Baron Mind

A Monthly Publication for the Beer Barons of Milwaukee

Dedicated to the Education and Enjoyment of Fermented Malt Beverages

May 1995

May Meeting

The May monthly meeting is at 7:30 PM on May 24th, at Clifford's (10418 W. Forest Home Avenue, Hales Corners). As usual, the meeting is $5.00 per person.

Meeting Programs

May 24th	**John Hammacher from Beer Capitol Distributors**
June 28th	**Homebrew Night, Officer's Brew, and Left-Over Commercial Beers**
July 26th	**Waukesha's New Brewery**

Calendar of Events

May 29th	**Rauchbier Roundup Club-Only Competition**. Ithaca, New York. Entries due May 22nd. Contact James Spence at (303) 447-0816, Ext 121
June 14th to 17th	**Planet Beer. AHA 1995 National Homebrewers Conference,** Baltimore, MD. Contact Nancy Johnson at (303) 447-0816, ext. 131; or nancy@aob.org
June 24th	**First Small and Tiny Homebrew Competition.** HWBTA Sanctioned. Entries due June 10. Contact Spencer Thomas at (313) 994-0072; or spencer@umich.edu
July 7th	**Fall Issue of *Zymurgy* is mailed** - Please allow 4 to 6 weeks for delivery due to new improvements adopted by the Postal Service to speed handling.

What;s Hoppening!

A Monthly Column
by Peter McMullen

Greetings, Hop Heads! At this month's club meeting we will have John Hammacher from Beer Capitol Distributing as a guest speaker. He will be showcasing some of their many products and discussing the business of beer distributing. John will be featuring beers from Sierra Nevada, new brews from Pete's Brewing, Capitol Brewing, and Sam Adams. He will also throw in an import to taste.

In June, remember it is Homebrew Nite. Officers will be bringing a nice weiss and a not so bad bitter. This meeting is a good chance to have your beers tasted by others before the State Fair Competition. We will also have a couple of cases of commercial stout - because I like it.

By the time your receive this newsletter, I will have appeared on a segment on TV6 News about the explosion of microbreweries. Hopefully they will have mentioned our club's name. But is case they didn't, I wore my Beer Baron T-shirt for all the city to see. I would like to take this opportunity to remind you that if you don't already have one of our custom designed, multi-colored T-shirts, we still have a few left. They will be for sale at the next meeting for only $10.00 each.

Madison Pub Crawl
Saturday June 10

We will be leaving from the Goerkes Corners Park and Ride lot at 10:45 AM. The cost will be $18.00 per person. This price includes the bus ride, cost of the tours, and a tasting glass at Capitol Brewery.

Leave Brookfield	10:45 am
Randy's Fun Hunters Brewery (Eat and Taste):	Noon to 1:30 PM
Capitol Brewery	2:30 to 3:30 PM
Angelic Brewing Co	4:15 to 5:15 PM
Great Dane Pub and Brewery	5:30 to 6:30 PM
Arrive in Brookfield	9:00 PM

The bus company does not allow Glass or Kegs. They will let us have Korny Kegs and plastic glasses. Of course, you can also get a Carbonator and use 2l plastic bottles! Cans are OK also if you want them. Call your friends and get them to join us! We will be tasting beer and having a great time! Seating is limited to 46 people and a couple of Korny Kegs! Call Jeff Kane at 414-238-9073 or The Frugal Homebrewer, Mequon at 414-241-9700 for information or reservations.

BEER BARONS OF MILWAUKEE

Open Fermentation

by Jim Busch

Jim Busch is an electrical engineer developing real time systems for NASA. He has been an all grain brewer and beer traveler since 1988. When he is not beer hunting, he can be found on the Internet at: busch@daacdev1.stx.com

This article is going to cover the concepts of using open fermenters in brewing. The debates over open versus closed fermentation will no doubt continue as long as there are interested brewers to debate. I intend to present some of my feelings, opinions, and experiences with using open fermenters, and point out some of the inherent pros/cons of using this technique. I want to emphasize one thing about this issue: the choice of fermenters is not going to be *the* deciding factor in your finished product, many other factors will play a more important part in the character of your beer. Namely, malt choices, mashing programs, and above all, yeast strain/viability/cleanliness will be the dominant influences on the finished beer.

Having said this, there are instances where breweries who changed from open fermenters to closed unitanks have noted distinct changes in the perceived quality of the beers, when judged by experienced taste panels.

[1] Open fermentation is a concept that most homebrewers think is a sure route to infected beer, or as something to be employed in some dark cellar in an old European brewery. I say nonsense! Think for a minute about some of the best world class beers and then think of how many are made using open fermenters: Sierra Nevada, Anchor, numerous English, Belgian and yes, even German brewers use them. It is a common sight in Bavaria to see a brewer mucking around in the thick krausen on top of the open fermenter, collecting samples, skimming yeast, generally doing things that homebrewers are told to avoid. Eric Warner has noted in his excellent book on Wheat beers that open fermenters are the preferred method of German weizen production
[2], and that when open fermenters are used the yeast can be repitched for many more generations than when a closed fermenter is used.

So what's an open fermenter? At the simplest, it is a vessel with an open top. Depending on the size of the fermenter, they are often covered by some form of lid. The bigger versions are truly open, large shallow vessels, some are lined with stainless steel or an enamel like coating that is usually used over a concrete block foundation. Often the fermenters are just large stainless steel cylinders. Most, but not all, have some form of attemperater device, to combat the temperature rise during ferments. This can be in the form of exterior jacketing, or metal piping that is immersed in the wort, cold water or glycol is pumped inside the pipes, cooling the ferment. Probably the most classic open fermenters are the Yorkshire Squares used at the Samuel Smiths brewery in Tadcaster, England. These are made of flat slate walls, sealed together, with a collecting lid where the excess krausen is contained.

OK, so your thinking open fermentation only works in big breweries since they are filtering the air, and keeping the whole room under positive pressure, and nobody is allowed in. Yes, and no. Sure, lots of breweries go to the extreme of maintaining a separate room with filtered air. Lots more don't do anything. Certainly, the breweries in England that I visited never went to the extreme of filtered air, nor did the breweries in Bavaria and Belgium. Belgian methods of brewing may seem strange , but the dominant flavor profiles found in Belgium beers are a result of the choice of a yeast strain(s) that throws high levels of esters and phenolics, and rarely a result of some infection in the fermenter (even though this is the way to produce lambics, the word infection is a misnomer in this context). Certainly, the Bavarian brewmasters would recoil in horror if any foreign bacteria or wild yeast were to be found in the open fermenter, and in practice, they are not a problem.

I did not always use open fermenters, the first hundred or so of my beers were made with a "closed carboy" system. I put closed in quotes since the carboy can be fitted with a blowoff tube, resulting in a kind of hybrid closed/open fermenter. Since fall '92, I have been using a open fermenter exclusively, and I am a devoted fan of the concept. My fermenter is a stainless steel cylinder, of roughly equal height to width, with a heavy lid. If you brew with a 10 or 15 gallon stainless steel kettle, this can double as your fermenter, once you remove the hot break. Some brewers emplc modified 1/2 Bbl Sankey kegs, and these too make excellent open fermenters. I have also read of brewers modifying Golden Gate kegs and using these as fermenters. The least desirable, but easiest to start with, is the plain plastic bucket. The reason I say least desirable is that cleaning plastic is more difficult than stainless, and the inevitable scratches in the plastic walls can be harder to sanitize. Even so, I know of an award winning homebrewer who ferments in food grade plastic trash cans, and another 2 Bbl brewpub who ferments in large High Density polyethylene (HDPE) containers.

I have found that as you increase the brew length (volume of beer produced), it is easier to fabricate some sort of fermenter that can hold the entire batch. In this way, you will be limiting the number of vessels to sanitize and clean up. It is far cheaper and easier to fabricate or modify a container to be an open ferementer than to make a closed one, particularly as the volume increases. An important consideration when sizing the fermenter is to account for a large amount of krausen that can develop during the ferment. Head space of 30% is optimum, but less can be used, with the result being some possible loss of product (which also occurs when using the blowoff carboy method).

Of course, there are some limitations to using open fermenters. I believe they are no more prone to infections than using carboys, but there is an increased chance for infection if one has numerous fruit flies or other animals around the fermenter, provided the lid is

***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* - Bill Myers, *769-0732, 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.*

off. Probably the biggest limitation is that of time, I do not advise leaving the beer in the fermenter for more than 2 weeks. Of course, any ferment should be racked by the second week, so maybe this isn't such a limitation after all. The reason time is more important in open fermenters is not so much the proximity of the still beer to dead yeast, but of the danger of oxidation reactions occurring as the beer sits. In a closed system, this will not be a problem, but as long as the beer is moved in a timely manner, the CO2 produced during open fermentation will protect the beer.

Another important factor to consider is the overall cleanliness of the fermentation area. It need not be sterile, but a reasonable degree of cleanliness is in order, in particular for fermentation inside of a refrigerator. Many brewers use a temperature control device to moderate the ferment temperature inside of a refrigerator. If you use an open fermenter inside of a refrigerator, be sure to clean all obvious sources of contamination and general dirt. Some may even want to sponge down the interior of the refrigerator with a mild sanitizer such as chlorine/water. At the very least, all spilled trub, yeast and wort should be thoroughly cleaned up. Household pets should also be prevented from crawling into the fermenting beer, they may like the results too much! My fermenter is located in the basement, a few feet off the ground, away from large drafts and any foreign debris sources.

Heres a summary of how I use my open fermenter. Since I use a stainless fermenter, I don't want to use a chlorine based sanitizer, due to problems with corrosion. So, I prepare a solution of Iodophor, at 12.5 ppm (1 oz in 10 gallons), of a few gallons. Using rubber gloves, I sponge the sanitizer over the sides of the fermenter. I let it run out the drain, then back over the sides of the fermenter. I also run Iodophor through my wort chiller into the fermenter, followed by a hot water rinse. Once the hot water is drained, the vessel is ready for cast out wort. I fill the fermenter from the wort chiller, oxygenate and add thick yeast slurry. As in any fermentation, there is no substitute for pitching enough viable clean yeast.

The key to success with an open fermenter (or closed) is a sanitized vessel, and an adequate amount of pitching yeast. Remember to use significantly more yeast if the original gravity of the wort is higher than 1.060. If one is using enough yeast, visible fermentation is evident within 12 hours (ale wort, fermented between 60-70 F). As soon as the fermenter is full and the yeast is pitched, place the lid on. Once the fermentation is generating a thick head of krausen, I have found it helpful to leave the lid partially cracked, allowing an airspace for the large amounts of CO2 to vent.

With the ferment in high krausen, the classic dense rocky heads will form. At this stage, trub will be scrubbed from the ferment, and rise to the surface, along with other solid matter that was carried over into the fermenter. This scum can be skimmed off with a sanitized spoon (I leave a long handled stainless steel spoon in some Iodophor and just rinse it off when needed). The ability to skim the trub and yeast that rise to the top of the fermenter is one of the main advantages of open fermentation. Don't overdo it, but about once a day or every other day, depending on the rate of ferment, skim the top. Many ale yeasts tend to flocculate at the top of the ferment as the ferment diminishes. This yeast is excellent to skim and store in a sanitized container, in a cold fridge (as close to 32F as possible).

When choosing yeast to save, be sure to wait a few days into the ferment so that the trub is scrubbed away and the harvested yeast is clean. As the ferment dies down, keep the lid over the vessel. Another great plus of open fermenting is the ease of dry hopping. What I do is let the main fermentation subside and when the yeast clumps to the surface, skim as much off as possible, then add the loose whole hops (I find that whole hops give better aroma and are easier to use with an open fermenter). Allow at least 3 days time for the dry hopping to take affect. I would avoid leaving the beer in the primary for longer than 2 weeks, and aim for 10 days when dry hopping, and a mere 5 days otherwise.

These are optimum figures for ale ferments, and are often not realistic in homebrewing, the primary cause being inadequate oxygenation of the cast out wort, and/or insufficient yeast cell densities/viabilities in the pitching yeast. To rack off of the hops, use a sanitized copper/brass or stainless "choreboy" scouring pad, held over the racking cane with a rubber band. Alternatively, the hops can be removed with a sanitized strainer, provided a minimum of air is introduced to the still beer.

Important points to remember:

Pitch plenty of healthy yeast slurry, between 1/2 and 1 oz. of slurry per gallon of wort, or at least 1 QT of yeast starter per 5 gallons wort. Professionally, pitching rates are on the order of 1/2 to 1 pound of slurry per barrel of wort.

If you have a way to increase the dissolved oxygen levels f the wort, do so. At the least, splash the wort when filling the fermenter. Using an airstone and filtered air for the first few hours is even better.

Keep the lid on most of the time. This helps to trap the O2, and since the finished still beer will have around 1 volume of dissolved CO2 in solution, there will be a thin blanket of CO2 over the beer, protecting the beer from detrimental oxidation reactions. Once the ferment is producing large quantities of foam/krausen, it is good to leave the lid cracked, but as soon as the krausen begins to subside, keep it covered. To harvest yeast, wait for the initial fermentation to scrub the dark trub and remove this trub with a sanitized spoon prior to harvesting the yeast. Some yeasts can be stored for 2-3 weeks in a sanitized container, preferably in a cold 32F refrigerator. Some yeasts are quite prone to mutations, and if this is the case, storing for 10 days is the upper limit. If the yeast is to be stored for longer periods, it is advisable to feed fresh wort into the container, and allow another period of fermentation to occur prior to pitching into a fresh batch of wort.

Fining agents, such as isinglass, can be added directly to the primary fermenter, provided the desired degree of attenuation has been achieved. Polyclar, or PVPP can also be added directly to the fermenter, although these products should be filtered from the beer prior to serving.

Lagers can be made using open fermenters but the timing and temperature control issues make it more difficult to do than ales. When fermenting lagers in a refrigerator, I would recommend keeping the lid on for the entire primary, and racking the beer into the lagering vessel as soon as primary fermentation is complete, or 90% complete.

Conclusion:

Fermenting in an open vessel can be an effective and convenient method of beer production and yeast harvesting, especially when brewing ales. It is an easy way to skim trub that rises to the surface of the ferment, and can be a cost effective method to increase batch sizes.

Miller Speaks About Entry into Specialty Beer Market

from *High Lites*, an Employee Publication of Miller Brewing Co.

Uncommon, but logical. That's one way to view Miller's move to create the American Specialty and Craft Beer Company subsidiary.

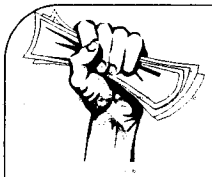
It's a lot like a holding company for independently run breweries," explained Scott Barnum, Miller's general manager - American specialty/craft beers.

"We have a subsidiary to maintain the entrepreneurial spirit and to operate a little more independently from the Miller mainstream," Barnum said.

"Miller is committed to be a champion of the American specialty beer category. We think it's beneficial for the entire beer industry. Our role is to expand the awareness, trial and appeal of specialty beers specifically made in America," he said.

"They include craft beers that pyramid from the relatively large Leinenkugel's at the base, and move up to the smaller micro beers like Celis," Barnum said.

Editor's Note: Celis Brewery, of Austin, Texas, which was recently acquired by Miller, produces Celis White (a Belgian 'Wit' style), Grand Cru (a strong ale with 9 percent alcohol by volume), Celis Raspberry (a fruit beer), Celis Pale Bock (a hoppy beer with the flavor of caramel malts), and Celis Golden, (a Czech-style pilsner). Leinenkugel's, of Chippewa Falls, produces Leinie's Red and a dark, malty Winter Beer.



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 pays the remainder of the newsletter costs as well at for the beer and 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 reminders.

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Milwaukee Beer Barons
P.O. Box 27012
Milwaukee, WI 53227

Brian & Laura McManus
8916A W. Howard Ave.
Milwaukee WI 53228

Membership Expires: Dec-95

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