

# Baron Mind

A Monthly Publication for the Beer Barons of Milwaukee  
*Dedicated to the Education and Enjoyment of Fermented Malt Beverages*

October 1995

## October Meeting

The October monthly meeting is at 7:30 PM on October 25th, at Clifford's (10418 W. Forest Home Avenue, Hales Corners). As usual, the meeting is \$5.00 per person.



## Meeting Programs

October 25th	Homebrew Gadget Night and Autumn Beers
November 15th	Keith Peltz - Paulaner (3rd Wed) Officer Nominations for 1995
December 20th	Xmas Party and Officer Election (3rd Wed)
January 31st	To Be Announced
February 28th	To Be Announced
March 27th	To Be Announced
April 24th	To Be Announced
May 29th	To Be Announced
June 26th	To Be Announced

## Calendar of Events

November 4 - 5	1995 San Antonio Texas Brewers Festival, Sunken Garden, San Antonio, Texas. Call (512) 499-8544 or e-mail <a href="mailto:erc@eden.com">erc@eden.com</a>
November 11	November Classic, Madison, WI. Entries due November 4. Contact MHTG, Box 1365, Madison, WI 53701
November 12	HOPS-BOPS Homebrew Competition, Philadelphia, PA. Entries due November 10. Contact Sheila Elser at (215) 822-0917
November 17/18	World Homebrew Contest, Boston, MA. Entries due Nov. 6-10. Call Boston Beer Company at (617) 497-2863
November 18	1995 Thirsty Homebrew Competition, Iowa City, Iowa. Entries due November 10. Contact Dave Schinker at (319) 523-2314

## What's Hopping!

A Monthly Column  
by Peter McMullen



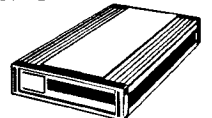
This month's meeting will be gadget night. Everyone is encouraged to bring in any homebrew gadget that they find helpful in their brewing process. In order for this to be a success, we need participation from many. I know first hand that no two people brew the same; everyone uses different "tools" to brew their beer.

For our drinking pleasure, we will be sampling fall-type beers. Besides the usual Oktoberfest, we will also have two pumpkin beers (an ale and a lager) and an Autumn ale. Show up to see what flavors we are offering.

November will be officer nominations, so let it be known if you're interested in any of the four positions. We will be needing volunteers as president, Vice-President, treasurer, and newsletter editor. Even if you don't run for an office, there are things people can do behind the scenes. Until this year, the newsletter had a staff of 3 people; an editor who selected and edited the articles, a layout person, who created the camera-ready copy for the printer, and the mailer, who folded, sealed, applied the mailing labels, stamped, and mailed the newsletter. This year's newsletter editor performed all of the functions, and has let it be known he is retiring from public office at the end of his term.

You could also start or join a beer style group, write articles for the newsletter, or plan a club meeting. I plan to continue to write a monthly column of a different sort. Please just don't come to meeting to be entertained. It is certainly all right for a while, but we can't have all followers with no leaders or contributors. After this year you won't have Peter McMullen to kick around, but you can surely offer me a beer anytime.

## World Wide Web



Get Wired!!! There are at least 150 WWW pages devoted to beer or brewing, including home pages for the American Homebrew Association. If you're able to access the "Web", try out these for starters. They each have links that will lead you to many of the others, which lead to even more. Good Surfing.

### American Homebrewers Association

<http://www.aob.org/aob>

### Spencer's Beer Page

<http://www.umich.edu/~spencer/beer/>

### The Guide to Guinness

<http://wombatix.physics.ucg.ie/misc/guinness.html>

### Benelux Beer Guide

<http://www.dma.be/p/bier/beer.htm>



# Beer Color

by Gary Kuyat

Color affects the appreciation and evaluation of beer in subtle but definite ways. The "halo effect" refers to a situation where a positive (or negative) response to one attribute leads to an over evaluation (or under evaluation) of other attributes. The color of beer can be a powerful but often subconscious generator of the "halo effect."

An example is the low marks given to otherwise satisfactory beers in competitions where the entry's color is inappropriate for the category. In professional tasting, the "halo effect" is generally regarded as an unacceptable bias. However, in less formal settings it reflects the natural influence that physical appearance of a food or beverage has over sensory anticipation.

For this, and other reasons, color control in brewing is important, and the goal of this chapter is to review the basic issues. Before describing the test we first review the units in which beer and wort color are measured, and then review the factors that affect color in malting and brewing.

**COLOR UNITS** Beer and wort color traditionally have been measured visually, and early on the Lovibond (degL) scale was adopted as a standard. This consists of a well-defined set of color samples that are used for comparison. A visual match with a beer or wort sample defines the degL of the sample. In modern brewing, photometric methods have replaced visual comparison, and the American Society of Brewing Chemists has developed the so-called Standard Reference Method (SRM), which is widely used.

Results are expressed as degrees SRM, and for the purposes of this article these units can be regarded as the same as degL. Some examples are presented in the chart below. Standard Reference Method (SRM) for Beer Color Evaluation

Color	Hue	L	Example	SRM
Yellow	light	0 - 2.5	Budweiser	2.0
	pale	2.5 - 3.5	Average American Lager	2.5 - 3.9
			Average German Pils	2.5 - 2.9
	deep	3.5 - 5.5	Molson Export Ale	4.0
	straw/ gold		Gosser Spezial	4.0
			Pilsner Urquel	4.2
Amber	light	5.5 - 10	Spaten Club Weiss	4.6
			Bass Pale Ale	10
			Whitbread Pale Ale	11
	medium deep	10 - 14 14 - 20	Avg. Marzen/Oktobertfest	7 - 14
			Avg. Alt (Dusseldorf)	11 - 25
			Michelob Classic Dark	17
Black	above 20	Salvator (Paulaner)	21	
		Triumphator (Lowenbrau)	29	
		Beliken Stout	76	

It is important to know that totally different units are used in England and Europe (i.e., degrees EBC). This is because of the different analytical procedures that are used for measurement. The following formulas have

$$\text{been used to relate these units: } (\text{degEBC}) = 2.65 \times (\text{degL}) - 1.2 \quad (\text{degL}) = 0.377 \times (\text{degEBC}) + 0.45$$

I have found that they give reasonable results for light-colored beers (e.g., those whose color does not exceed 4 degL); however, they are inaccurate for deeper-colored beers. Discussions with Roger Briess of Briess Malting Company indicate that these formulas are not held in high regard by professionals.

**INFLUENCE OF MALT** After the grain is steeped with water, it is allowed to germinate, then is dried in the kiln. It is in the kiln where coloring pigments such as melanoidins in malt are formed via the Maillard or browning reaction, a very common oxidation that occurs in many foods when they are cooked or exposed to air. By controlling the kiln temperature, the maltster can control the color of the kernels and hence their coloring potential in brewing.

Typical values for various malt types are shown in Table 1. A rule sometimes used by homebrewers is that the color contributed by a malt is equal to its concentration in pounds per gallon times its color rating in degL.

For pale beers this rule can give reasonable results. For example, 10 pounds of pale malt with color 1.6 degL in five gallons should produce a beer whose color is near  $1.6 \times 10/5 = 3.2$  degL. But for darker colored beers this rule can give erratic results. It also ignores the factors other than malt that contribute to beer color. Cereal adjuncts like rice make no contribution to beer color. Corn and unmalted barley have only a slight effect.

TABLE 1.

Typical degL values for different malt types

Malt Type	Color degL
US. two-row	1.4 - 1.8
US. six-row	1.5 - 1.9
Canadian two-row	1.3 - 1.7
Canadian six-row	1.4 - 1.9
German Pils	1.6
German lager	1.7
CaraPils	1.3 - 1.8
Wheat malt	1.6 - 1.8
Pale ale	3
Vienna	3 - 5
Light Munich	8 - 11
Dark Munich	18 - 22
Caramel	10 - 120
Chocolate malt	325 - 375
Black	475 - 525
Black barley	500 - 550

**INFLUENCE OF BREWING CONDITIONS:** Differences in brewing conditions can lead to substantial color changes in the finished beer, these effects being particularly important for beers at 5 degL or less.

**Water:** As the alkalinity of the water increases, so does the extraction rate of the coloring pigments in malt. The mash pH has the same effect, and increasing pH leads to worts with deeper color. Mash

*Baron Mind* is published by the Beer Barons of Milwaukee, a nonprofit organization. Club officers are President - Brian McManus, 545-2838, Vice President - Peter McMullen, 962-6834, Treasurer - Dave Vanderwegan, and Newsletter Editor - Jeff Brown, 961-2084. The *Baron Mind* is published monthly for members of the Beer Barons of Milwaukee thanks to the efforts of Jeff Brown, Rich Grzelak, and other club members who contribute articles. The permanent mailing address is Beer Barons of Milwaukee, PO Box 27012, Milwaukee, WI 53227.

Color increases with the amount of contact time with the grains. Thus, a prolonged mash will produce a deeper-colored beer than a short mash.

**Kettle boil:** The Maillard reaction also takes place as wort is boiled; therefore, wort color increases with boil time. A fact that is sometimes overlooked is that wort simmering has the same effect. The point is that this will lead to an incomplete hot and cold break, which in turn leaves more coloring elements in the finished wort. **Hops:** Some color is obtained from hops both in the kettle and in storage containers when post-fermentation hopping is used.

**Fermentation:** The proteinous matter produced during the cold break is full of coloring materials and, hence, removal of these materials will reduce color. It has been reported that color changes during fermentation vary with yeast strain.

**Filtration:** This can dramatically reduce color. It should be noted that a clear beer will appear to be lighter color than turbid beer.

**Oxidation:** At all stages of brewing, air pickup will deepen beer color. This is as true of hot wort production as it is of bottled beer with head-space air.

## Wort and Oxygen

by John Palmer

The use of oxygen in brewing is a two-edged sword. The yeast need oxygen to grow and reproduce enough to provide a good fermentation. When the yeast has first been pitched, whether to the starter or the beer, it needs oxygen to reproduce. The yeast makes use of the dissolved oxygen in the wort. Boiling the wort drives out the dissolved oxygen, which is why aeration of some sort is needed prior to fermentation. The yeast first use up all of the oxygen in the wort for reproduction, then get down to the business of turning sugar into alcohol and CO<sub>2</sub> as well as processing the other flavor compounds.

However, if oxygen is introduced while the wort is still hot, the oxygen will oxidize the wort and the yeast cannot utilize it. This will later cause oxidation of the alcohols which gives a wet cardboard taste. The key is temperature. The generally accepted temperature cutoff for preventing wort oxidation is 90F. Likewise, if oxygen is introduced after the fermentation has started, it will not be utilized by the yeast and will later cause bad flavors.

This is why it is important to cool the wort rapidly to below 90F, to prevent oxidation, and then aerate it by shaking or whatever to provide the dissolved oxygen that the yeast need. Cooling rapidly between 90 and 130 is important because this region is ideal for bacterial growth to establish itself in the wort.

Most homebrewers use water baths around the pot, or copper tubing Wort Chillers to accomplish this cooling in about 20 minutes or less. A rapid chill also causes the Cold Break material to settle out, which decreases the amount of protein Chill Haze in the finished beer.

Aeration of the wort can be accomplished several ways: shaking the container, pouring the wort into the fermenter so it splashes, or even hooking up an airstone to an aquarium air pump and letting that bubble for an hour. For the latter method, (which is popular) everything must be sanitized! Otherwise, Infection City.

\*\*\* And for those looking for other Brewing Books, here are some good ones:

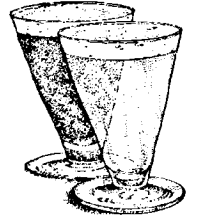
**The Complete Handbook of Homebrewing** - by Dave Miller A great book for all the basics, highly recommended for beginning and intermediate brewers.

**Brewing the Worlds Great Beers** - Dave Miller Another good book which explores the basics of beer making in a simpler approach than his Handbook.

**Brewing Lager Beer** - by Greg Noonan A more technical book for the brewer who wants to know Why... He covers the brewing processes in-depth.

## Primer on Czech Beer

By C. R. Saikley



A fresh Czech Pilsner, like Pilsner Urquell or Budweiser, is a stunning example of the level of refinement achievable in lager beer. Perfectly clean, crisp, and sparkling, these beers provide a venue to show off the two main flavor components of beer - malt and hops - with emphasis definitely on the hops. There are no traces of yeastiness, and fermentation by-products are kept to a minimum. The slow, cool fermentations, and even slower and cooler lagering produces a full flavored smoothness which can not be realized by any other means.

The pale lagers are always brilliantly clear and have a rich golden color. At 4 degrees Lovibond, they are a shade deeper in color than their Western European counterparts. They are typically served in tall, half-liter glasses, crowned with a white frothy head which extends well above the lip of the glass. The aroma, like the flavor, is purely that of malt and hops.

The prized hops of the Zatec region (Saaz in German) of Bohemia are renown the world over for their noble qualities, and Czech brewers use them liberally. The flavor profile is decidedly toward the hop end of the spectrum. The extremely soft waters of Plzen lend themselves to copious hopping rates, allowing a clean bitterness to come through in the finished product. Hop aroma is achieved exclusively by late kettle additions; dry hopping is not employed.

The full bodied character of these 12 degree Balling beers derives from pale Moravian and Bohemian malts. Some of the malt sugars are caramelized during the triple decoction mash and lengthy boil, which deepens the color slightly and adds depth to the beers' character. The only fermentation by-product present in perceptible amounts is diacetyl. The concentration is low enough that it is not distinguishable as a buttery note, but instead it gives the beer a fuller palate. Even though the malt charge is quite substantial, its role is essentially that of providing a foundation for the expression of hops, the dominant element of Czech beers.

While the beers of the Czech Republic may not be as diverse as those of other brewing nations, the beers that are produced there are classics. They are the most imitated beers in the world, but most imitators pale by comparison. There are no finer Pilsners to be found anywhere.

## 15% Discount on AHA Membership

Don't forget to mention you're a member of the Beer Barons of Milwaukee when you join or renew your membership with the American Homebrew Association. We are an affiliated club and that entitles each of our members to a 15% discount on membership fees to the AHA. Mention Beer Barons when you join or renew.



# 17th AHA National Competition Begins April 1st, 1996

It's the largest homebrew competition in the world, and it's fun. With 3500 entries expected in 1996, representing the participation of approximately 1200 homebrewers from all over the world, the National Homebrew Competition is a terrific opportunity to have your homebrew evaluated at the national level.

Changes this year include: First, second, and third place awards are now available in each category at each First Round judging site, and AHA Registered Homebrew Clubs will earn points toward the Homebrew Club of the Year award, based upon these winners. Plus, AHA beer style guidelines have been reworded and expanded to more closely match current beer style

literature and industry standards. The competition is a tremendous undertaking and relies on the dedication of volunteers. Call the AHA for more information or on how you can become involved.

## Homebrew Bayou: New Orleans - 1996 Conference

The big easy city of New Orleans, LA, will be the site for the AHA's 1996 National Homebrewers Conference, June 5-8, 1996. The AHA and the Radisson Hotel will be hosting more than 700 homebrewers. You and your fellow brewers can join in the festivities, some New Orleans hospitality, educational sessions, and some homebrewing fun.



### Membership Information

Annual membership dues are ten dollars. With the increase in cost of paper, printing, and postage, this doesn't even cover the cost of this newsletter. Your participation and attendance at meetings is needed for your club to continue. The \$5.00 fee for each meeting attended is the only way we can pay the remainder of the newsletter costs as well as the beer at meetings, and the other club expenses. Membership dues can be paid at any of the monthly meetings or you can send a check for \$10 to the Treasurer, Milwaukee Beer Barons, PO. Box 27012, Milwaukee, WI 53227.

NOTE: The date that appears on your newsletter address label indicates the end of your membership period. To avoid missing any issues, please remember to renew -- we can't afford to send out individual

## Support Clifford's Supper Club with your patronage.

**Clifford's allows us to use their banquet room at no charge to the Milwaukee Beer Barons. Our support will help show our appreciation.  
PLUS - The food is VERY GOOD!!**

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Milwaukee Beer Barons

