

Hangtown Brew Noose



Volume 19, May 2007 - The Reference Issue

www.hazeclub.org

President's Message

May has arrived and with it some typically beautiful brewing weather. For those of you that missed the National Homebrew Day festivities, a good time was had by all and it looked like a lot of good beer was made as well. Thanks to David Brattstrom and his crew for running the BBS, and to Mike and Debbie of Morning Glory for hosting us. Also, thanks to everyone who brought all the good food to share (be it Mexican or German).

At this month's meeting we'll discuss kegging your liquid gold. Revamping used Cornelius kegs (and properly cleaning them between batches), as well as the equipment needed for carbonation and serving will all be covered. We'll have an equipment show and tell as well (kegging specific).

You may have seen the emails, you might have heard rumors, you may have even had dreams about it, but here's the official President's Message in the BrewNoose about it... Award of Brewing is officially open for business. Check the HAZE website (<http://www.hazeclub.org/AoB/AoB.html>) for more information on how the program works, and to obtain a registration form (<http://www.hazeclub.org/AoB/AoBRegistrationForm.pdf>) that should be submitted with every beer you submit for consideration.

Whether you plan to submit it for AoB or not, get out there and brew some beer while this great weather lasts. And of course, bring your homebrew to share and discuss at the meetings. Afterall, we are all there to learn more about this great hobby, and of course to taste some great beer. Happy brewing!

Dave

Editor's Note: This issue is called the reference issue because I've filled it with material of dubious value (I could just as easily have called it the Congressional Issue), but it's stuff that I have used from time to time. However, since this is the Reference Issue I probably should reference my sources. Unless otherwise indicated, the charts come from How to Brew by John Palmer (www.howtobrew.com)

H.A.Z.E. CLUB OFFICERS for 2007

President	Dave Pratt
Vice Pres.	Stan Backlund
Secretary	Beth Zangari
Treasurer	Glen Franke
Activities	Alfred E. Newman

**BRING RAFFLE FODDER
TO THE MEETING!!**

**H.A.Z.E. is dedicated to fostering social and educational
opportunities for homebrewers in the foothills.**



Hangtown Brew Noose

Alcohol Table

Percent Alcohol by Volume (ABV) From Original and Final Gravity

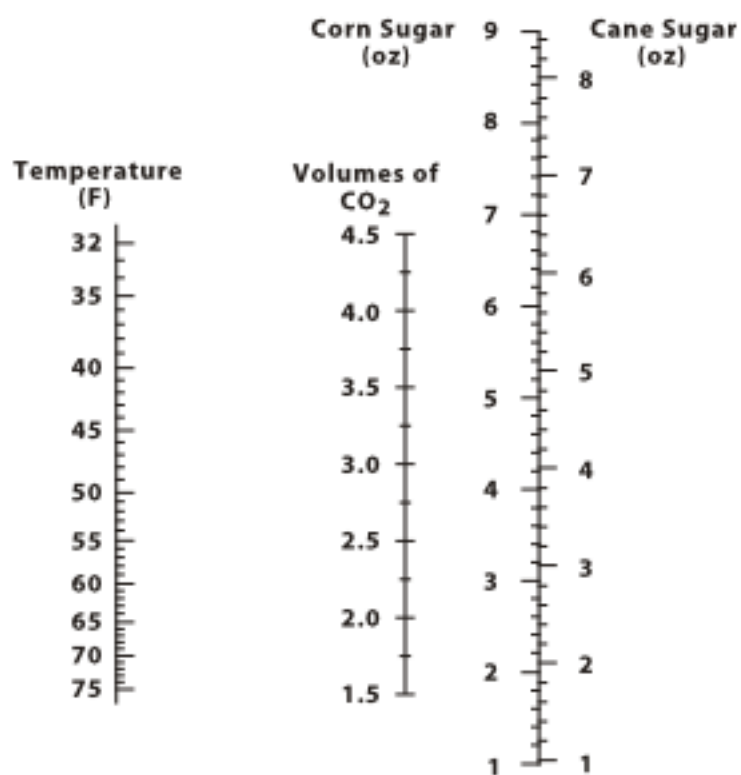
	1.030	1.035	1.040	1.045	1.050	1.055	1.060	1.065	1.070	1.075
0.998	4.1	4.8	5.4	6.1	6.8	7.4	8.1	8.7	9.4	10.1
1.000	3.9	4.5	5.2	5.8	6.5	7.1	7.8	8.5	9.1	9.8
1.002	3.6	4.2	4.9	5.6	6.2	6.9	7.5	8.2	8.9	9.5
1.004	3.3	4.0	4.6	5.3	5.9	6.6	7.3	7.9	8.6	9.3
1.006	3.1	3.7	4.4	5.0	5.7	6.3	7.0	7.7	8.3	9.0
1.008	2.8	3.5	4.1	4.8	5.4	6.1	6.7	7.4	8.0	8.7
1.010	2.6	3.2	3.8	4.5	5.1	5.8	6.5	7.1	7.8	8.4
1.012	2.3	2.9	3.6	4.2	4.9	5.5	6.2	6.8	7.5	8.2
1.014	2.0	2.7	3.3	4.0	4.6	5.3	5.9	6.6	7.2	7.9
1.016	1.8	2.4	3.1	3.7	4.4	5.0	5.7	6.3	7.0	7.6
1.018	1.5	2.2	2.8	3.4	4.1	4.7	5.4	6.0	6.7	7.3
1.020	1.3	1.9	2.5	3.2	3.8	4.5	5.1	5.8	6.4	7.1
1.022	1.0	1.6	2.3	2.9	3.6	4.2	4.9	5.5	6.2	6.8
1.024	0.8	1.4	2.0	2.7	3.3	4.0	4.6	5.2	5.9	6.5

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Priming Nomograph

Nomograph For Determining Amount Of Priming Sugar (by Wt.) For 5 US Gallons





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Beer Carbonation Table

Beer carbonation at various temperatures and pressures
Pounds per Square Inch

	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
30	2.23	2.36	2.48	2.60	2.70	2.82	2.93	3.02															
31	2.20	2.31	2.42	2.54	2.65	2.76	2.86	2.96															
32	2.15	2.27	2.38	2.48	2.59	2.70	2.80	2.90	3.00	3.11	3.21												
33	2.10	2.23	2.33	2.43	2.53	2.63	2.74	2.84	2.96	3.06	3.15	3.25											
34	2.06	2.18	2.28	2.38	2.48	2.58	2.69	2.79	2.90	3.00	3.09	3.19											
35	2.02	2.14	2.24	2.34	2.43	2.52	2.63	2.73	2.83	2.93	3.02	3.12	3.22										
36	1.98	2.09	2.19	2.29	2.38	2.47	2.57	2.67	2.77	2.86	2.96	3.05	3.15	3.24									
37	1.94	2.04	2.14	2.24	2.33	2.42	2.52	2.62	2.71	2.80	2.90	3.00	3.09	3.18	3.27								
38	1.90	2.00	2.10	2.20	2.29	2.38	2.48	2.57	2.66	2.75	2.85	2.94	3.03	3.12	3.21								
39	1.86	1.96	2.06	2.15	2.25	2.34	2.43	2.52	2.61	2.70	2.80	2.89	2.98	3.07	3.16	3.25							
40	1.83	1.92	2.01	2.10	2.20	2.30	2.39	2.47	2.56	2.65	2.75	2.84	2.93	3.01	3.10	3.19	3.28						
41	1.79	1.88	1.97	2.06	2.16	2.25	2.34	2.43	2.52	2.60	2.70	2.79	2.88	2.96	3.05	3.14	3.23						
42	1.75	1.85	1.94	2.02	2.12	2.21	2.30	2.39	2.48	2.56	2.65	2.74	2.83	2.91	3.00	3.09	3.18	3.26					
43	1.72	1.81	1.90	1.99	2.08	2.17	2.26	2.34	2.43	2.52	2.61	2.69	2.78	2.86	2.95	3.04	3.13	3.21					
44	1.69	1.78	1.87	1.95	2.04	2.13	2.22	2.30	2.39	2.47	2.56	2.64	2.73	2.81	2.90	2.99	3.07	3.16	3.24				
45	1.66	1.75	1.84	1.91	2.00	2.08	2.17	2.26	2.34	2.42	2.51	2.60	2.69	2.77	2.86	2.94	3.02	3.11	3.19				
46	1.62	1.71	1.80	1.88	1.96	2.04	2.13	2.22	2.30	2.38	2.47	2.55	2.64	2.72	2.81	2.89	2.98	3.06	3.15	3.23			
47	1.59	1.68	1.76	1.84	1.92	2.00	2.09	2.18	2.26	2.34	2.42	2.50	2.59	2.67	2.76	2.84	2.93	3.02	3.09	3.18			
48	1.56	1.65	1.73	1.81	1.89	1.96	2.05	2.14	2.22	2.30	2.38	2.46	2.54	2.62	2.71	2.79	2.88	2.96	3.04	3.13			
49	1.53	1.62	1.70	1.79	1.86	1.93	2.01	2.10	2.18	2.25	2.34	2.42	2.50	2.58	2.67	2.75	2.83	2.91	3.00	3.07	3.15		
50	1.50	1.59	1.66	1.74	1.82	1.90	1.98	2.06	2.14	2.21	2.30	2.38	2.46	2.54	2.62	2.70	2.78	2.86	2.94	3.02	3.10		
51		1.57	1.64	1.71	1.79	1.87	1.95	2.02	2.10	2.18	2.26	2.34	2.42	2.49	2.57	2.65	2.74	2.82	2.90	2.97	3.05		
52		1.54	1.61	1.68	1.76	1.84	1.92	1.99	2.06	2.14	2.22	2.30	2.38	2.45	2.53	2.61	2.68	2.76	2.84	2.92	3.00		
53		1.51	1.59	1.66	1.74	1.81	1.89	1.96	2.03	2.10	2.18	2.26	2.34	2.41	2.49	2.57	2.64	2.71	2.79	2.86	2.94		
54			1.56	1.63	1.71	1.78	1.86	1.93	2.00	2.07	2.15	2.22	2.30	2.37	2.45	2.52	2.59	2.66	2.74	2.81	2.89		
55			1.53	1.60	1.68	1.75	1.82	1.89	1.97	2.04	2.12	2.19	2.26	2.33	2.40	2.47	2.54	2.62	2.69	2.76	2.83		
56			1.50	1.57	1.65	1.72	1.79	1.86	1.93	2.00	2.08	2.15	2.22	2.29	2.36	2.43	2.50	2.57	2.64	2.71	2.78		
57				1.54	1.62	1.70	1.77	1.83	1.90	1.97	2.04	2.11	2.18	2.25	2.32	2.39	2.46	2.53	2.60	2.66	2.73		
58				1.51	1.59	1.67	1.74	1.80	1.87	1.94	2.01	2.08	2.15	2.21	2.28	2.35	2.42	2.48	2.55	2.62	2.69		



Hop Utilization Chart

Utilization as a function of Boil Gravity and Time

Gravity vs. Time	1.030	1.040	1.050	1.060	1.070	1.080	1.090	1.100	1.110	1.120
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.055	0.050	0.046	0.042	0.038	0.035	0.032	0.029	0.027	0.025
10	0.100	0.091	0.084	0.076	0.070	0.064	0.058	0.053	0.049	0.045
15	0.137	0.125	0.114	0.105	0.096	0.087	0.080	0.073	0.067	0.061
20	0.167	0.153	0.140	0.128	0.117	0.107	0.098	0.089	0.081	0.074
25	0.192	0.175	0.160	0.147	0.134	0.122	0.112	0.102	0.094	0.085
30	0.212	0.194	0.177	0.162	0.148	0.135	0.124	0.113	0.103	0.094
35	0.229	0.209	0.191	0.175	0.160	0.146	0.133	0.122	0.111	0.102
40	0.242	0.221	0.202	0.185	0.169	0.155	0.141	0.129	0.118	0.108
45	0.253	0.232	0.212	0.194	0.177	0.162	0.148	0.135	0.123	0.113
50	0.263	0.240	0.219	0.200	0.183	0.168	0.153	0.140	0.128	0.117
55	0.270	0.247	0.226	0.206	0.188	0.172	0.157	0.144	0.132	0.120
60	0.276	0.252	0.231	0.211	0.193	0.176	0.161	0.147	0.135	0.123
70	0.285	0.261	0.238	0.218	0.199	0.182	0.166	0.152	0.139	0.127
80	0.291	0.266	0.243	0.222	0.203	0.186	0.170	0.155	0.142	0.130
90	0.295	0.270	0.247	0.226	0.206	0.188	0.172	0.157	0.144	0.132
100	0.298	0.272	0.249	0.228	0.208	0.190	0.174	0.159	0.145	0.133
110	0.300	0.274	0.251	0.229	0.209	0.191	0.175	0.160	0.146	0.134
120	0.301	0.275	0.252	0.230	0.210	0.192	0.176	0.161	0.147	0.134



Hangtown Brew Noose

Water Mod Table

Beer Style	Ion Concentrations Resulting From Recommended Teaspoon Additions (for 5 gallons)*					
	Ca	Mg	Na	SO4	Cl	HCO3
IPAs, US Pale Ale, Amber Ales, American Brown Ales, Imperial Stouts	127	19	30	366	43	0
Bitter	96	1	30	222	43	0
Pale Ale (Burton-on-Trent)	298	37	16	658	22	114
Pale Ale (London)	97	6	30	55	43	114
Mild Ale	50	6	39	129	57	0
Brown Ales, English and Irish	24	1	57	49	86	0
Scottish Ale, Wee Heavy	19	1	16	37	22	0
Scottish Ale, Edinburgh	112	15	16	127	22	114
Porter (Robust, Brown), Barleywine, ESB	58	1	30	37	43	57
Sweet, Cream, Oatmeal Stout	68	1	16	37	22	71
Dry Stout, Schwarzbier, German Dunkel, Export Stout	60	3	16	28	22	71
Irish Dry Stout	81	6	2	18	1	114
Bohemian Pils, Tripel, Wit, Kolsch, Helles, Belgian Golden Ale, Saison, Biere de Garde	3	1	2	0	1	0
Light Lager, German Pils, Maibock, Fruit Beer, Cream Ale	50	1	30	111	43	0
Dark Lager	82	1	30	49	43	86
Munich Dunkel	42	6	30	18	43	57
Maerzen, Rauchbier, Vienna	60	1	16	111	22	14
Bock	58	6	39	55	57	57
Doppelbock	77	1	57	37	86	86
Alt	34	1	30	74	43	0
Dortmunder	75	10	39	183	57	14
Weizen	24	1	2	49	1	0
Dunkel Weizen	24	1	2	49	1	0
Dubbel, Ol Bruin, Abbey Ale, Belgian Strong Dark, Belgian Christmas	3	1	2	0	1	0

*Source: Beer Captured, Soft Water Modification

Hangtown Brew Noose



Water Mod Table continued ...

Teaspoon Additions Needed (for 5 gallons)**				Grams Needed (for 5 gallons)***				Beer Style
CaSO4	NaCl	CaCO3	MgSO4	CaSO4	NaCl	CaCO3	MgSO4	
2.00	0.25	0.00	1.00	9.60	1.33	0.00	3.40	IPAs, US Pale Ale, Amber Ales, American
1.50	0.25	0.00	0.50	7.20	1.33	0.00	1.70	Brown Ales, Imperial Stouts
3.50	0.13	2.00	2.00	16.80	0.66	3.60	6.80	Bitter
0.25	0.25	2.00	0.25	1.20	1.33	3.60	0.85	Pale Ale (Burton-on-Trent)
0.75	0.33	0.00	0.25	3.60	1.75	0.00	0.85	Pale Ale (London)
0.33	0.50	0.00	0.00	1.58	2.65	0.00	0.00	Mild Ale
0.25	0.13	0.00	0.00	1.20	0.66	0.00	0.00	Brown Ales, English and Irish
0.50	0.13	2.00	0.75	2.40	0.66	3.60	2.55	Scottish Ale, Wee Heavy
0.25	0.25	1.00	0.00	1.20	1.33	1.80	0.00	Scottish Ale, Edinburgh
0.25	0.13	1.25	0.00	1.20	0.66	2.25	0.00	Porter (Robust, Brown), Barleywine, ESB
0.13	0.13	1.25	0.13	0.60	0.66	2.25	0.43	Sweet, Cream, Oatmeal Stout
0.00	0.00	2.00	0.25	0.00	0.00	3.60	0.85	Dry Stout, Schwarzbier, German Dunkel, Export Stout
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Irish Dry Stout
0.75	0.25	0.00	0.00	3.60	1.33	0.00	0.00	Bohemian Pils, Tripel, Wit, Kolsch, Helles,
0.33	0.25	1.50	0.00	1.58	1.33	2.70	0.00	Belgian Golden Ale, Saison, Biere de Garde
0.00	0.25	1.00	0.25	0.00	1.33	1.80	0.85	Light Lager, German Pils, Maibock, Fruit Beer,
0.75	0.13	0.25	0.00	3.60	0.66	0.45	0.00	Cream Ale
0.25	0.33	1.00	0.25	1.20	1.75	1.80	0.85	Dark Lager
0.25	0.50	1.50	0.00	1.20	2.65	2.70	0.00	Munich Dunkel
0.50	0.25	0.00	0.00	2.40	1.33	0.00	0.00	Maerzen, Rauchbier, Vienna
1.00	0.33	0.25	0.50	4.80	1.75	0.45	1.70	Bock
0.33	0.00	0.00	0.00	1.58	0.00	0.00	0.00	Doppelbock
0.33	0.00	0.00	0.00	1.58	0.00	0.00	0.00	Alt
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Dortmunder
4.80	5.30	1.80	3.40					Weizen
								Dunkel Weizen
								Dubbel, Ol Bruin, Abbey Ale, Belgian Strong
								Dark, Belgian Christmas

** Based on Placerville Water Ions (ppm):

Calcium = 3
 Magnesium = 1
 Sodium = 2
 Sulfate = 0
 Chloride = 1
 Bicarbonate = 0

*** Assumes:

Ingredient	Grams	Ion ppm in 5 gallons
1 tsp CaSO4	= 4.8	62 Ca 148 SO4
1 tsp NaCl	= 5.3	110 Na 170 Cl
1 tsp CaCO3	= 1.8	39 Ca 57 CO3
1 tsp MgSO4	= 3.4	18 Mg 70 SO4



Hangtown Brew Moose

Mass – Weights – Volume

1.0 g = 0.035 oz.	1 US oz. = 29.57 mL
1.0 lb = 16 oz = 454 g	1 cm = 0.39 in.
1.0 L = 0.26 US gal	1 tbsp = 3 tsp = 15 mL
1.0 US gal = 3.79 L	1 US gallon = 128 US fluid ounces
1 tsp = 5 ml	1 liter = 33.8140226 US fluid ounces
1 ppm = 1 mg/L (based on a density of 1 g per mL)	

Weight of Water:

Water Qty, Temp	Grams	Pounds
1 Gal Water at 55F	3733	8.23
1 Gal Water at 70F	3778	8.33
1 Gal Water at 204F	3640	8.02

Length

6 inches is _____ long

Beer Flavor Wheels

The Beer Flavor Wheel was developed in the 1970s by Morten Meilgaard. It was subsequently jointly adopted as the flavor analysis standard by the European Brewery Convention, the American Society of Brewing Chemists, and the Master Brewers Association of the Americas.

You can see it here:

<http://brewingtechniques.com/library/backissues/issue5.6/flavorwheel.html>

The Beer Education Trust has created an Beer Flavour Wheel where experts have identified over 100 different flavours in beers from around the world. They presented this in the form of the now famous “Beer Flavour Wheel” shown below. These flavour terms are used by beer tasters internationally to describe the beer flavour and to control product consistency. In fact it was such a good idea that is has now been stolen by the wine and whisky industries who have developed their own flavour wheels!

You can see it here:

<http://www.beeracademy.org/Flavour.asp>

Hangtown Brew Noose



White Labs / Wyeast Equivalents

Wyeast	White Labs #	White Labs name
1056 American	001	California Ale
1968 London ESB	002	English Ale
1084 Irish Ale	004	Irish Ale
1098 British	005	British Ale
1318 London III	008	East Coast
1388 Belgian Strong	570	Belgian Golden
1028 London	013	London Ale
1728 Scottish	028	Edinburgh
2565 Kolsch	029	German Kolsch
1338 European	036	Dusseldorf alt
1272 American II	051	California Ale V
3068 Weihenstephan Weizen	300	Hefeweizen
3333 German Wheat	380	Hefeweizen IV Ale
3944 Belgian Witbier	400	Belgian Wit Ale
3787 Trappist	500	Trappist
1214 Belgian Ale	530	Abbey Ale
1762 Belgian Abbey II	550	Belgian Ale
2278 Czech Pils	800	Pilsner Lager
2112 California	810	San Francisco Lager
2124 Bohemian	830	German Lager
2206 Bavarian Lager	820	Octoberfest/Marzen Lager
2308 Munich Lager	838	Southern German Lager
1275 Thames Valley	023	Burton Ale
2007 Pilsen	840	American Pilsner Lager

Chart courtesy of Morning Glory Fermentation.
<http://www.morninggloryfermentation.com/>



Hangtown Brew Noose

HAZE CLUB - AWARD OF BREWING PROGRAM

Purpose

The purpose of the Award of Brewing (AoB) program is to inspire members to learn about and accurately reproduce a wide variety of beer and mead styles as defined by the Beer Judge Certification Program. Participation is voluntary and open to all members.

Program Guidelines

- Program participants fill out an AOB Registration Form for each sample submitted for judging.
- The judges will not assist the brewer in style determination. Styles are based on the Beer Judge Certification Program's style guidelines (www.bjcp.org).
- The sample and completed Registration Form should be presented to the AoB coordinator prior to the start of the club's monthly meeting or steering meeting, whichever the participant chooses.
- Samples will be evaluated by a panel of judges comprised of at least 2 experienced BJCP judges, and at least one non-BJCP judge. The judging panel will decide how many samples can be reasonably judged given time constraints, based on a first-come first-served basis.
- Sample volume requirements are as follows: 1 Liter of beer or ½ Liter for high gravity (>1.080) beer, mead or cider.
- The judges will return a copy of the Registration Form and communicate their impressions of the sample so that the participant can make adjustments to recipes or techniques as needed.
- Judges will provide a "reference score" with their results indicating where they feel the beer might fit in the range of overall quality.
- A copy of the completed Registration Form will be saved by the AoB coordinator in the club AoB file.
- After (or while) the beer has been (or is being) sampled by the judging team it may be made available to everyone in attendance, based upon the wishes of the brewer of the sample.
- Brewers may work together but no more than two individuals will receive credit for a beer that has successfully passed the judges' examination. Credited brewers should be involved in all aspects of the brewing process from recipe development through packaging.

Award of Brewing Levels

Brewers advance through the program by demonstrating their ability to produce beers that accurately reflect the characteristics of world beer styles as defined by the Beer Judge Certification Program guidelines; submitted samples should exhibit no major defects in flavor, quality, or style.

- Recognized Brewer: To reach the "recognized" level a brewer must make a beer from 6 of the major categories currently sanctioned by the AHA. At least 1 of these must be a lager and at least 1 of these must be an ale.



HAZE CLUB - AWARD OF BREWING PROGRAM

continued

- **Accomplished Brewer:** To reach the “accomplished” level a brewer must make a beer from 12 of the major categories currently sanctioned by the AHA. At least 2 of these must be lagers and at least 2 of these must be ales. Beers credited to a Recognized brewer count toward this obligation.
- **Master of Brewing:** To reach the “master” level a brewer must make a beer from every major category currently sanctioned by the AHA. Beers credited to an Accomplished brewer count toward this obligation.
- **Master of Brewing 2nd Degree:** To reach this level a brewer must produce beers representing 26 additional styles beyond those credited for the “master” level. A club service component is also required to advance to this level. This will include, but not be restricted to, a demonstration of the brewer’s knowledge of world beer styles and technical aspects of homebrewing.
- **Grand Master:** To reach this level a brewer must produce every style of beer currently sanctioned by the AHA (currently 80). Beers credited to a 2nd Degree Master brewer count toward this obligation. A club service component is also required to advance to this level. This will include, but not be restricted to, a demonstration of the brewer’s knowledge of world beer styles and technical aspects of homebrewing.

Awards and Recognition

Awards serve as the club’s acknowledgement of the brewer’s achievement in successfully brewing various styles of beer. Upon reaching the level of Recognized Brewer, the participant will receive a gift certificate worth \$10. Reaching the level of Accomplished Brewer will be rewarded with a \$20 gift certificate. Upon reaching the level of Master of Brewing, the participant will receive an engraved and personalized glass mug, an engraved plaque indicating they have reached the level of Master of Brewing, and their name added to the Award of Brewing plaque of Master Brewers currently hanging at the Winesmith. Further awards and recognition are available as the brewer progresses above the level of Master of Brewing, culminating in the member’s ultimate ownership of the universe and everything in it.

HAZE CLUB AWARD OF BREWING SAMPLE REGISTRATION FORM																						
<hr/> Brewer(s) Name		<hr/> BJCP Style (e.g. 1A)																				
<hr/> Evaluated By		<hr/> Evaluation Date																				
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Hangtown Brew Noose

Steve Seeley's Northern English Brown

(11 gallon – all grain)
14 lbs Crisp Maris Otter
2 lbs Crystal 40 L
0.5 lbs Chocolate
1.0 lbs Brown Sugar
0.5 lbs Lactose
3.0 oz Northern Brewer 6.2% 60 min
1.0 oz Northern Brewer 6.2% 15 min
Wyeast 1084 Irish Ale

**First Place For English Brown
in the 2007 World Cup!**

Mash at 147 F 30 min. Step to 154 for 60 min. Mashout At 168 F. Add 2.5 tsp Calcium Carbonate and 1.5 tsp Citric Acid in the boil.

OG: 1.053 FG: 1.013
IBU: 29.4

Brewing Network

Check out Beth Zangaris' interview on the Brewing Network:

www.thebrewingnetwork.com/sundayarchive.php Episode 9-24-06

Public Service Announcement....

In a number of carefully controlled trials, scientists have demonstrated that if we drink 1 liter of water each day, at the end of the year we would have absorbed more than 1 kilo of Escherichia coli (E. coli) bacteria found in feces.

In other words, we are consuming 1 kilo of Poop. However, we do not run that risk when drinking wine (or rum, whiskey, BEER or other liquor) because alcohol has to go through a purification process of boiling, filtering and/or fermenting.

Remember:

Water = Poop

Beer = Health

Therefore, it's better to drink beer and talk stupid, than to drink water and be full of shit.

A recent survey revealed that the average American walks 900 miles per year. Another revealed that the average American consumes 20 gallons of beer per year.

Conclusion: The average American gets 45 miles per gallon. (your mileage may vary!)