

# Kentucky Common – An Almost Forgotten Style

Presented by Leah Dienes and Dibbs Harting

The nearly lost beer style, known variously as Common, Dark Cream Ale or mostly Kentucky Common has stirred up a lot of attention over the last decade as being one of only three truly indigenous beer styles of the United States. As with any bit of history that has been preserved mostly in oral traditions, a more than ample amount of myth and lore abound. What has been well documented in the literature is that Kentucky Common was clearly the beer of choice in a relatively narrow market surrounding Louisville, Kentucky from the mid 19<sup>th</sup> Century up until Prohibition whence the style passed quietly into obscurity along with the six remaining breweries of the region.

When prohibition was declared in Kentucky (two months in advance of the Volstead Act) in November 1919, at least 75% of all beer sold in the Falls City area was Kentucky Common. The reasons were varied, but the bottom line is that it was inexpensive, quick to produce and obviously very well received by the vast majority of saloon patrons. Around the turn of the century, Kentucky Common was delivered to the saloon cellar for five dollars a barrel; a raw product cost of two cents per pint to the saloon keeper. In comparison, Stock Ale was going for twelve dollars a barrel and the newer and larger breweries producing lagers sold their product for eight dollars per barrel.

As was true with practically everything in the brewing business, both process and product experienced significant maturation from about the 1880's to prohibition. Electric power became available although many breweries still relied on steam engines for both power and process heat. A larger improvement was the availability of refrigeration or ice plants since to brew through the summer months, more southern cities such as Louisville, relied on ice cut in the winter which was scarce and expensive. Consolidation also led to larger and more prosperous brewing operations, allowing even more capital improvements such as in-house cooperage operations and bottling plants. Dedicated malt houses also sprang up in the city, allowing brewers to convert their cellar malting facilities to year round brewing and maturation.

Louisville by no means lacked sophistication when it came to brewing. Few realize that Louisville was the 12<sup>th</sup> largest city in the US at the time of the Civil War and even at the turn of the century, it was the 15<sup>th</sup> largest brewing center in the country. The landscape and climate proved favorable to the large influx of both Irish and German immigration of the mid 1800's; both cultures with a thirst for beer and good beer at that. As occurred in most brewing markets, brewers of Germanic origins soon dominated the industry and a great interchange of knowledge ensued with the formation of organizations such as the Master Brewers Association of America and the American Society of Brewing Chemists. By the turn of the century, the larger breweries of Louisville were headed by well trained and disciplined brewmasters.

With this introduction, let us look more closely into the style. Even with the sophistication of the Louisville brewing community noted above, practically all record keeping within the brewery was handwritten; either in ledger books or forms. See Figure 1 for a typical Brewing Record for Kentucky Common which details the preparation of the mash (both cereal and malt mashes), lauter, sparge and the boiling and hop additions. Notice the gravity is in degrees Balling and temperatures are in degrees Reaumur (0° freezing and 80° boiling). For comparison, Figure 2 is a record for the more familiar late winter style, Bock.

1912 BREWING RECORD *White*  
 Sash No. *208* Date *10/11*  
 Kind of Malt *White No. 2*  
**CEREAL MASH**  
 Water *67* Bbls. *31* Temp.  
 Malt *75* Lbs.  
 Cereal *4800*  
 Mash No. *930* Record: *930* Mash in *930* *935*  
*935* *915* *935* *945* *1030*  
*31* *30* *56* *56* *70* *80*  
*28* *20* *25* *15* *50* *45* *1030* Finished  
 Remarks *Cyrene, Louis Hardt*  
**MALT MASH**  
 Water *63* Bbls. *42* Temp.  
 Malt Lbs. *6500* *Black Gem*  
 Caramel Malt Lbs. *200* *250*  
 Mash No. *930* Record: *930* Mash in *930* *935*  
*1030* *1035* *1115* *1133*  
*42* *40* *54* *59* *60*  
*80* *85* *90* *15* *1133* Finished  
 Tapped *1205* Pumped back *15*  
 Run to Copper *1229* Time *820*  
 Sparging *35* Bbls. at *62*  
*15* " *62*  
*30* " *62*  
*20* " *62*  
 Remarks  
 Copper Full *1205* Bbls. *9*  
 Copper Run *846* " *295* *820*  
 Hops, kind and quantity *65* *65* *20* Boiling No.  
 1st Hop *20-306* *630*  
 2d " *45-306* *730*  
 3d " *65-203* *745*  
 4th " *20-102* *839*  
 1st Wort *209* Last Wort *195*  
 1st Break Last Break  
*820*

Figure 1

*Bock Beer for 1911*  
*Four Brews (one Krausen)*  
Cooker *55 Bbls Water 4800 lbs. Lita*  
*1500 lbs malt - 750# Caramel Malt*  
*mash* *750 g. m*  
*30-30-57-57-80-80-80*  
*30 20 15 15 45 5 80*  
malt mash  
*65 Bbls Water - 7000# malt - 150# Black malt.*  
mash  
*45-42-58-58-59-60*  
*85 7 23 2 20*  
 Hops *60 lbs #12, - 45# - 11, 60 lbs #23*  
*1st 20# 12, 2nd 40# 12,*  
*3rd 45# 11 and 10# 23, - 4th 50# - 23*  
 Boiling *1st 2 hrs, 2nd 1 hr 30m*  
*3rd 30m, - 4th No.*  
 Yeast *140 lbs.*  
 Cooling to *12°*  
 Attenuating *15 1/2 to 16°*  
 cask cooling to *3°*

Figure 2

The brew logs provide a broader look into the brewery practices of four of the larger breweries around the turn of the century and their ingredients and practices are amazingly similar with regard to Kentucky

Common. Figures 3 and 4 show two of these logs; Figure 3 from 1904 Butchertown Brewery and Figure 4 from 1912 Oertel's Brewery.

April															
d	Date	Malt	Grain	Bk	Malt	Wt	Wt	Wt	Wt	Wt	Wt	Wt	Date	Wt	
48	2	6810	4300	165	70	25	25			113	262	257	125	119	243
49	3	6919	4300	165	70	25	25	19		114	261	257	121		242
50	5	6880	4300	165	70	25	25	19		113	261	257	119	119	241
7	6	6890	4300	165	70	25	25	19.2		113	261	257	12.90	119.4	243
2	8	6855	4300	165	70	25	25	19.3		111	262	252	117.5		248
7	10	6855	4300	165	70	25	25	18.1		113	260	250	12.05	12	247
26	12	6870	4300	165	70	25	25	18.7		111	260	250	12	118.5	242
5	14	6860	4300	165	70	25	25	18.9		112.5	260	250	12.5	119.5	240
3	16	6860	4300	165	70	25	25	18.9		112	259	252	11.98	11.9	242
7	17	6885	4300	165	70	25	25	18.7		114	259	250	12	12	241
7	17	6890	4300	165	70	25	25	18.1		115	259	252	12.05		237
7	19	6800	4300	165	70	25	25	18.7		116	259	250	12.15	12.1	246
7	19	6835	4300	165	70	25	25	18.4		111	263	253	11.8		246
	20	6913	4300	165	70	25	25	19		117.5	260	251	12		243
	21	6900	4300	165	70	25	25			114	262	255	11.8	11.8	248
	22	6835	4300	165	70	25	25	18.4		111	263	255	11.65	11.85	240
	23	6880	4300	165	70	25	25	18.9		111	263	254	11.7	11.6	242
	26	6885	4300	165	70	25	25	19		114	259	252	11.95	12.05	248
	27	6905	4300	165	70	25	25	18.9		114.7	258	253	11.95	12	245
	28	6910	4300	165	70	25	25	18.5		112.5	260	255	11.7	11.7	243
	30		4300	165	70	25	25			111.5	263	258	11.55	11.55	250
														517	
						1470	525	525							
May															
	1	6880	4300	165	70	25	25	18.9		111	263	258	11.55	11.2	246
	3	6855	4300	165	70	25	25	18.5		111	262	253	11.85	11.75	242
	3	6865	4300	165	70	25	25	18.5		114	261	255	11.9	11.67	242
	5	6895	4300	165	70	25	25			111	263	257	11.7	11.66	244
	8	6820	4300	165	70	25	25			115	265				158
	11	4920	2900	110	38	62	-								1076
		39135	24400	925	388	187	125								

Figure 3

132										133																			
1912 October										Extract																			
Recd. Date	Barrel	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat	Wheat									
208	1	8000	4800	250	200	3"	25	65	65	20	209	197	3	95	120	20	285	120	79	45	500	300	605	9570	9568	204	208		
209	2	8000	4800	250	200	3"	25	65	65	20	205	3	300	120	2	95	120	270	120	16	450	500	510	605	9570	9561	1	209	
210	3	8000	4800	250	200	3"	25	65	65	20	205	6	300	120	5	95	120	280	120	15	400	500	500	605	9561	9500	50	210	
211	7	8000	4800	250	200	3"	25	65	65	20	205	5	300	120	7	95	120	290	120	16	400	500	500	605	9561	9500	50	211	
212	8	8000	4800	250	200	3"	25	60	60	20	205	5	300	120	8	95	120	280	120	15	400	500	500	605	9561	9500	50	212	
213	9	8000	4800	250	200	3"	25	65	65	20	203	12	300	120	9	95	120	288	120	15	400	500	500	605	9561	9500	50	213	
214	10	8000	4800	250	200	3"	25	65	65	20	204	5	300	120	10	95	120	280	120	15	18	400	500	500	605	9561	9500	50	214
215	14	8020	4800	250	200	3"	25	65	65	20	198	14	300	120	14	95	120	280	120	15	18	400	500	500	605	9561	9500	50	215
216	15	8000	4800	250	200	3"	25	65	65	20	194	16	300	120	15	95	120	280	120	15	18	400	500	500	605	9561	9500	50	216
217	16	8000	4800	250	200	3"	25	65	65	20	191	11	300	120	16	95	120	280	120	15	18	400	500	500	605	9561	9500	50	217
218	17	8000	4800	250	200	3"	25	65	65	20	204	14	300	120	17	95	120	280	120	15	18	400	500	500	605	9561	9500	50	218
219	18	8000	4800	250	200	3"	25	65	65	20	205	14	300	120	18	95	120	280	120	15	18	400	500	500	605	9561	9500	50	219
220	21	8000	4800	250	200	3"	25	65	65	20	205	6	300	120	21	95	120	280	120	15	18	400	500	500	605	9561	9500	50	220
221	22	8050	4800	250	200	3"	25	65	65	20	205	17	300	120	22	95	120	280	120	15	18	400	500	500	605	9561	9500	50	221
222	23	8000	4800	250	200	3"	25	65	65	20	182	18	300	120	23	95	120	280	120	15	18	400	500	500	605	9561	9500	50	222
223	26	8020	4800	250	200	3"	25	65	65	20	190	18	300	120	26	95	120	280	120	15	18	400	500	500	605	9561	9500	50	223
224	28	8000	4800	250	200	3"	25	65	65	20	191	6	300	120	28	95	120	280	120	15	18	400	500	500	605	9561	9500	50	224
225	29	7760	4800	250	200	3"	25	65	65	20	187	18	300	120	29	95	120	280	120	15	18	400	500	500	605	9561	9500	50	225
226	30	8000	4800	250	200	3"	25	65	65	20	187	18	300	120	30	95	120	280	120	15	18	400	500	500	605	9561	9500	50	226
227	31	8000	4800	250	200	3"	25	65	65	20	187	18	300	120	31	95	120	280	120	15	18	400	500	500	605	9561	9500	50	227
160150										4200 5000 4000 120 100 100																			

Figure 4

You will note both the increase in the details of record keeping as well as significant changes and degree of sophistication of the recipe. All in all, however, the methods and basic character of the style were quite similar from brewery to brewery from the turn of the century up to Prohibition.

The grist was made up of 60% six row pale malt, 36% to 38% corn grits, from 1½% to 2% black malt and from 0 to 1½% caramel malt (caramel coloring was used early on if caramel malt was not available although caramel malt appears in most recipes from 1908 on). The dark malt additions more than likely came into play because the typical Louisville area water was and is rather alkaline due to the underlying Karst features and the German trained brewers were very familiar with the benefits of dark roasted malt additions to acidify the mash and improve brewhouse efficiency.

The cereal mash included the grits and about 25% of the malt. There was a brief (15 minute) acid rest followed by a dextrification rest at 156-158°F for 15 minutes and finally a 15 minute boil. The malt mash was the remainder of the pale malt plus the dark malts with a 15 minute protein rest followed by a similar dextrification rest (156-158°F) that appears to have been reached by the add back of the cereal mash. The temperature is finally raised to 168°F for mash out followed by a 15 minute vorlauf.

The first runs from the lauter tun were typically in the 1.085 to 1.090 range and sparging continued until last runs were in the 1.006 to 1.008 range. Sparge water was maintained at 170°F and the volume was normally about 70% of the kettle fill. The composite pre-boil gravity was 1.050.

The hop bills were also similar with Western hops (probably California Gray or a variant) used for bittering at a rate of approximately ¼ pound per barrel. New York hops (almost assuredly Clusters) for flavor, also at about ¼ pound per barrel. A small (0.05 to 0.1 pounds per barrel) late addition of imported hops (more than likely a German or Bohemian variety) was used for aroma. As with caramel malt in the early part of the 20<sup>th</sup> century, hop availability was often uncertain and substitutions occasionally occurred. As noted in Figure 4, Irish moss was used as well as calcium which was surely gypsum. The boil length was two hours

with the first addition at the beginning of the boil (or possibly a first wort hop addition). The second addition for 90 minutes, the third addition for 30 minutes and the fourth was added at knockout.

The wort was chilled to about 60 degrees and about ½ pound of yeast per barrel was pitched. Fermentation was carried out at 66° to 68°F for only 3 to 4 days before the beer was racked from the fermenter, probably to a chip cask for brief clarification prior to adding a Krausen and filling the trade packages; typically full (31 gallon) pitch lined barrels. The entire brewing cycle from cereal mash to finished beer ready for delivery was 6 to 8 days.

We now enter the realm of myth and legend as there are very few documented descriptions of the style other than it was widely accepted and by far the favorite beer sold in the Falls City area prior to prohibition. The earliest known reference to Kentucky Common was contained in the second edition of American Handy Book of the Brewing, Malting and Associated Trades by Wahl & Henius shown in Figure 5.

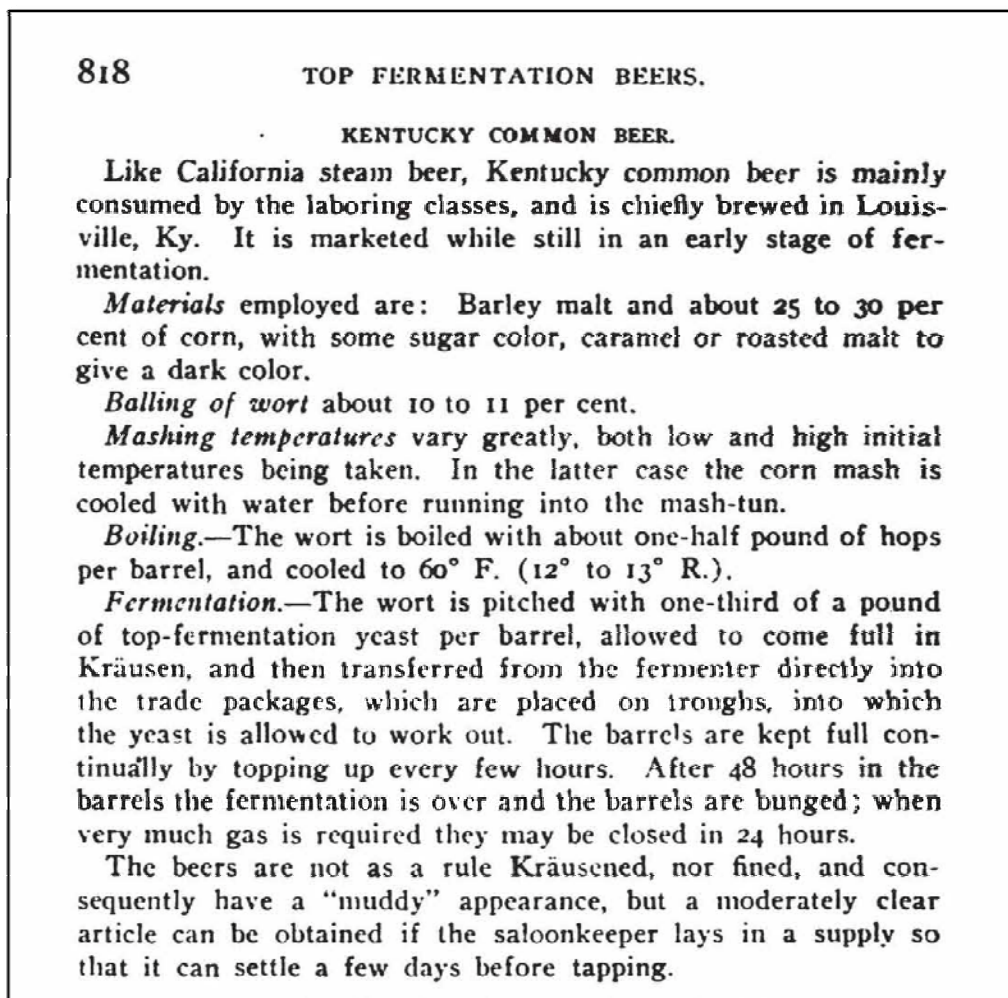


Figure 5

Given that the second edition was published in 1902, it is worth noting that some of the information, particularly concerning fermentation, is not as advanced as the actual brewery records available from the 4 largest breweries of the early 20<sup>th</sup> century and seem more appropriate to the much smaller family breweries (1,500 to 2,000 barrels per year) that existed

at the turn of the century. However, ingredients and process seem to be much in line with the recovered records.

The characteristic of Kentucky Common that is most often noted in myth and legend is that it was a sour beer. Often it is assumed that the sourness was derived from sour mashing techniques that were (and still are) employed by the Bourbon Whiskey distillers. It is clear from the available brewing records, however, that this technique was not employed in the production of Kentucky Common. The mashing techniques are very clearly defined; both in ingredients and in cycle timing. The other possibility was the addition of lactic producing bacteria during fermentation. The likelihood of this occurring was enhanced with information on Kentucky Common in the 3rd edition of Wahl & Henius published in 1906, shown in Figure 6.

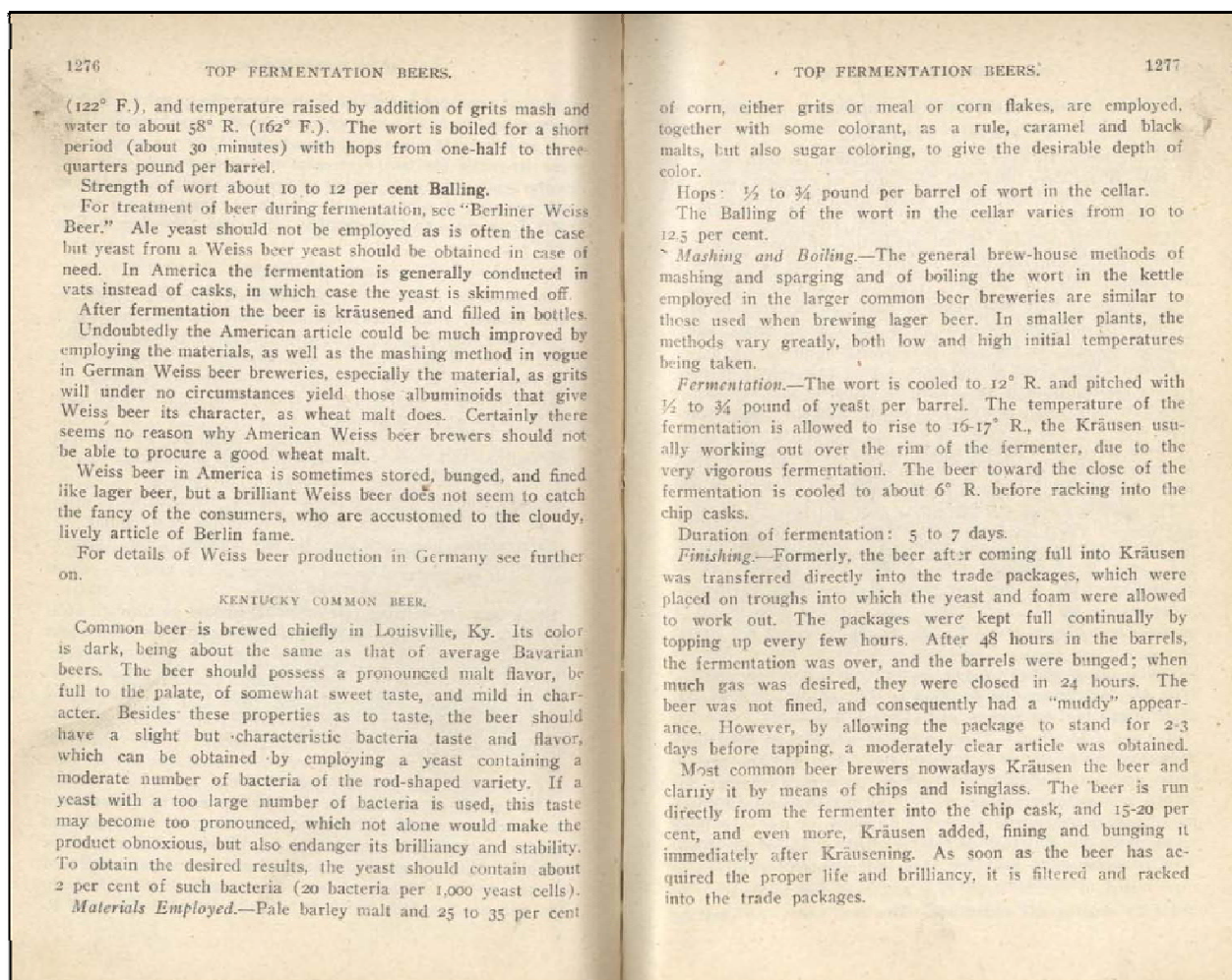


Figure 6

You will note that, for the most part, the descriptions follow very closely the “modern” methods as annotated in the brew logs and brewing records shown above with one exception; *the “slight but characteristic bacteria taste and flavor.”* Herein, I believe, lies the origins of the great myth and legend of Kentucky Common being a sour beer. The bacteria, described as *rod shaped variety* most certainly is of the *Lactobacillus* genus which was known in general terms at the turn of the century, but now well

understood or classified. The key factor, with regard to brewing was that *Lactobacillus* was generally avoided like the plague and was known as a major spoilage bacterium, particularly in the US brewing industry.

The exceptions were two species deemed beneficial; *L. delbrueckii* and the *L.* bacteria that was known to reside on pale malt, much later (2008) classified as *L. hordei*. The *L. delbrueckii* species was known as the primary bacteria employed for such styles as Berliner Weiße, though not formally identified until 1905. Both of these species have the beneficial characteristic of being rather hop sensitive and therefore do not prevail in normal beer styles with bitterness levels much above 10 IBUs. If employed prior to the boil or with very low hop rates, they metabolize various simple sugars, producing primarily lactic acid, alcohol and CO<sub>2</sub> with little turbidity, obviously desired for Berliner Weiße. The *L. hordei* species is of primary interest in methods of sour mashing whereby raw malt is added to the mash at the optimum pH and temperature. Given the very direct and efficient mashing techniques employed for Kentucky Common, these species do not come into play.

The hop insensitive species are typically the bad actors and responsible for spoilage in the industry. The species, that were not isolated in the heyday of Kentucky Common, are now known as *L. plantarum*, *L. paracollinoides* and *L. brevis* with *L. brevis* being the most wide spread and troublesome. Normally, 70% to 80% of all beer spoilage is attributed to *L. brevis*. The species is very persistent and well known both in the wine industry as well as brewery operations for contamination of cooperage. It is here that I surmise the lore is founded.

The fact that Wahl & Henius describe the suspect bacteria as rod shaped (*Lactobacillus*) and in such low concentrations (2%) would seem to imply that someone had performed microscopic analyses of finished beer. With this presumption, the bacterium present could not be *L. delbrueckii* or *L. hordei* since they could not survive the boil nor would they prosper in the finished wort which was likely in the 20 to 30 IBU range. Therefore, the bacterium must be one of the hop insensitive species, more than likely *L. brevis* which no brewer would purposely introduce into his or her brewery but most likely resulted from contaminated cooperage. As mentioned earlier, at the time the 3<sup>rd</sup> edition of The Handy Book's preparation, there were likely still a dozen or more small breweries in operation in the Louisville area. One of the benefits of consolidation and emergence of much larger breweries was the incorporation of cooperage operations which assured the barrels were sound, well pitched and, most importantly, sanitized. Unfortunately, these attributes were not shared in the smaller breweries. It is here that I believe, however intriguing, the sour beer myth and legend originated.

Finally, four of the five examples of the style you tasting today have been brewed as strictly as possible to a composite of the recipes and methods recorded in the brew logs and records from 1904 through 1912. Figure 7 shows the brewing record for a typical batch in a more user friendly format. Figure 8 is a recent brewing record for the style, recorded in very similar format for comparison. The hop bill is a bit uncertain; particularly the Western hop variety and characteristics. The yeast used is also an unknown and was probably a proprietary top fermenting yeast for each of the breweries. In an attempted to see what a difference the yeast would make seven different yeast strains have been used and there clearly is a difference which you will experience today. The yeasts used will be revealed in our discussion. A draft of the proposed style guideline for Kentucky Common is attached.

Cheers and happy brewing.

# Sud 208 01 October 1912

## Cereal Mash

	Bbls.	Gal.	Temp. R	Temp. F
Water	57	1,767	31	102

	Lbs.	Cereal	Total Water
CaSO <sub>4</sub> ·2H <sub>2</sub> O	25	mg/L Ca 391	68
Malt	1,500	mg/ISO <sub>3</sub> 952	164
Cereal	4,800		

Time	Temp. R	Temp. F		
8:30	31	102	Start Mash-in	
8:55	30	100	Mash-in Complete	0:25
9:15	56.5	159	Start Dextrification rest	
9:30	56	158	End Dextrification rest	0:15
9:45	80	212	Raise to Boil	
10:00	80	212	End Boil	0:15

## Malt Mash

	Bbls.	Gal.	Temp. R	Temp. F
Water	63	1,953	42	127

	Lbs.
Malt	6,500
Caramel Malt	200
Black Malt	250

Time	Temp. R	Temp. F		
8:55	42	127	Start Mash in	
9:10	40	122	Mash in Complete	0:15
			Probable addition of Cereal Mash	
10:38	58.5	164	Start Dextrification rest	
11:18	58	163	End Dextrification rest	0:40
11:33	60	167	Mash Out	
12:05			Start Vorlauf	
12:20			End Vorlauf	0:15

## Lauter

12:20	Start
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## Sparge

Bbls.	Gal.	Temp. R	Temp. F
35	1,085	62.0	172
45	1,395	62.0	172
50	1,550	62.0	172
80	2,480	62.5	173

	Balling	Sp.Gr.
First Wort	20.9	1.088
Last Runs	1.75	1.007

## Boil

	Type	lbs.	Time
On Boil			?
1 <sup>st</sup> Hop Add.	Western	20.0	18:30
2 <sup>nd</sup> Hop Add.	Western	45.0	19:30
3 <sup>rd</sup> Hop Add.	New York	65.0	19:45
Irish Moss		3.2	20:20
4 <sup>th</sup> Hop Add.	Imported	20.0	20:30

## Knock Out

Bbls.	Gal.	Balling	Sp.Gr.	Time
295	9145	12.55	1.051	20:30

Figure 7



## Kentucky Common - 10 Gallons

		Ca <sup>++</sup>	Mg <sup>++</sup>	Na <sup>+</sup>	Cl <sup>-</sup>	SO <sub>4</sub> <sup>-2</sup>	HCO <sub>3</sub>	pH
Louisville Water		52	6	26	40	46	79	7.5
CaSO <sub>4</sub> ·2H <sub>2</sub> O Addition - 0.2 g per gallon		12				29		
		64	6	26	40	75	79	7.2
<b>Cereal Mash</b>								
Water	Lbs.	2.5	102					
Corn Grits		6.5						
6 Row Malt		2.5						
Time		Temp. F	pH					
	13:45	102	5.9	Start Mash-in				
	14:00	96		Mash-in Complete :15				
	14:15	156		Start Dextrification rest				
	14:30	155		End Dextrification rest :15				
	14:45	212		Raise to Boil				
	15:00	212		End Boil :15				
<b>Malt Mash</b>								
Water	Gal.	3.5	125					
6 Row Malt	Lbs.	8.5	122	5.6				
Caramel Malt		0.25						
Black Malt		0.5	122	5.4				
Time		Temp. F						
	14:45	125	Start Mash-in					
	15:00	122	5.4	Mash-in Complete :15				
	15:05	156	Addition of Cereal Mash					
	15:25	154	Start Dextrification rest					
	15:45	168	5.4	End Dextrification rest :20				
	15:45	Mash Out						
	15:50	Start Vorlauf						
	15:50	End Vorlauf :05						
	15:50	Start						
<b>Lauter</b>								
	Gal.	Temp. F						
	16:00	2	170					
	16:10	2	170					
	16:20	2.5	170					
	16:30	2.5	170	Sparge Complete				
		Sp.Gr.	pH					
First Wort		1.088	5.4					
Last Runs		1.010	5.7					
Composite		1.048	5.6					
Water addition	.75 gal.	1.046	5.6					
Preboil volume	13.37 gal							
<b>Boil</b>								
	Type	grams	Time					
1st Hop Add.	Clusters	14	16:30					
On Boil	17:05							
2nd Hop Add.	Clusters	28	17:10					
3rd Hop Add.	Hallertauer	21	17:55					
Irish Moss		4	17:55					
4th Hop Add.	Hallertauer	14	18:10					
<b>Knock Out</b>								
	Gal.	Sp.Gr.	pH					
	11.25	1.050	5.3					

Figure 8

Leah Dienes is currently a Partner and Head Brewer at Apocalypse Brew Works. She is an award winning homebrewer and a BJCP Certified judge with Mead Endorsement.

Dibbs Harting is currently president and CEO of Indiana Ordnance Works. He is a physicist with 40 plus years experience in gun and rocket propulsion and commercial explosives. He has been brewing since college days in the early 1960's, producing horrible but alcoholic concoctions, and an avid homebrewer since 1973 with his first all grain batch brewed in 1979. He is a BJCP National judge.

Special thanks to Conrad Selle for providing much of the background materials and great historical knowledge of Louisville's colorful brewing history.