Hop	Alpha %	Ounces	Boil Time	IBU	% Bill
Magnum (GR)	12.5%	2.00	90	47.1	15.38%
Columbus	14.5%	2.00	60	51.1	15.38%
Cascade	4.6%	2.00	15	8.0	15.38%
Centennial	9.1%	2.50	1	1.7	19.23%
Columbus	14.5%	1.50	1	1.7	11.54%
Cascade	4.6%	1.00	dry	0.0	7.69%
Centennial	9.1%	1.00	dry	0.0	7.69%
Columbus	14.5%	1.00	dry	0.0	7.69%

Gravity		Collections	
Potential OG:	1.186	First Runnings (gal):	7.70
OG:	1.097	SG of First Runnings:	1.084
OG Temperature (F):	60	SG Temperature (F):	60
Corrected OG:	1.097	Corrected SG:	1.084
SG at Racking:	1.020	Second Runnings (gal):	1.50
SG Temperature (F):	64	SG of Second Runnings:	1.036
Corrected SG:	1.021	SG Temperature (F):	60
FG:	1.019	Corrected SG:	1.036
FG Temperature (F):	64	Estimated Preboil SG:	1.076
Corrected FG:	1.020	Preboil Volume (gal):	9.20
Potential ABV (%):	13.7%	SG of Preboil Volume:	1.076
Actual ABV (%):	10.2%	SG Temperature (F):	60
IBU to Gravity Ratio:	1.32	Corrected SG:	1.076

Diacetyl Rest		Carbonation	
Target Fermentation Completion:	75%	CO2 Volume:	1.80
Target SG for Diacetyl Rest:	1.041	Bottling Temperature (F):	
		Priming Sugar (oz):	
		DME (oz):	
		Forced Carbonation (lbs):	

Notes	
Mashout was at 142F; we'll see how that turns out in the end...	
Collected 8.20 gal @ 1.084 SG + 9.5 gal @ 1.036 SG	
Mixed 7.7 gal @ 1.084 SG + 1.50 gal @ 1.036 SG = 9.2 gal @ 1.076 SG	
Should yield 6 gal @ 1.117 (oops, forgot preboil was 9.25 and not 8.5)	
Didn't use hop strainer and had trouble siphoning into fermenter.	
Used blowoff tube and fermentation was extreme within a few hours!	
12/07: swapped blowoff with airlock; 1.030 SG; very bitter/astringent; hope that subsides.	
A lot of yeast in sample; maybe that's why?	
12/14: 1.021 SG (10% ABV); sweetness on the front end that gives way to huge bitterness/astringency	
Decided to rack to glass carboy to let it finish fermenting and age.	
14/11: 1.019 SG (10.2% ABV); OMG! Tastes something like a bourbon!	
5/15/11: 1.019 SG and added dry hops	
6/2/11: similar to Hop Machine DIPA to an extent (aroma mainly).	
8/17/11: bottled	

Yeast Amounts	
Cell Count (billions):	419
Vials (White Labs/Wyeast):	3.6
Dry Yeast (g):	21
Starter Volume (mL):	
DME Required (oz):	
Vials Required (w/ Starter):	

ON BREW DAY	
Heat 10 gallons of strike water to 162F	
Add grain and mash at 147F for 60 minutes	
Mash-out with 8.12 gallons at 210F; mix and hold for 10 minutes	
Vorlauf and collect first runnings (approx. 13.87 gallons)	
Add 4.62 gallons at 138F to lautertun and sparge	
Vorlauf and collect second runnings (approx. 4.62 gallons)	
Boil for a total of 90 minutes with the following hop schedule:	
2 oz. Magnum (GR) @90 minute(s)	
2 oz. Columbus @60 minute(s)	
2 oz. Cascade @15 minute(s)	
2.5 oz. Centennial @1 minute(s)	
1.5 oz. Columbus @1 minute(s)	

Grains:	
20.00# Pale Malt (2-Row) US (62.50%)	
5.00# Munich Malt 10L (15.63%)	
5.00# Rye malt (15.63%)	
1.50# Caramel/Crystal 60L (4.69%)	
0.50# Caramel/Crystal 75L (1.56%)	

Hops:	
2.00 oz Magnum (GR) (12.5%) @90 min	
2.00 oz Columbus (14.5%) @60 min	
2.00 oz Cascade (4.6%) @15 min	
2.50 oz Centennial (9.1%) @1 min	
1.50 oz Columbus (14.5%) @1 min	
1.00 oz Cascade (4.6%) (dry hop)	
1.00 oz Centennial (9.1%) (dry hop)	
1.00 oz Columbus (14.5%) (dry hop)	

Extra Variables	
12 oz. Bottles Required:	34
Primary Fermentation Temp. (F):	65
Secondary Fermentation Temp (F):	72

Yeast:	
White Labs WLP001 (California Ale) (California Ale)	

Mash/Sparge Schedule:	
Single Infusion, 147F; Batch Sparge	
Mash for 60 min at 147F w/ 10.00 gal of water at 162F	
Mashout w/ 8.12 gal of water at 210F; hold for 10 min	
Batch sparge w/ -4.62 gal of water at 138F; hold for 10 min	

Fermentation Schedule:	
Primary Fermentation: 10 days @65F	
Secondary Fermentation: 170 days @72F	