BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew			
Name:	Pizzaiolo		
Brew Date:	2019 September 7	Collected (gal):	5.30
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2019 September 30	Kegged/Bottled (gal):	5.00
Estimated		**Actual**	
ABV (%):	5.3%	ABV (%):	5.6%
OG (SG):	1.050	OG (SG):	1.051
FG (SG):	1.010	FG (SG):	1.008
IBU:	27.0	IBU:	27.8
SRM:	8.9	SRM:	9.1
IBU/Gravity Ratio:	0.54	IBU/Gravity Ratio:	0.54

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	9.50	1.036	0.044	2.0	86.36%
Munich Malt 10L	1.00	1.035	0.004	10.0	9.09%
Caramel/Crystal 90L	0.50	1.034	0.002	90.0	4.55%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Magnum (GR)	P	0.75	45	12.5%	27.0	100.00%

Design Notes

Mash with a few slices of Margherita pizza sitting on top of the mash.
@30min: 1 12" basil plant, 1 8" oregano plant
@10min: 1 12" basil plant, 1 8" oregano plant
@whirlpool: 1 12" basil plant, 1 8" oregano plant, 3 29-oz cans crushed tomatoes, 5 cloves garlic (crushed)

Using RO water; so at dough-in, add:
2.25 ml lactic acid (88%)
2.2 g CaSO4 (calcium sulfate/gypsum)
3.15 g CaCl2 (calcium chloride)
1.0 g MgSO4 (magnesium sulfate/epsom salt)
0.5 g Ca(OH)2 (calcium hydroxide/slaked lime)
1.85 g NaHCO3 (baking soda)
At boil, add:
1.4 g CaSO4 (calcium sulfate/gypsum)
2.0 g CaCl2 (calcium chloride)
0.6 g MgSO4 (magnesium sulfate/epsom salt)
0.3 g Ca(OH)2 (calcium hydroxide/slaked lime)
1.2 g NaHCO3 (baking soda)
Target is 5.5 mash pH, 80 ppm calcium, 5 ppm magnesium, 25 ppm sodium, 75 ppm Chloride, 80 ppm sulfate

Batch Variables and Calculations	
Batch Size (gal):	5.50
Grain Temperature (F):	84
Total Grain Weight (lbs):	11.00
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	152
Strike Water (gal):	5.35
Strike Temperature (F):	166
Mash Ratio (qts/lb):	1.95
Grain Absorption (gal):	1.38
Mash Volume (gal):	6.23
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	3.83
First Runnings (gal):	3.90
First Runnings Gravity (Brix):	14.20
First Runnings Gravity (SG):	1.055
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	3.36
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	3.83
Second Runnings (gal):	3.89
Second Runnings Gravity (Brix):	7.00
Second Runnings Gravity (SG):	1.027
Estimated Preboil Volume (gal):	7.67
Estimated Preboil Gravity (Brix):	10.60
Preboil Volume (gal):	7.79
Preboil Gravity (Brix):	10.20
Preboil Gravity (SG):	1.040
Extraction Efficiency (%):	78%
Boil	
Boil Time (min):	60
Estimated Evaporation Loss (gal):	1.34
Hop Absorption (gal):	0.02
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.67
Actual Evaporation Loss (gal):	1.67
Original Gravity (Brix):	13.20
Batch Size Efficiency (%):	71%
Actual Efficiency (%):	69%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	62
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	3
Secondary Fermentation Temperature (F):	32
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	
Tertiary Fermentation Temperature (F):	
Final Gravity (SG):	1.008
Temperature of Reading (F):	46
Corrected SG:	1.008
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	167
12 oz. Bottles Required:	51
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	2.35
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):	7
Sparge Temperature Factor (F):	4
Estimated Evaporation Rate (gal/hr):	1.34
Leaf Hop Absorption Ratio (qts/oz):	0.40
Pellet Hop Absorption Ratio (qts/ oz):	0.10
Cooling Losses (%):	4%
Hydrometer Correction (SG):	0.001

BJCP Style Guidelines	
Style:	Specialty Beer
Code:	23A
OG:	0
FG:	0
IBU:	0
SRM:	0
ABV:	0
CO2:	2.2-2.5

Yeast Strain	
Yeast Strain:	Danstar Nottingham (Dry Ale)
Type:	Dry Ale
Attenuation (%):	75-85%
Actual Attenuation (%):	84%
Fermentation Temp (F):	57-70F
Flocculation:	high
Required Amounts	
Cell Count (billions):	193
Vials (White Labs/Wyeast):	
Dry Yeast (g):	9.7
Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	
Date Yeast Produced:	
Yeast Viability (%):	
Yeast Growth Rate:	
Yeast Innoculation 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	

Batch Scaling				
Desired OG:	1.050	Total Weight (lbs):	10.97	
Batch Size (gal):	5.50	Total Bill:	100.00%	
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Pale Malt (2-Row) US	9.33	1.036	2.0	85.00%
Munich Malt 10L	1.10	1.035	10.0	10.00%
Caramel/Crystal 90L	0.55	1.034	90.0	5.00%

Poundage		
Goal (lbs):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
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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):		

Hydrometer Correction		
SG:		
Temperature (F):		
Corrected SG:		

Gravity Calculator		
Brix:	12.90	
Specific Gravity:	1.050	
Degrees Plato:	12.35	

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

9/7: didn't mash with a pizza; decided to add basil and oregano to the boil as specified.
Hydrometer was broken, so used refractometer for OG reading.
Added extra basil at flameout (a second 12" plant); tomatoes were 5 Roma fresh from the garden and chopped; 4 cloves peeled and crushed garlic.
Aroma in the fermenter is clearly pizza (garlic, tomatoes, basil, and oregano) – along with typical "beer."
9/30: kegged; aroma is very slight "pizza" that comes out more with a deep breath and when the beer gets warmer; flavor is clean ale with some "pizza" aspect; it will be interesting to see when the beer is carbonated.