

Bringing the Brewery Home



2015 American Homebrewers Association Conference
San Diego, CA



2014 Great American Beer Festival Mid-Size Brewing Company of the Year

So it is Just me,



2014 Great American Beer Festival Mid-Size Brewing Company of the Year

“Intensity of flavor is not equal to quality of flavor.”

Jason Oliver

1. Why Are we doing this?

2. Vienna Lager NHC '14
Homebrew Recipe

3. My System

4. DB System

5. Vienna Lager Linear Recipe
2015

6. What is the Same

7. What is Different

8. Data

9. More Data

10. Questions?



Why this project?



Can we really “clone” beers at home?

How useful are recipes anyways?

Can individuals be anything but themselves?



BJCP 2015 Style Guidelines

Overall Impression: A moderate-strength amber lager with a soft, smooth maltiness and moderate bitterness, yet finishing relatively dry. The malt flavor is clean, bready-rich, and somewhat toasty, with an elegant impression derived from quality base malts and process, not specialty malts and adjuncts

Vital Statistics: OG: 1.048 – 1.055 IBUs: 18 – 30 FG: 1.010 – 1.014 SRM: 9 – 15 ABV: 4.7 – 5.5% Commercial Examples: Cuauhtémoc Noche Buena, Chuckanut Vienna Lager, [Devils Backbone Vienna Lager](#), Figueroa Mountain Danish-style Red Lager, Heavy Seas Cutlass Amber Lager, Schell's Firebrick



Vienna Lager

Gravity: 12.5 Degrees Plato

Alcohol by Volume: 4.9-5.1%

Hop Bitterness: 18 IBUs

Color: Chestnut

Malt: Pilsner, Vienna, Dark Munich, Cara-Amber

Hops: Northern Brewer, Saaz

2009 GABF Silver Medal: Vienna-Style Lager

2012 GABF Gold Medal: Vienna-Style Lager

2012 World Beer Cup Gold Medal: Vienna-Style Lager

2014 World Beer Cup Silver Medal: Vienna-Style Lager



My System

Single Infusion Mash System

2 – 10 gallon coolers with Bazooka Tubes and Ball valves

15 Gallon Hot Liquor Tank(Banjo Burner)

Direct Fire 30 Gallon Megapot 2.0

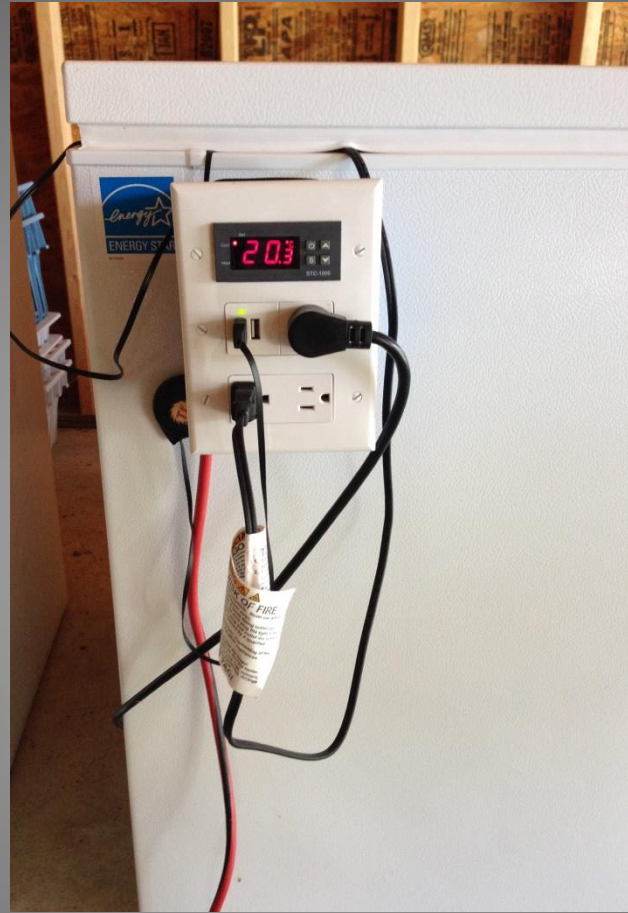
Edemental Bru Burner

Immersion Wort Chiller

8 Gallon Buckets for Primary, 6 Gallon Pet Secondary



Fermentation



Vienna Lager Homebrew Recipe

12.5 Plato SG

2.8 Plato FG

4.9-5.1% ABV

18-22 IBUs

Grist:

38% Pilsner Malt

38% Vienna Malt

12% Dark Munich Malt

12% Weyermann Cara-Amber Malt

Mash: 3.2:1 mash hydration (liquor to grist)

Mash-in 125F

Heat to 147F – Hold 30 minutes

Heat to 162F – Hold 30 minutes

Heat to 170F – Mash-out temp



Vienna Lager Homebrew Recipe

Boil: 90 minutes

16-19 IBU's from German Northern Brewer at boil begin

1-3 IBU's from Czech Saaz at 20 minutes before boil end

Cooling, Fermentation, and Maturation:

Cool between 51-53F

Pitch with Augustiner Lager yeast, minimum 1.25 million cells / ml / plato

Let rise to 54 – 54.5F for main fermentation

2/3 way through fermentation raise to 56F

At end of fermentation let rise to 57F for Diacetyl rest

7-10 days after pitching start cooling 2F a day until 42-44F

Rack off yeast & trub / dump and transfer to secondary

Crash cool to lagering temp 28-34F

Lager minimum 2 weeks, aim for four weeks or more.



Find [v] [down] [up] [right]

Full Screen [v] [Full Screen]

DB Vienna Lager

Vienna Lager

Type: All Grain	Date: 6/12/2014
Batch Size (fermenter): 20.00 gal	Brewer:
Boil Size: 22.39 gal	Asst Brewer:
Boil Time: 90 min	Equipment: Pot and Cooler (5 Gal/19 L) - All Grain
End of Boil Volume: 21.58 gal	Brewhouse Efficiency: 72.00 %
Final Bottling Volume: 19.60 gal	Est Mash Efficiency: 74.7 %
Fermentation: Lager, Three Stage	Taste Rating(out of 50): 30.0
Taste Notes:	

Ingredients

Ingredients				
Amt	Name	Type	#	%/IBU
14 lbs	<u>Pilsner (2 Row) Ger (2.0 SRM)</u>	Grain	1	37.8 %
14 lbs	<u>Vienna Malt (3.5 SRM)</u>	Grain	2	37.8 %
4 lbs 8.0 oz	<u>Caraamber (30.0 SRM)</u>	Grain	3	12.2 %
4 lbs 8.0 oz	<u>Munich Malt - 20L (20.0 SRM)</u>	Grain	4	12.2 %
2.25 oz	<u>Northern Brewer [8.50 %] - Boil 60.0 min</u>	Hop	5	18.3 <u>IBUs</u>
0.75 oz	<u>Saaz [4.00 %] - Boil 20.0 min</u>	Hop	6	1.7 <u>IBUs</u>

Beer Profile

Est Original Gravity: 1.048 SG	Measured Original Gravity: 1.046 SG
Est Final Gravity: 1.009 SG	Measured Final Gravity: 1.010 SG
Estimated Alcohol by Vol: 5.2 %	Actual Alcohol by Vol: 4.7 %
Bitterness: 20.1 <u>IBUs</u>	Calories: 151.6 <u>kcal/12oz</u>
Est Color: 9.4 SRM	



DB Brew System



2014 Great American Beer Festival Mid-Size Brewing Company of the Year

What is the Same?

All Ingredients:

Water, Grain, Hops, Yeast.....

Recipe

Goal



2014 Great American Beer Festival Mid-Size Brewing Company of the Year

What is Different?

Everything else!

Brew System

Brewer

Single Infusion Mash

Direct Fire Boil

Fermenters

Etc.....



DB Vienna Lager 2

Vienna Lager

Type: All Grain	Date: 6/12/2014
Batch Size (fermenter): 20.00 gal	Brewer:
Boil Size: 22.39 gal	Asst Brewer:
Boil Time: 90 min	Equipment: Pot and Cooler (5 Gal/19 L) - All Grain
End of Boil Volume: 21.58 gal	Brewhouse Efficiency: 72.00 %
Final Bottling Volume: 19.60 gal	Est Mash Efficiency: 74.7 %
Fermentation: Lager, Three Stage	Taste Rating(out of 50): 30.0
Taste Notes:	

Ingredients

Ingredients				
Amt	Name	Type	#	%/IBU
14 lbs 12.0 oz	Vienna Malt (3.5 SRM)	Grain	1	38.1 %
13 lbs 8.0 oz	Pilsner (2 Row) Ger (2.0 SRM)	Grain	2	34.8 %
6 lbs	Munich Malt - 20L (20.0 SRM)	Grain	3	15.5 %
4 lbs 8.0 oz	Caraamber (30.0 SRM)	Grain	4	11.6 %
1.75 oz	Northern Brewer [8.50 %] - Boil 60.0 min	Hop	5	14.0 IBUs
1.00 oz	Saaz [4.00 %] - Boil 20.0 min	Hop	6	2.3 IBUs

Beer Profile

Est Original Gravity: 1.050 SG	Measured Original Gravity: 1.046 SG
Est Final Gravity: 1.009 SG	Measured Final Gravity: 1.010 SG
Estimated Alcohol by Vol: 5.4 %	Actual Alcohol by Vol: 4.7 %
Bitterness: 16.3 IBUs	Calories: 151.6 kcal/12oz
Est Color: 10.0 SRM	



The Data

Beer Name	Original Extract	Apparent Extract	IBU	ABV	SRM	Real Extract	ABW	Calories kcal/12oz	RDF %	ADF (m/m) %
Vienna 1	12.3	2.56	25.5	5.19	17.2	4.43	4.06	162	65.4	79.2
Vienna 2	13	3.45	19.6	5.12	18.1	5.29	3.99	174	60.9	73.4
Vienna 3	12.4	2.55	14.9	5.28	14.5	4.45	4.13	164	65.8	79.5

http://braukaiser.com/wiki/index.php?title=Understanding_Attenuation



More Data!!

VNA 5/27				Sample 2 Average
APPEARANCE	AROMA	TASTE	MOUTHFEEL	
9	8	7	7	7.8
7	5	5	5	5.5
9	8	9	9	8.8
9	7	6	6	7.0
9	8	8	7	8.0
10	10	10	8	9.5
9	7	7	8	7.8

VNA Homebrew #1				Sample 4 Average
APPEARANCE	AROMA	TASTE	MOUTHFEEL	
8	6	1	1	4.0
1	1	1	1	1.0
9	8	6	6	7.3
8	4	4	4	5.0
6	7	5	5	5.8
7	7	7	8	7.3
5	6	5	6	5.5

VNA Homebrew #2				Sample 6 Average
APPEARANCE	AROMA	TASTE	MOUTHFEEL	
7	1	1	5	3.5
1	1	1	1	1.0
9	4	3	4	5.0
9	4	4	5	5.5
4	5	4	4	4.3
7	5	4	9	6.3
6	6	5	7	6.0

8.9 7.6 7.4 7.1 7.8
0.90 1.51 1.72 1.35 1.27

6.3 5.6 4.1 4.4 5.1
2.69 2.37 2.34 2.64 2.15

6.1 3.7 3.1 5.0 4.5
2.85 1.98 1.57 2.52 1.82



How'd They Taste?

Are we in the same ballpark?

Anywhere near a style guideline?



Questions? Thoughts? Theories?



2014 Great American Beer Festival Mid-Size Brewing Company of the Year

Thank you.



2014 Great American Beer Festival Mid-Size Brewing Company of the Year