



Hangtown Brew Noose

www.hazeclub.org

Hopfen und Malz,
Gott erhalz!

MAY 2010

Volume 47



PRESIDENTS MESSAGE



Spring already. So many beers so few brew days. I find myself pondering National Homebrew Day and the White Labs Brew and wondering what I will do. Should I join the Big Brew system or should I go my own way? Summer is coming and I need some daily beers. I have wanted to make another Classic American Pilsner. Jeff Renner of Minnesota had a Zymurgy article on using a double boil to mash the adjuncts. I think it is time to implement this approach. I tried it

last month for my annual Maerzen and it was easy to perform and I think I got good results. That leaves the White Labs decision. I have a short list of AoB shortages and think it might be another lager, a Munich Dunkel would be good or maybe a common with the warming weather. I hope that all you members are having similar conversations. It is a good time to brew, summer is coming and we want to see you participate in these "Team" brew days. They are always an enjoyable experience and they are a great opportunity to see what others are doing and discuss beer and brewing.

Stan Backlund

UPCOMING EVENTS

(Check the calendar for all specifics www.hazeclub.org)

- May 1:** National Homebrew Day
- May 12:** Club Meeting, Brick Oven Pub; Yeast Washing by Steve Seeley
- May 22:** Club Brew with Chris White of White Labs Yeast. John Pyle's house.

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HAZE is dedicated to fostering social and educational opportunities for homebrewers in the foothills.

Brew Noose Editor: Michael Frenn



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Technical Corner It's All About The Yeast

(Given that Chris White of White Labs yeast will be brewing with us late this month, yeast seems a suitable topic for this month's Noose! – Ed)

*“A barrel of malt, a bushel of hops
You stir it around with a stick.
The kind of lubrication,
that'll make your engine tick”*

These lyrics from a drinking song celebrating the accomplishments of Charlie Mops (the man who gave us beer) actually include the addition of yeast to the brew. Use of the “stick” was known to be critical for a successful fermentation, although it was not understood why “godisgood”, as the stick, which was often passed from generation to generation, was known. It turns out that yeast cells were trapped in the pores of the wood and inoculated the cooled wort.



Yeast is a single celled organism of the fungal variety and occurs naturally in the environment. For brewing, there are generally two types of yeast, ale and lager, which are distinguished by their preferred fermentation environments and the characteristics they impart to beer. Ale yeast, *Sacharomyces cerevisiae*, is top fermenting, works best at warmer temperatures (relative to lagers) of 62 – 70F, and often imparts fruity esters (dependent on the temperature) characteristic of many ales. By contrast, lager yeast, *Saccharomyces Uvarium (Carlsburgensis)*, ferments cooler, cleaner, slower and on the bottom. Lager yeast is also able to fully ferment the large sugar chain trisaccharide raffinose. There are several “hybrid” yeasts which demonstrate characteristics of both ales and lagers. For example, the yeast to make a classic “steam’ beer is a bottom fermenting lager yeast that ferments quite cleanly at 62-64F. Traditional Kolsch is made with a top fermenting ale yeast that produces a lager like beer when fermented at cool temperature (60F).



The yeasts employed to produce Belgian beers are of the ale variety, but are specialized to the extent that they produce very specific ester and phenolic profiles which give these beers their traditional bubble gum and spicy clove-like aromas and flavors. Some of these yeasts require very high temperatures (80F) to produce the desired results (eg., Saison). All yeasts used in brewing have been carefully selected over time for purity of culture and results, although traditional lambics still rely on wild yeasts for ferments (hey, you get what you pay for, IMO!).

Most yeast are now available as both pure liquid cultures and dry packets. The liquids offer the advantages of variety and purity, but they are more expensive and almost always require a starter. The dry yeasts available have less variety and are not always as pure as the liquids (although this has improved greatly), but are about half the price, have a much longer shelf life and often can be simply sprinkled on top of the wort making them very easy to use.



The most important considerations in using yeast are viability, pitch rates, aeration and temperature. Yeast is a living organism and as such has a limited shelf life. Proper storage which includes constant cool temperature is essential. Most liquid yeasts either have a date of manufacture or a "use by" date. Dry yeast will generally have a long shelf life, but good storage practice is important. There are two ways to evaluate yeast viability. Make a starter (See the August, September and October 2008 issues of the Noose for details). This will give you an idea of how healthy the yeast is as well as provide more cells for your pitch. Wyeast gives you an alternate method of evaluating yeast health via their "Smack Pack"™, which is a sealed envelope containing yeast and an inner packet of starter wort. Smack the pack to break the

inner wort bag, and as the yeast consumes the wort it gives off carbon dioxide and causes the pack to swell (oh my!).

You also need to be concerned about the pitch rate which is the number of cells added to the wort; most homebrewers under pitch which can lead to a number of problems including excessive ester production, poor attenuation, etc. There are exceptions to this (see "Heave a Hefe!" in this issue) The pitch rate is a function of total wort volume and total wort gravity, with larger volumes and/or gravities requiring more yeast to do the job, There are a number



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of on-line pitch rate calculators that can the homebrewer can use. Note, for any beer with an O.G. over 1.050, you will likely need to pitch two vials (Whitelabs), 2 Smack Pack™s, or make a starter.

Yeast requires sugar, oxygen, nutrient and the right temperature to ferment. For the most part, your wort will have sufficient nutrients and additions are not necessary. It is not a bad idea to throw a piece of copper tubing into the boil as this releases zinc and magnesium in small quantities, both of which are essential for yeast health. Aeration can be accomplished by splashing the cooled wort as it goes into the fermenter, adding pure oxygen using an oxygen stone or by pumping air into the wort using an aquarium pump fitted with a microbial (HEPA) filter. Like pitch rate, the higher the OG, the more aeration is required. I splash wort on the side of a funnel as it goes into the fermenter and have had very good results at all levels of OG.

Finally, temperature is very important for a healthy ferment. The pitching temperature at a minimum should be below 80F. Any higher, and you risk killing off the yeast, or greatly reducing the viability of the population. Ideally, cooler is better. In other words, pitch your yeast into a wort a few degrees cooler than you plan to ferment. Even better is to have your yeast at this same temperature; it is thus acclimated and less likely to experience a shock. Then gradually increase temperature 1-2 degree F per day until you reach optimum. The ferment temperature is particularly important during the first few days. Cooler temps will generally produce cleaner beers with minimal ester and fusel alcohol production. However, if too cool, the yeast may cease fermenting; rewarming will generally bring things around nicely. Towards the end of fermentation, both for ales and lagers, bringing the ferment up to 68-70F will provide a "diacetyl rest" and encourage the yeast to absorb the diacetyl it produced during fermentation. Diacetyl (die-as-suh-tul) is what gives beer a buttered popcorn or butterscotch aroma and flavor; this is generally a flaw, with few exceptions.

There are many resources available on yeasts. Start with yeast manufacturers; they have all of the technical specs and are familiar with their products. Get to know your yeasts. Most of them have very particular behaviors. I generally choose yeasts for their attenuation property (e.g., how dry they will make the beer) as well as their flocculation tendency. Flocculation is the dropping of yeast out of suspension. The greater the flocculation, the clearer the beer. Don't be afraid to experiment; you'll be surprised at the results.
Prost!

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Profiles in Barley **Heave a Hefe!**

Hefeweissen, or Weiss bier, is a delicious, easy to brew beer that is excellent for the warm days of summer. A style which came very close to being extinct, it was revived in the early 19th century by Georg Schneider and now accounts for 22 percent of all of the beer produced in Bavaria. There are several advantages to brewing a hefeweissen, including a quick turnaround



and no need to filter. If you keg, it is quite possible to brew a hefe one weekend drink it the next. Hefeweissen has several unique facets to it. First, it is one of the few German ales (most German beers are lagers), it benefits from an underpitch of yeast (this is helpful to achieve the delightful banana esters and clove phenols), and it benefits from a single decoction, not because the malt is under modified, but because the decoction provides the rich breadiness that helps to make the beer so delightful. Hefe can be made either with extracts or all grain. It requires a traditional German wheat yeast and should be carbonated to 2.5 to 3 volumes to yield the desired effervescence.

See Recipe on Page 6

Here are what Germans actually say about Weissbier:

“Weissbier with a bit of yeast is simply chic, healthy and easy to digest.”

“Up until a few years ago, we bowlers drank pils or normal keg beer almost exclusively; now most drink Weissbier. The consumption level of beer has become less and the number of schnapses has been reduced considerably.”

“If we drink 2 pints of Export in the morning, we’re tired; with Weissbier in the same quantity, this isn’t so.”

“The nicest thing about Weissbier are the burps, which also bring the bad air out of the stomach.”

True testimonials, to be sure!!

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5 Gallon Hefeweissen Recipe

Extract

OG 1.050
OG 1.055
IBU: 15
IBU: 15

4 pounds pale malt extract
4 pounds wheat malt extract
0.75 Perle or or Hallertauer, 4% AAU 60 min
0.25 Hallertauer 4% AAU 10 min

Bring water to as boil. Turn off heat and Stir in extract, dissolving completely. Return to boil and add hops, boil for 50 minutes, then add remaining hops. DO NOT add irish moss! Chill rapidly, then pitch yeast.

Both recipes:

White Labs WLP300 Hefeweizen Ale or Wyeast 3068 Weihenstephan Weizen yeast
Carbonate to 2.5 to 3 volumes. Use either force carbonation or add $\frac{3}{4}$ cups priming sugar to 1 cup of water boiled for 15 minutes.

All-Grain

FG 1.012
FG 1.012
ABV: 5%
ABV: 5.2%

2.4 lb pilsner malt
5.15 lb wheat malt
0.75 Hallertauer 4% AAU 60"
0.25 Hallertauer 4% AAU 10"

Mash in at 104 F and raise to 122 F. Rest for 25 minutes. Remove 40% of the mash and heat in a separate vessel to 160 F (decoction) and rest for 15 minutes. Heat to boiling (without scorching!) and hold for 20 minutes. Combine the mashes and heat to 147F. Rest for 20 minutes. Heat to 160F and Rest for 20 minutes. Mash out at 168F Sparge at 170F and collect enough wort to allow for a 2 hour boil. Add hops as shown above. Allow to rest for 30 minutes before cooling. Pitch yeast.