

# The OVHA Tap

Vol 10 No. 2

February 2006

Meeting Wednesday Feb 22, 7:00 pm at Germania Mannerchor

Featured Beer: Barley Wine

Meeting Subject: Yeast

Beer evaluation schedule:

January 2006: Stout

February 2006: Barley wine

March 2006: Scottish Ale

April 2006: Pale Ale

May 2006: Bock

June, July, August: Social meetings, no evaluations.

September 2006: Wheat beer

October 2006: Pumpkin Ale/Vegetable/Fruit beers

## Brewer's Musings

We've been busy the last few weeks at the Brewery on Barton! We finished some modifications to the brewing machine, namely relocating the pump and installing a new piping manifold to accommodate the new 35 gal stainless steel boiler we acquired. Lots more valves and tubing now, but we can manage somewhat larger batches now, and can pump out of the boiler directly into carboys up on the shelf so we don't have to drag them around anymore. Should reduce the breakage and backaches, anyway.

As far as beer goes, we made a "yellow beer" in December that we like so much we repeated it -- Maris Otter malt, Northern Brewer bittering hops, and Tettenang finish hops, California or Munton's ale yeast.. Just about one or two glasses left in the keg, it was wonderful, but the bottled stuff seems to have a bit of autolyzed yeast flavor, alas. The carboy we bottled out was pitched with Muntons, and seems to have sat too long before we bottled it. The California Ale yeast from Whitelabs worked fine.

The first large (15 gal) batch was another "yellow beer", same basic recipe as the first one, except that I was anticipating 20 gal and hopped for that volume, and ended up with just over 15, so it may be a bit hoppier -- not much of a problem at the Brewery on Barton! Taking forever to ferment out, though, we ran it two weeks ago and it's still not done, although the SG is dropping nicely. Too much foam to transfer to 5 gal carboys, though. Should be done on Sat,



## Meeting Schedule 2006

February 22nd at Germania 7 pm

March 29th at Germania 7 pm

April 26th at Germania 7 pm

May 31 at Germania 7 pm

June to be decided

July to be decided

August to be decided.

## Brewer's musings, Cont

and will get transferred anyway since we need the carboys! This one was pitched with California Ale yeast, should be very good. Nice top fermentation, one of the few I've seen on a first pitching -- usually requires more yeast that you get in the liquid package.

The next beer was a plain lager -- Turbo Pils with a 120 F protein rest and 150F mash, hopped with Northern Brewer and Hallertau hops. Very light in color, nice initial SG (54), and fermenting very nicely. We transferred it on Thursday, should be ready to lager in a week or two. We plan to let the bulk of it (10 gal) lager for a least a month, hopefully for two or more, before we drink it. The plan is to transfer to a sanitized keg, pressurize to 10 psi or so, and store in the fridge. Hopefully we won't run out of beer and drink it before it matures!

Last weekend's project was a Karmeleit clone. I looked up all the recipes I could find on the internet and decided that none of them were what I thought was right (mostly because Karmeleit is supposed to have malted and unmalted barley, wheat, and oats in it, and none of the published recepies had more than 1/2 lbs oats in them). So I invented one of my own -- 5 lbs flaked wheat, 5 lbs malted wheat, 24 lbs pilsner malt, and 2 lbs flaked oats, aiming for a initial SG of 80 in ten gallons. I'd been advised that using that much wheat and oats was likely to cause a stuck mash, so we ran a one hour protein mash at 120 F -- worked like a charm, good recir and nice and clear. Unfortunately, it got VERY slow once I reached mash temp -- all those oats must have glopped up. Had to cut the mash a couple times, and backflush the mash tun once or twice, but it finally ran, if somewhat slowly. We also ended up with too much mash liquor from backflushing

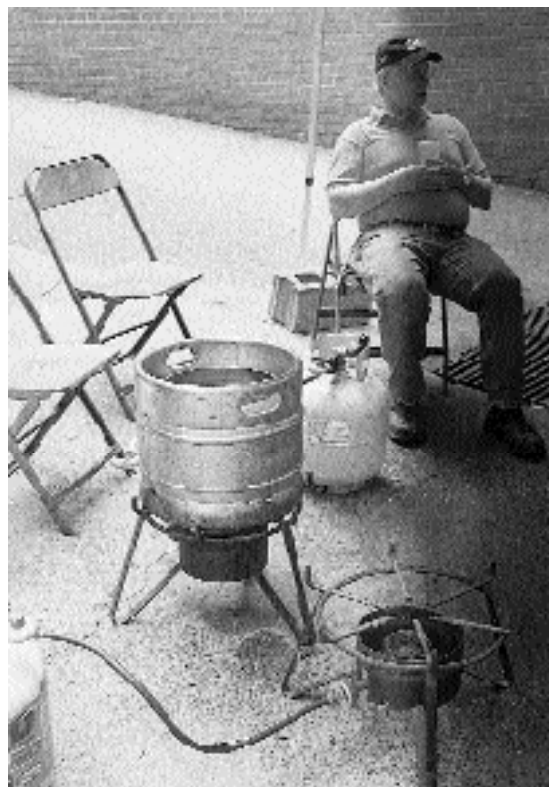
The sparge took quite a while as we wanted to recover all the extract possible and it was running slowly, and we ended up doing a three hour boil to get rid of all the extra water, but it looked fine and had a very nice break. Added some orange peel and coriander at the end of the boil, and hopped with some old fuggles hops plus a small amount of Norther Brewer. We used Jim's old cylindroconical fermenter and a glass carboy for the primaries -- the cylindroconical is slow for some reason. Looks great, though, and should be finished and aging in a couple more weeks.

Plans for the next couple weekends are more lager, a red ale for St. Pattie's day, and a pale ale for a friend of mine. We also are thinking of making an Oktoberfest and lagering it for the whole summer. There are also plans for a Guinness stype dry stout for competition and probably some more of my sweet stout recipe (it vanishes pretty quick at the Brewery!).

We also have a wild idea to mash an entire 50 lbs sack of grain and see what happens -- we ran a 40 lbs mash last weekend, so the only problem would be inadequate sparge water.

A nice barley wine and a winter warmer, to rest all summer and fall might be a good idea, along with more of the usual pale ale and lager -- lager season will soon be over at any rate.

If the Karmeleit turns out, we will probably repeat it at least once more and bottle it for winter enjoyment.



President Jim hard at work

## Technical Notes: Yeast

Ah, yeast, that mysterious critter that converts sticky wort to the ambrosia of the Gods....

What would beer be without the magic of yeast? No kick, most likely! Think of the hop content required to make it drinkable if most of the sugar wasn't converted to alcohol!

Joking aside, yeast is one of the very important constituents of beer, even though nearly all of it is removed after it's done its work. Much of the flavor (or lack of specific flavors) of beer is due to the yeast, since yeast not only ferment maltose and other sugars into alcohol, they also produce varying amounts of other compounds that remain in the beer. The most notable of these are diacetyl (buttery taste) and various phenolic alcohols that produce spicy or clove like flavors. Wild yeast, in fact, can produce rather horrible flavors due to high production of "side reaction products" like phenolic alcohols and esters.

Other side reactions produce esters of various sorts (some nice, some, well, fecal in nature!) and other subtle flavors in beer.

There are several types of yeast used in brewing, usually characterized as top fermenting (*Sacromyces cervisea*) and bottom fermenting (*Sacromyces Carlsbergensis*), although the actual speciation of these two is rather problematic -- neither is actually a wild yeast, I'm sure.

Top fermenting yeast usually like warmer temperatures (60F to 70F), tend to be sticky and float on top of the foam on the primary fermenter, and usually produce considerably more esters than bottom fermenters. They can be difficult to keep in suspension, and some varieties require "rousing" to keep them from sitting on the bottom of the carboy as fermentation slows, making the secondary stage very long unless they are stirred up. They also may autolyze (burst from starvation) more easily due to the higher temps employed in their use.

Bottom fermenting yeasts tend to sit on the bottom of the carboy rather than sitting on the top of the foam, reproduce more slowly, and work better and more cleanly at lower temperatures, often 45 to 60 F. Newer strains have been bred to stay "clean" at higher temps to reduce the fermentation times, as it can take several weeks to finish primary fermentation with an underpitched bottom fermenting or lager yeast.

Quite aside from these broad descriptions, yeasts are now available in a wide variety of types. Nearly all commercial breweries use their own yeast isolates, cleaning them and re-culturing periodically to preserve the desired characteristics, and many of these are now in circulation as commercially available live or dry yeast for homebrewing. Since yeast contributes quite a bit to the flavor profile of beer, particularly ales, the availability of "original" yeast can help reproduce a particular style of beer.

The amount of yeast that gives a good healthy fermentation is usually somewhat more than you get in a live culture or a package of dry yeast, although I've used them both as is with very good results. Growing the yeast for a few days on some clean, unhopped wort will give you quite a bit shorter fermentation times and shorter lag periods, both usually desirable. However, the more yeast there is in the carboy at the end of fermentation, the more likely yeast autolysis becomes, so be careful.

Lagers benefit from much higher pitching rates than ales -- a starter can shorten primary fermentation by a week.

Re-using yeast: Probably the best fermentations I've ever gotten were when I racked a beer out of the secondary and racked a fresh wort directly onto the yeast in the bottom. Plenty of fresh, healthy yeast gives a fast, clean fermentation, and if you haven't gotten any contamination, there will be no differences between the two beers. However, there are a couple problems with this procedure. First, you become limited to one beer or beer style using the same yeast (or several) and have to be able to brew regularly on the same schedule as the fermentation. Easy for a brewery, somewhat more problematic at home. Second, you are never going to have pure, uncontaminated yeast, so eventually you will get too many lactic acid bacteria in the culture and it will start ruining beer. You can re-use a good yeast a couple times by using the slurry from the secondary to pitch a new batch several times, but a better method is to re-culture the yeast off the bottom of a bottle from a batch using that yeast. Yeast on the bottom of the bottle is not dead, it's inhibited by the carbon dioxide pressure, so will take off growing and fermenting immediately on contact with fresh wort, and until you drink the last bottle, you are still using the first generation of the yeast!

### Notes on pitching yeast for good results:

The larger the number of yeast organisms in a wort, the faster it will ferment. Oxygenation of the wort will cause more reproduction of yeast (at the expense of a bit of extract), and starting a small fermentation (as starter) in a quart of so of clean wort will also both increase the number of yeast cells pitched and get the little beasts cranking along nicely before you toss them into your nice, cool wort.

Both live cultures and dry yeast benefit from a starter. A starter is required if you use a "smack pack" -- there are only a few cells in there to start with. Plan on a week for the starter to work, ferment out the starter, and settle out. You can discard the "beer" and pitch just the yeast slurry

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#### Yeast starter instructions

Make a quart of wort by boiling a quarter pound or so of dry or liquid extract in a quart of water. Allow the trub to settle out, then pour into a sanitized quart jar, leaving some space at the top. Cool to 70F or less, either by sitting or in cold water. Pitch the yeast, stir, and allow to ferment until the yeast settles, keeping the jar covered with a loosely screwed on lid. Pour off the "beer" and the yeast is ready to use. You can hold it for a couple days in a sealed jar in the fridge, no longer (it autolyzes). You can add more wort if you want and up the number of yeast cells some more. You can pitch the whole starter in if the "wort" is compatible with the style beer you are making.

For dry yeast, I like to take a quart of wort out of the boiler, cool in a quart jar with a cold water bath, and pitch the dry yeast while the main wort is cooling -- takes an hour or so at least with my immersion chiller. The yeast will have dispersed and started working nicely by the time the main wort is ready to pitch.

#### Upcoming events:

Big Brew day will be in May, we plan to have an event similar to last year. Hopefully, it won't rain this time (I did get my camera fixed after it got rained on!). Plan to spend the day making lots of fine beer again.

Save your best brews for the State Fair -- they need to be ready to ship in June for judging in July. We had a Silver and a Bronze medal last year -- we need to give the Foamblowers some competition! Note that it helps to brew strictly to style guidelines, as very good beer that doesn't fit won't win!