

BREWSHEET v2.1 (2011-01-04)

1			
Brew Name:	Clorona v2		
Bottle Top Code:		Calories per Pint:	145
Estimated OG:	1.045	Actual OG:	1.044
Estimated FG:	1.010	Actual FG:	1.008
Estimated IBU:	22	Actual IBU:	19
Estimated SRM:		Actual SRM:	2
Brew Date:	01/29/11	Collected (gal):	6.25
Rack Date:	02/18/11	Racked (gal):	6.00
Bottle Date:	03/19/11	Bottled (gal):	5.00

BJCP Style Guidelines	
Style:	Classic American Pilsner
Code:	2C
OG:	1.044-1.060
FG:	1.010-1.015
IBU:	25.0-40.0
SRM:	3.0-6.0
ABV:	4.4-5.2%
CO2:	2.3-2.5

Inventory	
Bottles:	
Gallons:	
Date Checked:	

Efficiency	
Brewhouse:	73%
Batch Size:	71%
Into Boiler:	64%
Into Fermenter:	81%

Yeast Strain	
Yeast Strain:	White Labs WLP840 (American Lager)
Type:	American Lager
Attenuation (%):	75-80%
Actual Attenuation (%):	82%
Fermentation Temp (F):	50-55F
Flocculation:	medium

Yeast Amounts	
Cell Count (billions):	352
Vials (White Labs/Wyeast):	3.0
Dry Yeast (g):	18
Starter Volume (mL):	4000
DME Required (oz):	14.00
Vials Required (w/ Starter):	1.0

ON BREW DAY	
Heat 2.96 gallons of strike water to 169F	
Add grain and mash at 152F for 60 minutes	
Mash-out with 1.54 gallons at 210F, mix and hold for 10 minutes	
Vorlauf and collect first runnings (approx. 3.09 gallons)	
Add 6.03 gallons at 177F to lautertun and sparge	
Vorlauf and collect second runnings (approx. 6.03 gallons)	
Boil for a total of 95 minutes with the following hop schedule:	
1.25 oz Cluster @65 minute(s)	
1.25 oz Hallertauer (US) @2 minute(s)	

Summary	
Clorona v2	
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Batch Size: 5.50 gal (9.13 gal preboil)	
Estimated OG: 1.045 SG (actual: 1.044 SG)	
Estimated FG: 1.010 SG (actual: 1.008 SG)	
Estimated IBUs: 22 (Finseth; actual: 19)	
Estimated Color: 3 SRM (actual: 2 SRM)	
Brewhouse Efficiency: 73% (actual: 71%)	
Boil Time: 95 minutes	

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	6.00	1.036	0.029	2.0	64.86%
Carapils/Dextrine	0.50	1.033	0.002	2.0	5.41%
Corn sugar (dextrose)	2.75	1.040	0.015	0.0	29.73%

Brewing		
Batch Size (gal):	5.50	Estimated First Runnings (gal): 3.09
Total Grain Weight (lbs):	9.25	Desired Sparge Temperature (F): 170
Grain Temperature (F):	69	Sparge Water (gal): 6.03
Mash Ratio (qts/lb):	1.28	Sparge Water Temperature (F): 177
Mash/Lauter Deadspace (gal):	0.25	Estimated Preboil Volume (gal): 9.13
Total Water Needed (gal):	10.54	Boil Time (min): 95
Desired Mash Temperature (F):	152	Evaporation Rate (gal/hr): 1.82
Strike Water (gal):	2.96	Estimated Evaporation Loss (gal): 2.88
Strike Temperature (F):	169	Trub Loss (gal): 0.75
Grain Absorption (gal):	1.16	Volume Left in Kettle (gal): 0.00
Mash-out Temperature (F):	152	Actual Evaporation Rate (gal/hr): 1.26
Mash-out Water (gal):	1.54	Actual Evaporation Loss (gal): 2.00

Hop	Alpha %	Ounces	Boil Time	IBU	% Bill
Cluster	5.0%	1.25	65	20.8	50.00%
Hallertauer (US)	3.0%	1.25	2	1.0	50.00%

Gravity		Collections	
Potential OG:	1.062	First Runnings (gal):	4.15
OG:	1.044	SG of First Runnings:	1.043
OG Temperature (F):	60	SG Temperature (F):	60
Corrected OG:	1.044	Corrected SG:	1.043
SG at Racking:	1.008	Second Runnings (gal):	4.85
SG Temperature (F):	66	SG of Second Runnings:	1.009
Corrected SG:	1.009	SG Temperature (F):	60
FG:	1.008	Corrected SG:	1.009
FG Temperature (F):	54	Estimated Preboil SG:	1.025
Corrected FG:	1.008	Preboil Volume (gal):	9.00
Potential ABV (%):	6.0%	SG of Preboil Volume:	1.024
Actual ABV (%):	4.8%	SG Temperature (F):	60
IBU to Gravity Ratio:	0.44	Corrected SG:	1.024

Diacetyl Rest		Carbonation	
Target Fermentation Completion:		CO2 Volume:	2.40
Target SG for Diacetyl Rest:		Bottling Temperature (F):	
		Priming Sugar (oz):	
		DME (oz):	
		Forced Carbonation (lbs):	

Notes	
CO2 Released During Fermentation (g):	851.65

Added corn sugar at beginning of boil.  
 After addition, preboil SG was 1.036.  
 Collected 5.5 gal in bucket and 0.75 gal in growler.  
 Plan to bottle whatever doesn't fit in the keg.  
 Had a boil over with about 30 min left in the boil (?)  
 So used hose to clean up which probably added 0.25 to 0.5 gal in the kettle.  
 Harvested yeast from primary.  
 2/12: Increased temp to 62F for diacetyl rest.  
 2/18: great flavor and aroma; very "lagerish!". P

User Variables	
12 oz Bottles Required:	51
Primary Fermentation Temp. (F):	52
Secondary Fermentation Temp (F):	32
FNH IBU Factor (%):	10%
Strike Temperature Factor (F):	4
Sparge Temperature Factor (F):	2
Specific Gravity (P):	10.8
Specific Gravity (SG):	1.044

**Grains:**  
 6.00# Pale Malt (2-Row) US (2.0L) (64.86%)  
 0.50# Carapils/Dextrine (2.0L) (5.41%)  
 2.75# Corn sugar (dextrose) (0.0L) (29.73%)

**Hops:**  
 1.25 oz Cluster (5.0%) @65 min  
 1.25 oz Hallertauer (US) (3.0%) @2 min

**Yeast:**  
 White Labs WLP840 (American Lager)

**Mash/Sparge Schedule:**  
 Single Infusion, 152F; Batch Sparge  
 Mash for 60 min at 152F w/ 2.96 gal of water at 169F  
 Mashout w/ 1.54 gal of water at 210F; hold for 10 min  
 Batch sparge w/ 6.03 gal of water at 177F; hold for 10 min

**Fermentation Schedule:**  
 Primary Fermentation: 20 days @52F  
 Secondary Fermentation: 29 days @32F