

FOR THE HOMEBREWER & BEER LOVER

zymurgy®

■ The Journal of the American Homebrewers Association ■

TWICE AS NICE:
1 BATCH,
2 DIFFERENT BEERS

September/October 2010

* NATIONAL HOMEBREWERS CONFERENCE WINNERS CIRCLE

In this issue:

45BEERS
YOU
CAN
BREWNational
Homebrew
CompetitionCIDER
RULES THE
HOUSESave Time:
Batch
SpargeA Publication of
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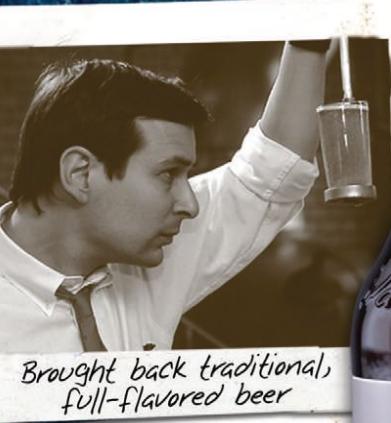


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BREWERY

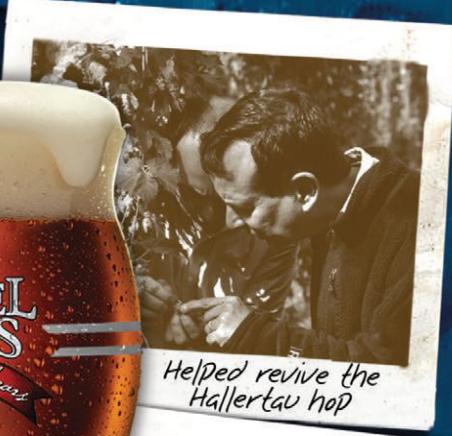
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Another Great Conference

More than 1,300 homebrewers converged upon Minneapolis, Minn. June 17-19 for the AHA's 32nd National Homebrewers Conference and National Homebrew Competition. The conference is always a source of inspiration—and not just for homebrewers.

"You guys inspire the hell out of me when I come to this conference," said Rogue brewmaster John Maier, whose beers were served at the awards banquet on June 19. "Club Night was an event I'll never forget. That is something you can't explain unless you experience it. The beers are top-notch."

More than 40 homebrew clubs once again went all-out for the annual Club Night on June 18, with booth decorations, costumes and awe-inspiring beers, meads and ciders. Where else can you try a curry IPA, a raspberry lambic and an imperial Belgian pale ale, along with hundreds of other creations? In all, more than 600 kegs were tapped for Club Night.

The conference brought together both individuals and clubs who are interested in learning more about brewing and sharing camaraderie through 27 seminars, lots of homebrew, and events such as Club Night and Pro Brewers Night.

Mark Sturud, founder of Summit Brewing Co. in St. Paul, gave the keynote address at the conference, telling the audience, "I've never seen such a fine group of deviants."

Sturud, who received a standing ovation, challenged homebrewers to continue educating others about good beer, saying, "You guys are ahead of the curve. You have a hell of a lot of responsibility to lead others. We need to get some of these other beer drinkers converted—and sometimes conversion can be near-religious."

Seminars ranged on topics including equipment, ingredients, brewing techniques, food and beer pairing, and beer (and mead and cider) styles.

"This is the geekiest National Homebrewers Conference I've been to," commented Ken Schramm, author of *The Compleat Meadmaker*, on the technical nature of this year's seminars. Attendees of Schramm's talk on "Beer, Mead and the Human Sensory System" were treated to samples of his famous Heart of Darkness mead. Schramm also poured samples at Club Night.

As is typical, a standing-room-only crowd attended the "When Homebrewers Go Pro: Starting Your Own Brewery" seminar. Panelists Tom Hennessy, Omar Ansari, Jay and Lori Wince, and Rick Garvin gave practical advice on getting started on the professional side of brewing.

On June 19, the highly anticipated awards were presented for the National Homebrew Competition (see the winners and their award-winning recipes starting on page 47). Banquet attendees were first treated to a three-course meal created by homebrew chef Sean Paxton and paired with beers from Rogue Ales.

The local organizing committee, consisting of 17 homebrewers and led by Curt Stock, Kris England and Steve Fletty, helped the AHA put on a spectacular conference that included pre-conference events such as baseball games, a party at Northern Brewer and brewery tours. The 2011 event is set for June 16-18 in San Diego. Will you be there?

Jill Redding is editor-in-chief of *Zymurgy*.



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ONLINE EXTRA **Making Your Homebrew Club 'Official'** byDrewBeechum
To read this special, online-only feature, go to the *Zymurgy* page on HomebrewersAssociation.org.

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>> GET THERE! SAN DIEGO FESTIVAL OF BEER

More than 6,000 beer lovers are expected to converge upon the 16th annual San Diego Festival of Beer on September 10.

The Festival of Beer started in 1994 to raise money for the fight against cancer. Proceeds of the event go to local cancer charities.

More than 75 different breweries will be pouring their beer at the festival, which also includes live music. The admission price of \$30 includes 10 four-ounce beer tastings and a souvenir event logo tasting mug. There will also be food and wine available for purchase inside the festival. The festival takes place from 6-11 p.m. at Columbia and B. To learn more or to order tickets, go to www.sdbeerfest.com.



September 3-4
The Little Woody Barrel Aged Brew Festival
Bend, OR. www.thelittlewoody.com

September 10-11
Great Canadian Beer Festival
Victoria, B.C. www.gcbf.com

September 17-18
Great Lakes Brew Fest
Racine, WI. www.greatlakesbrewfest.com

September 18
Brewgrass 2010
Asheville, N.C. <http://brewgrassfestival.com/>

September 24-26
Fremont Oktoberfest
Seattle, WA. www.fremontoktoberfest.com

October 7-17
Baltimore Beer Week
Baltimore, MD. www.baltimorebeerweek.com

October 16
Santa Barbara Beer Festival
Santa Barbara, CA. www.sbbeerfestival.com

For more beer events check out the calendar on CraftBeer.com.

BREW NEWS: WYNKOOP BEGINS HORSE-POWERED BEER DELIVERY



On April 16, Denver's Wynkoop Brewing Company began the first of its new horse-powered deliveries of Rail Yard Ale and its other small-batch beers. A wagon pulled by two 2,000-pound Clydesdale horses rolled out from the alley behind Wynkoop Brewing Company and headed to a few of the brewery's downtown beer retailers.

"We're bringing back a piece of our city's beer-blessed past," says the brewpub's cheerleader/idea man Marty Jones. "Our local historians tell us it's been nearly 100 years since beer was delivered in Denver in this fashion."

"It's a great way for us to shrink our carbon footprint while expanding our hoof print," he added.

"For fellow tipplers, it'll be a joy to see horse-powered beer wagons rolling down Denver's streets again," says Denver historian Tom "Dr. Colorado" Noel.

For the debut run, the horse-drawn wagon visited Wazee Supper Club (Wynkoop's top draft account and sister establishment), Wines off Wynkoop (the brewpub's first Rail Yard Ale can account), Lannie's Clocktower Cabaret (in the historic D & F Tower on Denver's 16th Street Mall) and Scruffy Murphy's Irish Pub.

Wynkoop will conduct its horse-powered deliveries on the second and fourth Friday of each month. Wynkoop assistant brewer Charlie Berger will ride in the beer wagon and deliver the beers into the beer establishments.

Colorado's first brewpub, Wynkoop Brewing Company was founded in 1988 by Denver mayor John Hickenlooper.

GREAT GADGET

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These stretchy, molded bottle caps are durable and reusable, and come in assorted colors. They're made of food-safe silicon.

Beer Savers™ can be used to keep bottles sterile before bottling your homebrew, or can be used to keep beers fresh and carbonated in between, or during, drinking sessions. At parties or homebrew club gatherings, they can also be used to differentiate beers, sort of a beer version of "wine charms."

Beer Savers™ come in multicolored packs of six and retail for \$19.99. They fit most standard beer bottles and some larger-size bottles. Dishwasher-safe, they make great hostess gifts for your next beer gathering. To order, go to www.beersavers.com.



>> YOU'VE GOTTA DRINK THIS SUMMIT EXTRA PALE ALE

Summit Brewing Co. is a fantastic brewery in St. Paul, Minn. They make a lot of different beers (all of them good), but the one that continues to amaze me is the Extra Pale Ale. If you could take all the best parts of Minnesota and jam 'em together into a bottle, Summit EPA is what you'd get! It's a great beer, and not just in my opinion...it's won a few awards to prove it.

Summit EPA has an aroma of malt and Cascade hops that will lure you in. And after your first sip, you're hooked. It has a distinct flavor of Horizon and Fuggle hops, mixed with a touch of caramel sweetness from the malt. I find it to be a great "anytime" beer. Simply put...you've gotta drink this!

Reviewed by Tom Hockford, Plano, Texas

If you've had a beer you just have to tell the world about, send your description, in 150 words or fewer, to jill@brewersassociation.org.



BREW NEWS: OKLAHOMA LEGALIZES HOMEBREWING



On May 10, Gov. Brad Henry signed into law legislation that makes homebrewing beer legal in Oklahoma.

House Bill 2348, sponsored by Representative Colby Schwartz and Senator Mike Schulz, officially legalized the home production of beer for personal use in Oklahoma. Home production of wine and cider for personal use was already legal in Oklahoma. The new law goes into effect August 26, 2010.

Gary Shellman, American Homebrewers Association (AHA) member and editor for Oklahoma City's homebrew club, the High Plains Draughters, initiated the legalization process and worked tirelessly to ensure the bill's passage. Shellman spent months lining up a sponsor for a homebrew bill. He kept up with the bill throughout the process, advising the bill's sponsors and reporting on the bill's progress to the AHA staff and Oklahoma homebrew club members.

The American Homebrewers Association assisted the legalization effort by providing advice and by mobilizing Oklahoma AHA members and Brewers Association member breweries in support of HB 2348.

The AHA is currently working with homebrewers in Alabama and Mississippi, the only remaining states where homebrewing is not yet legal, on efforts to legalize homebrewing in those states. The AHA also worked with homebrewers in Louisiana this year on a successful campaign to legalize the serving of homebrew at restaurants, pubs and breweries for club meetings, competitions and other organized events.

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by Our Readers

Liquid Poets Follow Their Folly



Dear Zymurgy,

I was interested to read about the Sonoma Beerocrats' joint project with Russian River Brewing in the May/June 2010 issue (*The Last Drop*). Here in Fort Collins, Colo., the Liquid Poets have a similar project with New Belgium Brewing that started in 2007. Lauren Salazar runs the sour beer program at New Belgium; when she offered our club the use of one of the brewery's 55-gallon La Folie barrels, we jumped at the chance!

We get a dozen Liquid Poets to each brew 5 gallons of a common recipe. We then meet at the brewery to siphon the beer into the barrel. We have found that due to the high level of microbial activity in the barrel, it only takes about nine months for a sufficient lactic character to develop. Since this is a La Folie barrel, there is no telling what other critters live in the barrel besides lactobacillus!

Our first project was a sour Belgian strong blond. It developed a crisp lactic sourness with a deep earthy complexity.

Our second sour beer was brewed from a schwarzbiere recipe; some roast character comes through. The third beer was amber, and many members blended it with pumpkin ale to produce spiced sour pumpkin ale. We got this idea in the NBB tasting room, blending draft La Folie and Elysian Night Owl pumpkin ale. Yum!

The fourth project was a sour dunkelweizen; we were really pushing the limits of sanity with this one! And just last month we put the fifth beer in the barrel, another strong blond. The first one was so good we want to do it again.

We are fortunate to have great support from local breweries. The Liquid Poets

have benefited greatly from this project. Lauren has shared her knowledge of brewing sour beers with us, as well as sharing many pitchers of New Belgium beer during our transfer sessions!

Ted Manahan
Liquid Poets
Fort Collins, Colo.

Where is Southampton, Anyway?

Dear Zymurgy,
I was disturbed to read in the May/June issue a misstatement about the location of the Southampton Publick House. The Publick House is located on Long Island in New York, not in Wisconsin as was purported in Commercial Calibration. While this might seem like a minor oversight to some, as an avid homebrewer and beer enthusiast who lives on Long Island, I would like to take a moment to recognize the significant footprint Long Island makes on the craft brew movement.

With numerous craft breweries like Blue Point, Southampton, Greenport, Long Ireland, and Great South Bay as well as award-winning brewpubs such as John Harvards and Brickhouse, Long Island is well represented indeed. There are also numerous homebrew and beer enthusiast clubs such as Long Island Beer and Malt Enthusiasts and Brewers East End Revival and craft brew festivals such as the Blue Point Cask Ale Fest and the Northfork BBQ and Craft Brew fest. In short, let's not rob Long Island of the recognition it deserves.

Sincerely,
Andrew Luberto

Zymurgy editor Jill Redding responds:
Southampton Publick House is indeed

located in Southampton, N.Y., but many of its beers are contract-brewed for distribution by Pabst Brewing Co. in Wisconsin. My bottle of Southampton Double White says it was bottled in LaCrosse, Wis. Nevertheless, the article should have recognized the Southampton, N.Y. location rather than Wisconsin.

Clarification on Coffee Beer

Dear Zymurgy,
I have a question about the Java Porter recipe on page 36 of Matt Lange's article,

"A Cuppa Beer," in the March/April 2010 Zymurgy. Is the 12.0 ounces of cold-pressed coffee a liquid (volume) measurement, or is it 12.0 ounces (weight) of ground coffee to be added to water to make the cold-pressed coffee? It seems like a lot of coffee if it's weight, but the metric equivalent in parentheses shows 340 grams.

Thanks!
Josh Allfree
Louisville, Ky.

Zymurgy author Matt Lange responds:
Thanks for the question and I'm glad you are going to try out the recipe. I was referring to 12 ounces of liquid cold press coffee, made from the method I described earlier in the article, not 12 ounces of coffee beans by weight. The metric conversion was done after I sent the piece in. This is also made more confusing because in the same issue Randy Mosher talks briefly about the cold steep method for using coffee and recommends "0.75 to 1.5 ounces of coffee per 5-gallon batch," clearly referring to the weight of the coffee beans. When I read that I looked at my own recipe and saw that people could easily be confused. I hope no one used a full 12 ounces of beans to make 12 cups of cold press to add to the beer! Thank you for asking, and sorry about the confusion.

Correction

Rahr & Sons Brewing Co. was inadvertently left out of the "Best Portfolio" list in the Best Beers in America feature in July/August. Rahr had 14 beers named in the poll, which puts them in a tie for 9th place with Avery Brewing Co.

Send your Dear Zymurgy letters to jill@brewersassociation.org. Hey homebrewers! If you have a homebrew label that you would like to see in our magazine, send it to Allison Seymour, Magazine Art Director, at allison@brewersassociation.org.

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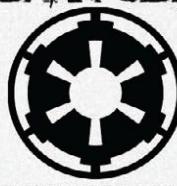
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Ryan Gab, Golden, CO

by Professor Surfeit



Taking a Stand on Aeration



Dear Professor Surfeit,
I honestly believe homebrewers do themselves a disservice by over-aerating their wort before pitching yeast. I think in essence they're turning their entire batch into a yeast starter, which is inefficient.

If brewers pitch enough yeast, the only aeration necessary happens when transferring the wort from the boiling kettle to the primary fermenter. If enough yeast is pitched, it doesn't really need to reproduce within the wort. It just needs to ferment the sugars into alcohol.

Therefore, the only real aeration needs to happen in the starter, and not at all in the primary fermenter. I just don't understand why homebrewers get obsessed over aquarium stones and all that nonsense.

I'll admit that I'm still underpitching yeast at home. I make a starter with about half a gallon of wort that I boil in advance

of the rest of the batch. Then I either add one vial of White Labs yeast, or sometimes yeast I've collected from a previous batch (and when I do that, I start with approximately 15 times as many cells as just a single vial of White Labs yeast).

I aerate the heck out of the starter, for sure. But the only "aeration" that happens in the primary fermenter is the transfer from the boiling kettle.

People say I'm blasphemous for trying to convince other brewers that aerating the entire wort is unnecessary (and inefficient) at best and detrimental to taste and color at worst. I'm a pariah of the homebrew community. Yet my wort is very active within the first 24 hours after pitching yeast, and typically reaches my target FG within a week.

So what's your take on aeration, Professor Surfeit? I would absolutely be thrilled if respected names in the community took a public stand on the issue. My take is simple: when you make a large enough starter, aerating the entire wort is not necessary and potentially detrimental to the cause.

Take care,
Brent

Dear Brent,
You bring up some honest points. But the edges get a little blurred. The bottom line is that you are getting good results, so there's no arguing that you like your beer and you get good fermentation.

But efficiency is relative. Yes, I suppose if you pitched enough oxygen-enhanced yeast into a wort you wouldn't need to aerate your wort any more than achieved through transfers. But here's when the pitch becomes a balk. Take your base and con-

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In this issue:
10 BEERS
YOU CAN BREW
Cleaning and Sanitizing
CASCADIAN DARK ALES
Charlie's Carlo Our Boys

sider that you have spent a bunch of time, money, effort and other resources building up a yeast slurry that is theoretically enough yeast to ferment wort without need for reproduction. What have you gained?

I would propose that simply shaking your carboy to aerate is adequate, simple, cheap, not time consuming and works. I'm with you about not overdoing it. It isn't necessary with shakes.

I'm noting you say that hot-side aeration is adequate. If the wort is boiling hot and you aerate, the air doesn't dissolve as well as in a cool wort. That's point number one. Point number two, in commercial brewing where stability of flavor and quality is important in the fluctuating and uncertain marketplace environment, hot side aeration causes precursors that will accelerate staling of beer. I believe that homebrewers do not need to worry about "hot-side aeration" ever. Ever! In fact, for hundreds of years traditional brewers never worried about this and made excellent world-class beer. This was in a time when shelf life was not an issue. Drink local, drink fresh.

Now then, about those aquarium stones and all "that nonsense." Hey, if it makes a brewer feel better, do it. Not necessary, but it won't hurt. I know you seem to disagree that it will hurt. We agree to disagree. I don't quite understand the science of

your statement that cold wort aeration is detrimental to color and taste. I've never had problems with taste and color with my brew, but then again, perhaps I don't know what I'm missing.

With all due respect,
The Professor, Hb.D.

Stuck in the Middle with Flamboyant Braggot

Hi Professor,

I recently brewed what I'm calling a Strong Belgian Framboise Braggot. It has 6 pounds of dried malt extract and 6 pounds of honey in the wort. I utilized Wyeast Strong Belgian yeast and 2 teaspoons of yeast nutrient when I pitched. Initial gravity was 1.107. Targeted final gravity is 1.020. It has been fermenting at a pretty constant 70° F for over three weeks and still burps about every 60 seconds. My last reading was 1.041. I haven't racked to a second fermenter yet or added the berries.

Does it usually take this long to ferment? The CO₂ emission smells wonderful and I see no signs of bacterial growth. I'm just concerned it is taking so long. Should I add any yeast/nutrient or just relax and have a homebrew?

Thomas Macpherson
Marblehead, Mass.

Dear Sir Thomas,

You're brewing a very strong brew and you still have signs of good ferment. Best advice I can give you is relax, don't worry, have a homebrew. Since your query I'm noting that you've sent me a follow-up note in which you reveal, "My solution was to pitch some additional yeast slurry, pop the air lock back in and abandon it [for about eight days]. It seemed to work. FG was 1.015 and tasted great."

Well sir, it worked. But we'll never be sure whether relaxing would have worked any better. Pitching a freshly aerated slurry of yeast was a good move. I would have advised that if you couldn't use fresh aerated yeast, then hydrating some quality dried yeast could have worked as well.

Flamboyantly,
The Professor, Hb.D

Infusion Mashing and Tempered Sparging

Howdy,

I have a question regarding the Infusion Mash Table on page 284 in the third edition of *The Complete Joy of Homebrewing*. I am planning to move up to all-grain brewing in the next month or so...just need a bigger brewpot. I understand the formulas and the table for infusion mashing but am not sure what to do when the [5 gallon] recipe from my homebrew shop has more than 10 lbs of grain and adjunct. Do I follow the formula, draw off 6.5 gallons and just ditch the rest?

As an example my understanding based on your formula is the following:

11 pounds of grain requires:
2.75 gallons (11 quarts) of mash water
1.1 gallons of water will be absorbed by
the grain
5.5 gallons of sparge water will be required

This gives me 7.15 gallons of wort pre-boil.

Do I just boil the 7.15 gallons until I reach 5.5 gallons, or just toss the difference between 6.5 gallons and 7.15 gallons pre-boil?

Thank you in advance for your time. I

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really enjoy your books and have already brewed an extract batch with my son while he was visiting from Germany.

With best regards,
Michael Chastain

Dear Michael,

Essentially if you are making a 5-gallon batch, sparge until you get 5.5 to 6 gallons. Evaporate in boil down to 5. If you collect all 7.2 gallons of theoretical sparge then you will have to boil a considerable amount of time. Your yield will be better, but your beer will begin to undergo caramelization due to extended boiling. Also the last 2 gallons of runoff will begin to draw off astringent characters from the grain. Your beer quality will be better by curtailing the sparge, though your yield might go down a bit. A small price to pay for much better beer.

Tempered,
The Professor, Hb.D.

Cleaning and Sanitizing

Dear Professor,

I just finished reading the articles on cleaning and sanitizing my equipment (July/August 2010). I believe that I am thorough with both steps. I have not had a beer go bad because of either issue. (Not to say I have not had bad beers.)

I sometimes think that I may be overdoing it. I have a Blichmann conical that I fill with hot tap water and PBW. I place all my hoses, spoon, etc. in to soak. I then drain the conical and rinse with tap water. I then fill it again and add StarSan. I now have 14 gallons of StarSan that ends up going down the drain when I am done. I know some other brewers will fill a spray bottle with StarSan or iodophor solution and spray the surfaces to sanitize. Am I doing too much or are others doing too little?

Tim Rice
New Market, Md.

Dear Tim,

Simply put, you may be overdoing it a bit. Fourteen gallons of StarSan is a lot of water for what spraying would do. Perhaps if you were wanting to soak and

clean, then immersion might be warranted, like you're doing with PBW. The sanitizing step for your hoses, etc. can be done with a smaller amount of solution. If you've cleaned well and your equipment is not pitted, porous or scratched, then short contact time is all that's needed. One final thought. It doesn't hurt to roll up your sleeves, put on some protective gloves and gently scrub your equipment from time to time. Mineral deposits can be pretty stubborn and warrant a scrub down, especially if you can see deposits. For those who use glass carboys,

a bottle brush swipe of the areas where stubborn krausen/fermentation deposits accumulate is always a good idea.

Keeping it clean, fair and safe,
The Professor, Hb.D.

Hey homebrewers! If you have a brewing-related question for Professor Surfeit, send it to "Dear Professor," PO Box 1679, Boulder CO 80306-1679; fax 303-447-2825; or e-mail professor@brewersassociation.org.

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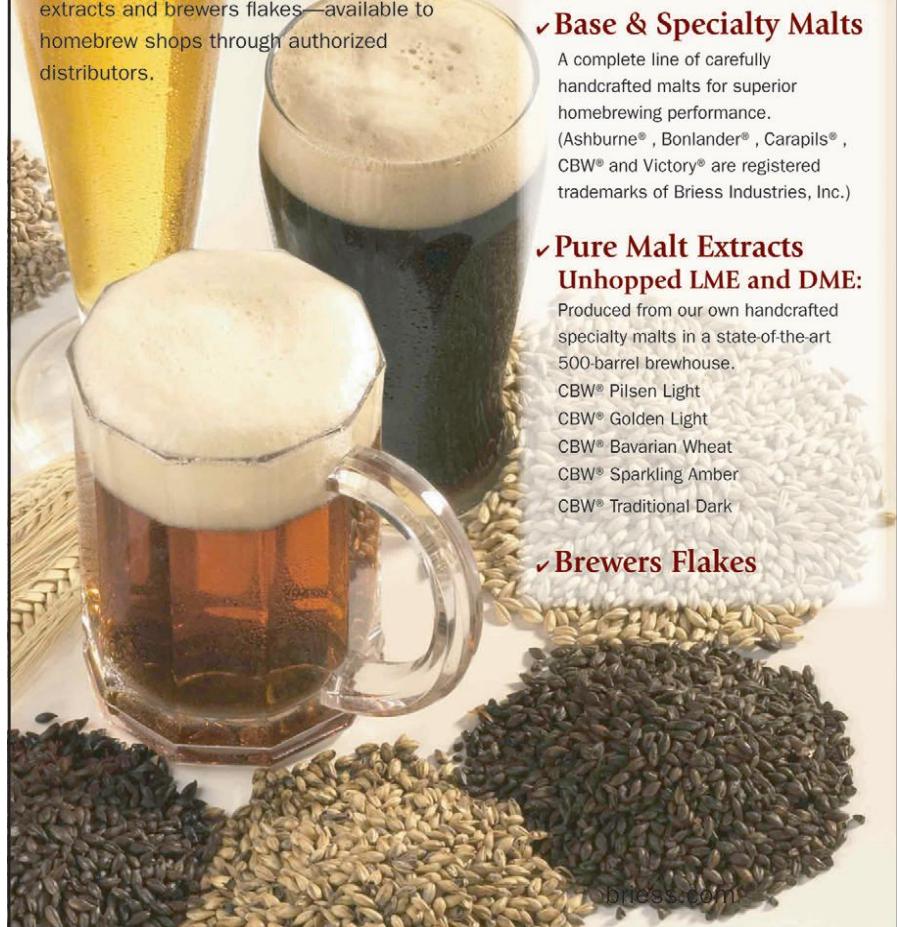
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By Amahl Turczyn Scheppach

Sour Ale



Category 17 Sour Ale is divided into six subcategories: Berliner Weisse, Flanders Red Ale, Flanders Brown Ale (Oud Bruin), Straight Unblended Lambic, Gueuze, and Fruit Lambic.

Berliner Weisse, once called the “Champagne of the North” by Napoleon’s troops, is a surprisingly weak beer at 1.028 to 1.032 original gravity, and an abv of 2.8 to 3.8 percent. Made of 50-percent wheat malt and 50-percent Pils malt, it gets its tartness from a symbiotic fermentation of top-fermenting ale yeast and *Lactobacillus delbrueckii*, though acidity can be adjusted for consistency batch-to-batch by blending. Methods for brewing this beer on a homebrew scale vary, but usually include one or more of the following: doing a separate lactic culture; conducting a sour mash to encourage lactic bacteria formation after saccharification; using 1-3 percent acidulated malt in the grain bill; or simply adding food grade lactic acid to the finished beer. These will

lend various levels of acidity to the beer, and may include their own risks.

While not as sour as lambic, acidity tends to dominate in traditional Berliner Weisse, though some fruity, grainy, even flowery notes may add complexity to aroma and flavor. The beer is often served with a shot of raspberry or woodruff syrup to tame the sourness. Very little hops are used, so IBUs are typically 3 to 8, though mash hopping (with a single decoction mash schedule) is traditional.

Flanders Red Ale is another relatively ancient European beer style that acquires its complexity and sourness from aging up to two years in oak barrels that carry yeast as well as the necessary lactic and acetic bacteria, and *Brettanomyces*. Traditionally, young beer is blended with aged beer to produce a light, acidic palate with a touch of sweetness in the finish. Aging also allows the grain bill of Vienna and/or Munich malts, light caramel malt,

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Special B and sometimes corn adjunct to develop complex fruit character of plum, cherry and wine grapes. The deep red to reddish-brown color and light tannic astringency draw further comparisons to Burgundy. Alcohol ranges from 4.6 to 6.5 percent by volume, and finishing gravities can approach the wine range as well, with 1.002 to 1.012 being common. Hops play a minor role with 10 to 25 IBUs.

Where Flanders Red ale has origins in West Flanders, Oud Bruin is indigenous to the east part of the region, and boasts an even longer history, back to the 1600s. Similar aging methods are employed in the beer’s production, though Oud Bruin is now usually aged in stainless vessels. It is maltier and less acetic than its red cousin, with less of an emphasis on fresh fruit and more on chocolate, dried fruit and caramel. Sourness is also generally more subdued. Alcoholic strength can be higher in this style, with a range from 4 to 8 percent by volume, but since

Lactobacillus reacts poorly to higher alcohol levels, acidulated malt can be used in the grain bill to produce the requisite sourness without resorting to lactic fermentation. Since the lowering of mash pH with acidified malt can affect starch conversion, it is recommended that acid malt be added after most of the saccharification has taken place, and that the addition does not exceed 3 percent of the total grain bill. Flanders Red original gravities range from 1.040 to 1.074, and hops remain subdued at 20 to 25 IBUs. Pils malt makes up the base grain, with lots of dark caramel malts and just a hint of roast or black malt, more for color than flavor. Use water high in carbonates with magnesium to bring out acidity.

Straight, unblended lambic is a very rare, centuries-old beer from Belgium's Senne Valley. Authentic examples are difficult to find outside that area, though Cantillon's Grand Cru Bruocella is one notable exception. Oak, citrus and "horse blanket" Brett aromas blend with lactic sourness, and flavors range from sour apple and citrus fruit to hay-like and honey notes. With wine-like finishing gravities



of 1.001 to 1.010, strong acid content and virtually no carbonation (gueuze is carbonated; lambic is not), straight lambic challenges common perceptions of what beer tastes like. Hops are typically aged three years and provide nearly no bitterness, but are rather added for antibacterial purposes (that is, "unfriendly" bacteria). Spontaneous fermentation brings in all the necessary yeast and bacteria for fermentation, and ideally, the aged hops prevent spoilage from anything unwanted. Strength is typically

5 to 6.5 percent by volume, and the grist is made up of 30-40 percent unmalted wheat and pils malt. The color is pale yellow to deep gold, though age tends to darken the beer.

Gueuze is a similar beer, since it is merely a blend of one-, two- and three-year-old lambics that is then carbonated in the bottle. This carbonation is usually voluminous, due to residual sugar content in the young lambic which then ferments after bottling. Clarity is usually excellent, but there is a lot of fine sediment in the bottle. Tartness varies, but there should be little in the way of astringency. The most authentic versions taste and finish dry but balanced. Less authentic versions have added sweeteners so that the beer will appeal to a larger audience. Alcohol by volume ranges from 5 to 8 percent, with other stats similar to lambic.

Fruit lambic is another product from one-, two- and three-year-old straight lambic, and it is also commonly bottle conditioned, relying on both fruit additions and young lambic to provide necessary sugars for carbonation. Fruit is often added during aging, either to blended or unblended lambic, and since the yeast and bacteria will eventually consume nearly all sugars, gravities must be monitored carefully before bottling. The most common fruit lambics are kriek (cherries) and framboise (raspberries).

Amahl Turczyn Scheppach is a former craft brewer and associate editor for *Zymurgy*, and now brews at home in Lafayette, Colo.

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Berliner Weisse

INGREDIENTS

for 5.25 US gallons (19.9 liters) with a 3.5 gallon (13.2-liter) boil

1 can	(3.3 lb, or 1.5 kg) Coopers Wheat Malt Extract
1.25 lb	(0.57 kg) Coopers Light Dry Malt Extract
0.75 oz	(21 g) Hallertauer hop pellets, 4.0% alpha acid (15 min)
0.75 tsp	(3.6 g) Irish Moss (15 min)
1 package	Wyeast 1338 European Ale yeast or White Labs WLP011 European Ale yeast PLUS 1 package Wyeast 5335 Lactobacillus delbrueckii or White Labs WLP667 Lactobacillus Bacteria
6.4 to 7.6 oz	(181 to 215 g) corn sugar for bottling

Original Specific Gravity: 1.030

Final Specific Gravity: 1.008

IBU: 6

ABV: 2.9%

DIRECTIONS

Start with 3.1 gallons of filtered water. Heat the water to boiling, then turn off the heat, stir in the extract, and top up with water to 3.5 gallons (13.2 L). Bring to a boil and add the hops and the re-hydrated Irish moss. Boil for 15 minutes. Cool the wort, then pour into fermenter with enough pre-boiled cool water to make 5.25 gallons (19.9 L). Aerate and pitch yeast and Lactobacillus bacteria when the temperature drops to 65° to 70° F (18° to 21° C). Ferment at 67° F (19° C) for one week or until fermentation is complete. Prime with 6.4 to 7.6 oz (181 to 215 g) cane sugar at bottling, for a carbonation of approximately 3.5-4.0 volumes of CO₂.

After the beer is carbonated, store for a few weeks at serving temperature of 44° F (6° C) before serving. Allow some bottles to mature for 12 to 18 months. If the beer is too tart, consider adding a touch of raspberry syrup to taste.

NOTE: You will want to dedicate the hoses and other equipment used for this brew for use only with sour beer styles. If you try to use the same equipment for a standard beer style, the beer may pick up residual bacteria and become infected.

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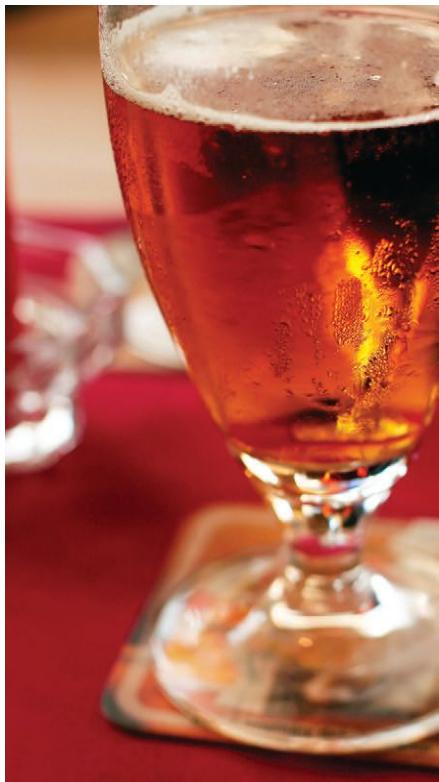
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By Ray Daniels



Blowing Your Credibility as a Beer Expert



Heard about the latest trend toward gastropubs? It's all the rage in my city (Chicago) and, from what I hear, in many other places too. Unfortunately, some of them aren't getting it right. The key to a gastropub is that they feature beer and beer cuisine—often with a Belgian theme. When you feature beer, you necessarily lay claim to expertise in that area. But some of the new efforts are blowing their credibility with silly mistakes in beer presentation and pouring. Read on and see if you can spot any of these server faux pas the next time someone pours you a beer.

While I will admit that I can be hypercritical, anyone who has studied beer for a bit knows you can ruin a beer experience a lot of ways, from dirty glassware to untrained staff. Mind you, when I'm

visiting my neighborhood pub that offers a few good beers in addition to an extensive wine list and signature cocktails, I'm not one to turn up my nose at a clumsy presentation. But the gastro pubs ballyhoo their beer chops with esoteric listings and bottle prices that frequently top \$20. Thus, I hope to find the beer they present both highly appealing and very drinkable.

First, let's talk about the challenge of clean glasses. Beer rats out a dirty glass like no other beverage. Bubbles stuck to the side of the glass show where residue of the previous drinker's beer (and who knows what else) still clings to the glass. Serving a glass with bubbles stuck to the side matches the insult of serving a glass

of wine with a lipstick imprint still on the rim. It's unappetizing, unprofessional and probably unsanitary! Despite this, I've had dirty beer glasses served at my table routinely at gastropubs. Maybe as many as one out of four glasses arrives bearing obvious bubble marking.

I'm not without sympathy on this issue: the shapely glasses often used for specialty beers present hard-to-clean curves and cleavage. But that doesn't change the reality or the effect. When I see a band of bubbles clinging to the bottom inch of a glass, I know there's junk down there that I'd just as soon not drink.

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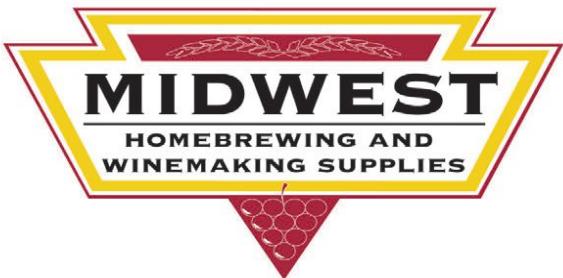
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sumer with a clean glass, you need to give them an appropriate glass. Despite my serious credentials as a style geek, I don't expect every beer to be presented in the one single appropriate glass for that style or brand. Both at home and at the pub, acquiring and keeping all the different glasses you might need would be a huge challenge. The last thing I want is to keep a beer from being served because the right glass isn't available.

WHEN YOU FEATURE BEER,
YOU NECESSARILY LAY
CLAIM TO EXPERTISE IN
THAT AREA. BUT SOME
OF THE NEW EFFORTS ARE
BLOWING THEIR CREDIBILITY
WITH SILLY MISTAKES
IN BEER PRESENTATION
AND POURING.

So what's the key to beer glassware? From my point of view, shape comes second. The most important issue is volume. Responsible beer service dictates that you not serve 12-percent abv barleywines in pint glasses. On the other hand, there's no sense serving a 3.8-percent ordinary bitter in a 5-ounce snifter.

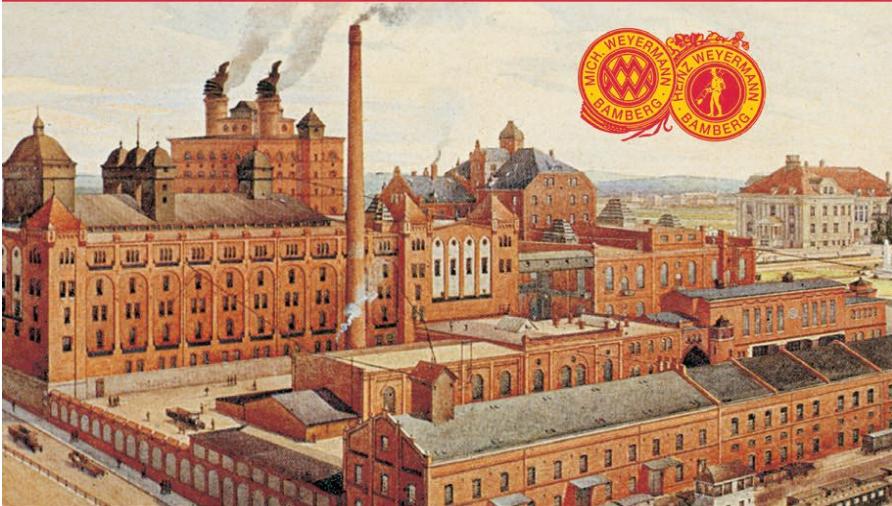
With draft beer you can easily match up alcohol and intensity with volume for pleasant, appropriate consumption. Bottles present additional challenges when they have yeast at the bottom. Ideally, you'd like to open the bottle and pour all of the clear beer possible without turning the bottle back to an upright position. Doing so disrupts the yeast cake on the bottom, stirring it into the remaining beer. Thus when possible you'd like the glass or glasses being served to be big enough for the entire contents of the bottle. Sometimes this simply isn't practical, but that's the general idea.

I recently had a gastropub server recommend Brasserie Dupont's "table beer," Avril, at 3.5-percent abv, noting that it was a great session beer—you know, the kind of thing you drink right down to slake your thirst. He brought the 750 ml bottle and a tiny 5-ounce glass. Huh? In

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addition to being a completely inappropriate glass for the low-alcohol beer and the serving (requiring many inversions of the yeasted bottle), the glass was identical to that used for my companion's red wine. That's how you blow your cred as a gastro pub!

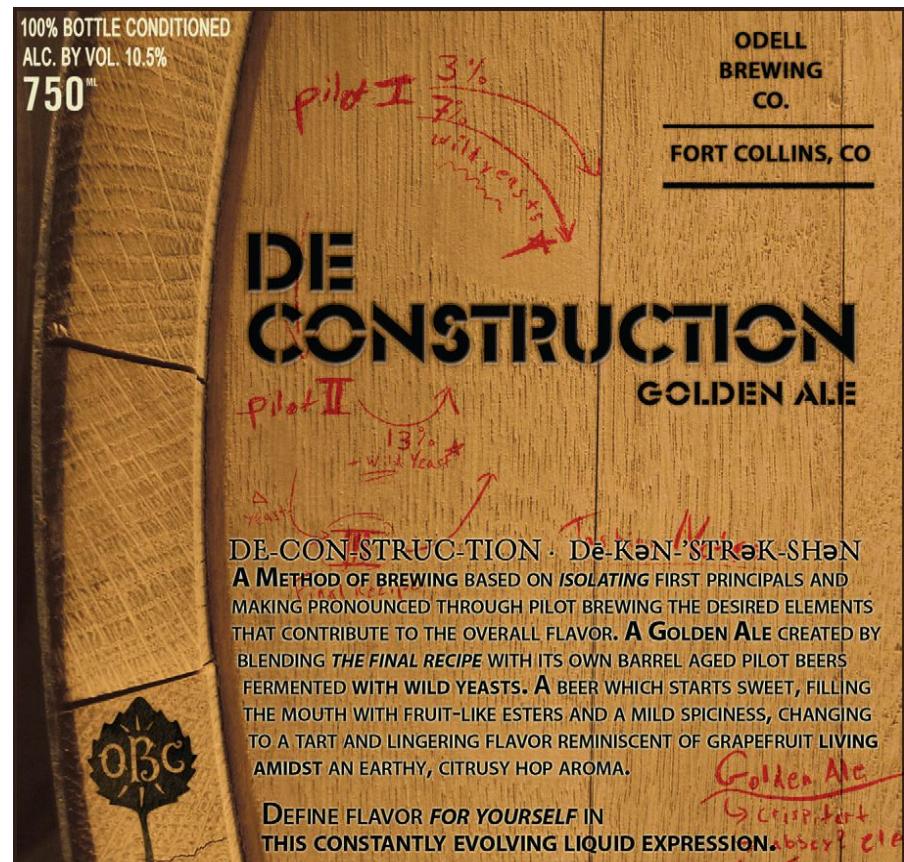
Finally, we have the pour. While there are some stylistic differences with regard to foam head, you'd generally like to see a beer served with somewhere between one inch and one-half inch of head on the top. People in the trade often measure this by the width of a coin, so somewhere between a nickel and a quarter's width of foam. A beer-clean glass (those who saw my talk at the 2008 AHA conference know what I'm talking about) makes this easy. For either draft or bottled beer, you begin by tilting the glass at a 45-degree angle and pouring the beer down the side so that it produces little or no foam. Once the glass is one-half to two-thirds full by volume, you tilt the glass upright and finish by pouring down the middle. Voilà! A beautiful pour!

But not always. I ordered a bottle of Mikkeller Draft Bear (yes, bear), an Imperial Pilsner, at another gastropub. This too arrived as a 750 ml bottle with two classy footed pilsner glasses—tall and sort of cone shaped. Being as it was a gastropub, the server proceeded to pour the beer and totally blew it. She started out OK, pouring the beer down the side of the glass, but inverted it way too soon (as I cringed). The result: the glass was two-thirds full of foam and utterly undrinkable for several minutes.

Did she apologize and get it right on the second glass? No way. She repeated the exact same pour and, of course, got the same results. Sigh.

We are making progress out there. But as the world outside continues to improve, we'll just have to keep providing a good example with our own brews and beer service at home.

Ray Daniels is the author of *Designing Great Beers* and founder of the Cicerone Certification Program. Follow him on Twitter at Cicerone.org.



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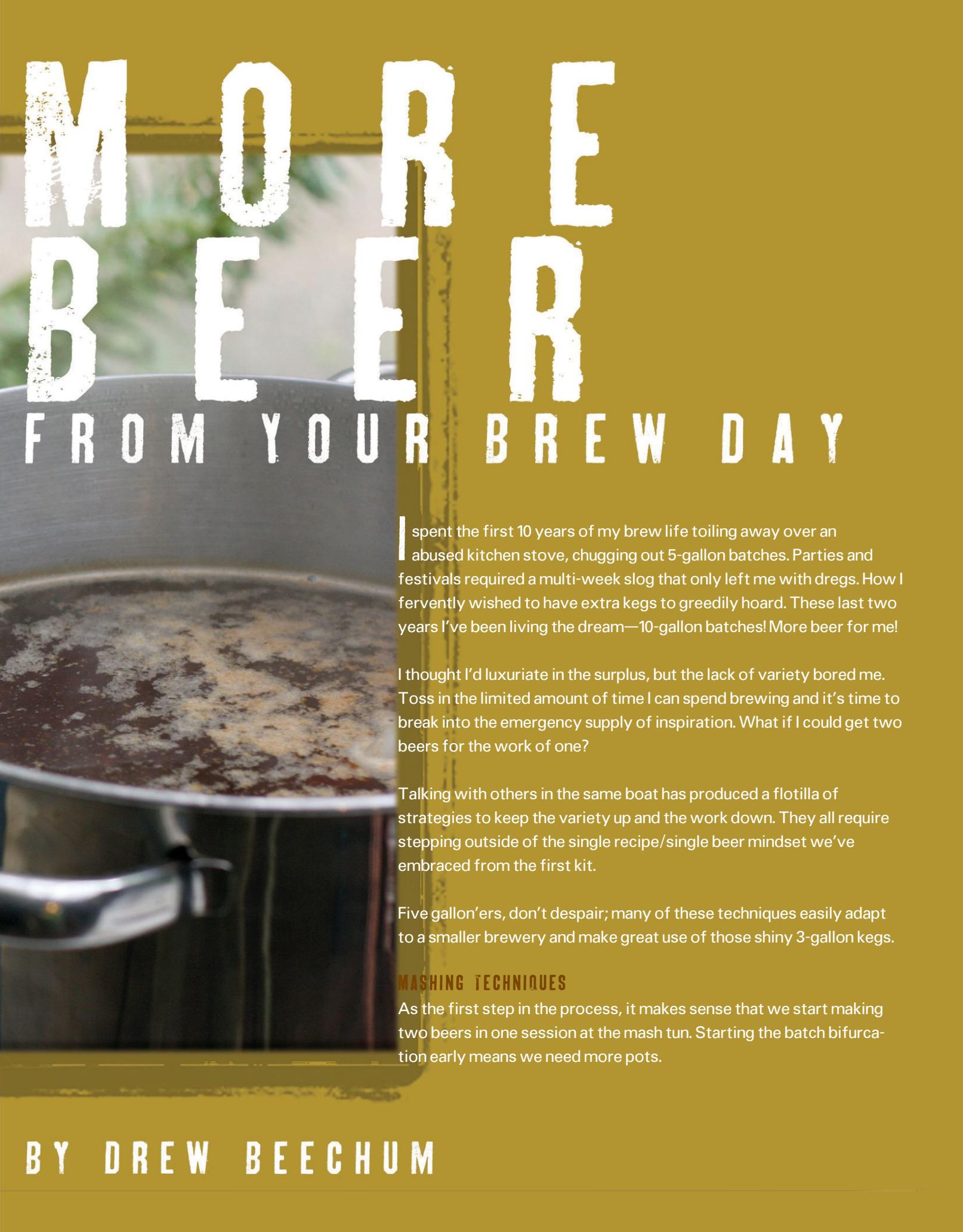
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I spent the first 10 years of my brew life toiling away over an abused kitchen stove, chugging out 5-gallon batches. Parties and festivals required a multi-week slog that only left me with dregs. How I fervently wished to have extra kegs to greedily hoard. These last two years I've been living the dream—10-gallon batches! More beer for me!

I thought I'd luxuriate in the surplus, but the lack of variety bored me. Toss in the limited amount of time I can spend brewing and it's time to break into the emergency supply of inspiration. What if I could get two beers for the work of one?

Talking with others in the same boat has produced a flotilla of strategies to keep the variety up and the work down. They all require stepping outside of the single recipe/single beer mindset we've embraced from the first kit.

Five gallon'ers, don't despair; many of these techniques easily adapt to a smaller brewery and make great use of those shiny 3-gallon kegs.

MASHING TECHNIQUES

As the first step in the process, it makes sense that we start making two beers in one session at the mash tun. Starting the batch bifurcation early means we need more pots.

BY DREW BEECHUM

We never give enough credit to our ancestors, short-changing them with the assumption that they just didn't know very much. Truth be told, they solved this variety/work conundrum right off the bat. Before fly sparging, batches of water rinsed the mash and maximized brewery yield. The "first runnings" was for strong ales, the second for weaker ale and finally the third runnings for small beer. Parti-gyle brewing, usually associated with the British, is still used by Fullers for its famous ESB, London Pride and Chiswick Bitter. There are two different approaches the modern homebrewer can take to parti-gyle. Randy Mosher described in *Brewing Techniques* a way to craft two runnings from a fly sparge with predictable gravities¹. The basic equation requires calculating the gravity points needed for the two beers and then averaging to produce a target mash gravity.

For instance, 5 gallons of beer at 1.090 and 5 gallons at 1.060 require $(5 \times 90) + (5 \times 60) = 750$ points. Dividing that by the total volume (10) points to a mash for 10 gallons at 1.075. His rule of thumb declares the first third of the runnings contain half of the sugar (e.g. 3 gallons at 1.125).

Many homebrewers employ a modification of traditional parti-gyle—batch sparging. In batch sparging, we combine our runnings into a single boil vessel. Historically, each batch was directed to a different boiler (or "copper") and then boiled, cooled and fermented separately. Sometimes, as is the case with Fullers, a wider variety resulted by mixing the results of the various coppers. This extends the reach of the precious first runnings and bolsters the weaker runnings. Kai Troester (aka Brau Kaiser) has a helpful spreadsheet for predicting the behavior of a traditional parti-gyle mash.²

Instead of using the blended runnings, adding more grain can bump the second beer's character. "Capping" the mash entails a small addition (0.5-2 lbs) of crushed malt added and soaked for a few minutes before the sparge is resumed. Common additions include color malts like crystals and roasts to boost SRM and malt perception.

To radically gain more character and gravity, take a cue from "The Forever Brewery" (Bruce Brode, Les Jones and Brian Vessa) and perform a second mash. This side pot added to their sparged Hellesbock mash boosted the gravity and color for an Oktoberfest. A pure second runnings Oktoberfest would miss the rich malt of the first runnings. Notice that their second mash used a bevy of "malty" malts. Use it for non-parti-gyle beers. Mash an all-malt pale lager with a side cereal mash of corn or rice to make a "premium" lager or pale malt for a golden barleywine. *Recipe: Forever Brewery Hellesbock/Oktoberfest*

The truly ambitious can run multiple simultaneous mashes. Gather the various runnings and blend the worts. With two mashes and simple splitting it is possible to create four or more batches in a short time.

BOILING TECHNIQUES

The simplest trick: literally split the boil into two pots. Collect the runnings, give everything a big stir to prevent sugar stratification, and divide the wort evenly. Staggered boil starts make the cleaning/chilling/pitching phase of life easier. This method gives tremendous freedom, but the mash design needs consideration. Many styles of beer share major malt characteristics: Oktoberfest and steam beer; wee heavy and barleywine.

Need to double the beer fast? What prevents us from hitting those volumes? Water and lots of it. Remember early brewing days when we'd boil three gallons of wort and add water to reach the target volume? By adding freshly boiled and cooled water to a portion of wort, you effectively boost your output as well as variety.

My club's brewery produces 31 gallons per batch. With a busy fest season and folks wanting to learn milds, I planned our biggest batch: 55 gallons. The base recipe would qualify as an old ale, but we called it a throwback in a nod to history. It was designed to be extra chewy and malty. As the kettle burbled, we boiled 25 gallons of water in the hot liquor tank. We filled one carboy with the high octane throwback. The remainder received a half

tank. With the wort distributed, the HLT water was chilled and filled the gap. A quick shake and a pitch later we had 50 gallons of mild and 5 gallons of old ale. *Recipe: Throwback Mild/Mega Mild*

The end of the boil is the last chance to take advantage of the heat and the last time for worry-free additions. Recipes modified here easily convert into a straight batch of one style.

Treat the two or more "beers" as separate entities to chill. Since we use heat to dissolve additions, immersion chillers should separate the batches into separate cooling vessels. Lacking a second pot? Use a sanitized bucket to hold a portion. Counter-flow and plate users can whirlpool, chill a portion and use the residual heat to finish the remaining beer or directly chill a portion while the kettle is still aflame.

With very little complication, you can finish one part of the wort "plain," bedazzling the second portion with whatever strikes the mind. Whirlpool hops transform a hop restrained beer into a hop happy beer. Additional hops added while still boiling bumps bitterness. Sugars make great last-minute additions and gravity boosters, particularly syrups like Dark Candi, Lyles Golden or honey. Cold steeped coffee and steeped dark malts blend without losing freshness. Spices like cinnamon, nutmeg and vanilla have greater impact when heated. A mini-mash runnings or a portion of the main wort boiled creates a flavor/color/aroma kicker with a world of additions.

A batch combining a number of techniques saved my recent fest season preparation. I wanted an experimental saison and a fun spicy beer. Short on time and not wanting 10 gallons of "fun spicy beer," I split the batch. The common boil used a wheat mash I use for light saisons. One bittering charge of Magnum, my favorite for neutral bittering, provided all the punch. As the boil closed, I grabbed a small saucepan's worth of wort. I dissolved a bottle of Dark Candi Inc's amber syrup and boiled for 15 minutes. While chilling I added the amber kicker to the partially filled carboy. With 6 gallons chilled, I shut off the chiller, tossed in 2

FOREVER BREWERY HELLESBOCK/OKTOBERFEST

INGREDIENTS

for 15 U.S. gallons (56.8 liters) (Hellesbock)
20 U.S. gallons (75.7 liters) (Oktoberfest)

1st Malt/Grain

42.0 lb (19.05 kg) German Pilsner Malt
17.0 lb (7.7 kg) German Vienna Malt
1.0 lb (454 g) German CaraHell
6.0 lb (2.72 kg) Light DME

Side Mash

4.0 lb (1.81 kg) German Vienna Malt
3.5 lb (1.6 kg) Munich (10L)
2.5 lb (1.1 kg) CaraMunich 2
2.5 lb (1.1 kg) CaraMunich 3
1.0 lb (454 g) Belgian Biscuit Malt
1.0 lb (454 g) Belgian Aromatic Malt
0.5 lb (226 g) Belgian Special B

Hops (Hellesbock)

1.75 oz (49 g) Hallertau Tradition Pellets
(6%) 60 min
2.25 oz (64 g) Hallertau Select Pellets
(4.9%) 60 min
1.0 oz (28 g) Hallertau Tradition Pellets
(6%) 20 min

Hops (Oktoberfest)

1.5 oz (42 g) Northern Brewer Pellets
(9%) 60 min
3.5 oz (99 g) Spalt Pellets (4%) 60 min

Original Gravity: 1.065/1.050

IBUs: 24/19

MASH (HELLESBOCK)

Dough-In: 118° F (48° C)

Saccharification: 152° F (67° C) for 60 minutes

MASH (SIDE)

Dough-In: 148° F (64° C) for 60 minutes

Second Rest: 155° F (68° C) for 30 minutes

DIRECTIONS

Add side mash to first mash after running off 9.6 gallons. Dilute Hellesbock with water to 19 gallons Add DME to Hellesbock and boil. Collect remaining runnings into the Oktoberfest with 15 additional gallons of water.

Extract version of Hellesbock: Change batch size to 5 gallons (19 L). Substitute 9 lbs (4.1 kg) liquid German Gold malt extract (half Pils, half Munich blend) for the base malts. Steep the carahell in 155° F (68° C) water for 30 minutes, strain and remove

grain. Add extract and bring to a boil. Use 1.0 oz (28g) Hallertauer 6% pellets at 60 minutes and 0.5 oz (14g) Hallertauer 6% pellets at 20 minutes. Boil for 60 minutes. Ferment as above.

THROWBACK MILD/ MEGA MILD

INGREDIENTS

for 5 U.S. gallons (18.9 liters) (Throwback)/
50 U.S. gallons (189.3 liters) (Mega Mild)

Grain/Malt

43.0 lb (19.5 kg) Maris Otter
33.0 lb (15 kg) Ashburne Mild Malt
5.5 lb (2.5 kg) Flaked Oats
2.5 lb (1.1 kg) Crystal 120L
1.25 lb (566 g) Carafa II Special
1.25 lb (566 g) Roasted Barley

Hops

3.25 oz (92 g) Target Pellets (12.0%) 60 min
1.25 oz (35 g) Challenger Pellets (6.5%) 30 min

Yeast

Wyeast 1318 London III
Wyeast 1469 West Yorkshire Ale

Original Gravity: 1.075 /1.038

IBU: 22 /14

SRM: 25.2 /15.7

MASH

Saccharification Rest: 154° F (68° C) 60 minutes

Mashout: 168° F (76° C) 25 minutes

DIRECTIONS

Concentrated boil. Boil 25 gallons of water and hold. Take 5 gallons straight. Fill remaining carboys halfway and top with water.

Extract version of Throwback Mild:

Change batch size to 5 gallons (19 L). Steep 0.5 lb (227g) Crystal 120, 2 oz (56g) Carafa II special, 2 oz (56g) roasted barley, and 0.75 lb (341g) carapils in 155° F (68° C) water for 30 minutes, strain and remove grain. Add 10 lb (4.5 kg) liquid Maris Otter or English Pale malt extract and bring to a boil. Use 1.0 oz (28g) Challenger 8% pellets at 60 minutes. Boil for 60 minutes. Ferment using 1318 yeast at 68° F (20° C).

CITRA SAISON/ BELGIAN CREAM SODA

INGREDIENTS

for 6 U.S. gallons (22.7 liters) (Saison)/
6 U.S. gallons (22.7 liters) (Belgian Cream Soda)

Grain/Malt/Sugar

12.5 lb (5.6 kg) Pilsner
8.5 lb (3.9 kg) German Wheat Malt
1.0 lb (454 g) Munich
1.5 lb (680 g) White Sugar

Sugar (Belgian Cream Soda)

1.5 lb (680 g) Amber Candi Syrup

Hops

2.0 oz (56 g) Magnum Pellets (12.0%) 90 min

Hops (Citra Saison)

2.0 oz (56 g) Citra Whole (11.0%) whirlpool for 10 minutes

Extras (Belgian Cream Soda)

0.5 oz (14 g) Cinnamon Extract
(Homemade) added to keg

0.5 oz (14 g) Vanilla Extract
(Homemade) added to keg

Yeast (Citra Saison)

WLP565 Belgian Saison I

Yeast (Belgian Cream Soda)

Wyeast 3787 Trappist High Gravity

Original Gravity: 1.058 /1.067

IBU: 51/51

SRM: 4/12

MASH

Saccharification Rest: 149° F (65° C) for 60 minutes

DIRECTIONS

At the end of boil, pull a small sample and dissolve the syrup. Add to a partially filled carboy. Stop chilling at 6 gallons and toss the Citra hops in the kettle and whirlpool for 10 minutes.

Extract version:

Change batch size to 5 gallons (19 L). Use 7 lbs (3.2 kg) liquid weizen malt extract (blend of wheat and pale malt) instead of the malts, and keep the sugar. Use 1.3 oz (36g) Magnum 12% pellets at 60 minutes. Boil for 60 minutes. Follow remaining recipe-specific instructions for whichever of the beers you are making.

ounces of whole leaf Citra to kettle and let steep for 10 minutes before chilling that portion into another fermenter. After fermenting individually, the saison hit the keg and the Belgian amber received a hit of homemade cinnamon and vanilla extracts to become Belgian Cream Soda.
Recipe: Citra Saison/Belgian Cream Soda

FERMENTATION TECHNIQUES

The adage “yeast makes beer” rings true, therefore it stands to reason that manipulating our unicellular friends makes different beer. The first change is switching yeast strains. The same wort exposed to different yeasts from different regions tastes completely different. I love pitching a traditional strain in one carboy and a Belgian in the other. Try pitching one with an ale strain and another with a lager. Keep packs of dried yeast on hand for an easy yeast switcheroo sans starter.
Recipe: Pale Chocolate Oat Malt Mild

Yeasts respond to stressful situations with different levels of flavors and aromas. In less stressful situations they create more neutral organoleptic experiences. Advanced experiments can take advantage

of these traits to manipulate the flavor. Lowering your yeast pitching rate with a smaller starter induces stress reactions. Changing the fermentation temperature or the wort pitching temperature moves the profile. Weizen strains produce more clove phenols at cooler temperatures (64-66° F) and accentuate banana esters at higher temps (68-70° F). Reduced levels of oxygen affect sterol production and ester production.
Recipe: Nathan's Helles/Koelsch

Pressure and fermenter geometry changes induce amazing effects. Beers fermented openly (aka no airlock, just foil) versus closed fermentation express changes in the yeast profile. Deeper, taller fermenters create more pressure in the wort, reducing ester production and attenuation. Ferment a batch in a carboy/bucket and another in a keg. Even differing head spaces change the beer. My DIPA from last year showed snap and bite from a mostly full 10-gallon keg while its sister carboy provided less hop character.

Handled correctly, sugar additions, key in boil development, can produce great results in the fermenter. Don't give CO₂

perfect nucleation sites to gather and explode; instead boil and dissolve the sugar in a small amount of water or beer. A quick swirl is all that's needed to mix the liquid sugar and wort. Late additions of sugar leave more residual notes so don't be afraid to experiment.

Starting with some basic boil manipulations, Nathan Smith diversified his barleywine recipe to yield both an English and American barleywine. Not only did he chill and dose the second beer with more hops, he “Americanized” it with boiled additions of turbinado and candi syrup at different fermentation stages to ease the yeast into the extra work. His English edition didn't stop at the boil; he added French oak cubes to a small portion.
Recipe: Nathan's Transatlantic American/English Barleywine

SECONDARY TECHNIQUES

Where the boil relied on heat to speedily extract flavor compounds from new ingredients, the maturation period in secondary fermenter or keg provides ethanol a chance to act as a nearly universal solvent. The bonus to the lazy or severely time crunched, secondary additions involve little labor, less confusion (the beers are naturally split) and plenty of downtime waiting for the beer to age.

Probably the most widely used technique (after different yeast pitches) is varying the dry hops. Use the wrong hop and the beer ends up tannic and grassy. Even well established varieties produce radically different final flavors. Of the Hop Woo's two portions, the Cascade version tasted and smelled sweeter than the identical beer dry hopped with Centennial.

Another trick is to manipulate your dry hopping schedule. Normally, I just throw the bagged hops into secondary (or keg) and let them ride. Popular craft brewers tinker with dry hop timing and now add hops for a few days before replacing them with fresh charges. After several charges, the beer carries fresher, less vegetal hop aromas.
Recipe: Hop Woo IPA+

We've all added fruit to wheat beers or stouts, but I didn't want all my hard work to be fruited. With larger batches, there's

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PALE CHOCOLATE OAT MALT MILD

INGREDIENTS

for 10 U.S. gallons (37.8 liters)

Malt/Grain/Sugar

12.0 lb (5.4 kg) Maris Otter
2.0 lb (907 g) Thomas Fawcett Oat Malt
0.5 lb (226 g) Crystal 55L
0.5 lb (226 g) Pale Chocolate Malt

Hops

0.5 oz (14 g) Magnum Pellets (12.9%)
60 min

Yeast

Wyeast 1275 Thames Valley/Wyeast 1882
Thames Valley II (Combined)
US-05 American Ale Yeast

Original Gravity: 1.038

SRM: 13

IBU: 11

MASH

Saccharification Rest: 153° F (67° C) for
60 minutes

NATHAN'S HELLES/KOELSCH

INGREDIENTS

for 6 U.S. gallons (22.7 liters) (Helles)/
6 gallons (22.7 liters) (Koelsch)

Malt/Grain/Sugar

20.0 lb (9.0 kg) German Pilsner
1.0 lb (454 g) German Vienna

Hops

2.1 oz (59 g) Mt. Hood Pellets (5.0%)
60 min
0.5 oz (14 g) Spalt Pellets (4.8%) 20 min

Yeast (Helles)

WLP830 German Lager

Yeast (Koelsch)

WLP029 German Ale

Original Gravity: 1.048

SRM: 8

IBU: 19

MASH

Saccharification Rest: 148° F (64° C) 60
minutes

Extract version: Change batch size to 5
gallons (19 L). Use 7 lbs (3.2 kg) of liquid
pilsner malt instead of base grains. Use 1.0
oz (28g) Mt. Hood 5% pellets at 60. Boil 60
minutes. Pick a yeast based on the style.

NATHAN'S TRANSATLANTIC AMERICAN/ENGLISH BARLEYWINE

INGREDIENTS

for 6 U.S. gallons (22.7 liters) (American)/
6 U.S. gallons (22.7 liters) (English)

Malt/Grain/Sugar (Common)

35.0 lb (15.9 kg) Maris Otter
1.25 lb (566 g) British Crystal 120L
1.0 lb (454 g) American Crystal 10L
1.0 lb (454 g) British Crystal 55L

Sugar (American)

1.0 lb (454 g) Amber Liquid Candi
Syrup (48 hours after pitch)
1.75 lb (793 g) Turbinado Sugar (boiled
with 1000ml water – 72 hours
after pitch)

Hops (Common)

9.0 oz (255 g) Goldings Pellets (5.0%)
90 min
1.0 oz (28 g) Goldings Pellets (5.0%) 30
min
1.0 oz (28 g) Goldings Pellets (5.0%) 5
min

Hops (American Only)

1.0 oz (28 g) Chinook Pellets (5 min)
1.75 oz (49 g) Centennial Pellets (5 min)
1.75 oz (49 g) Amarillo Pellets (5 min)
1.5 oz (42 g) Simcoe Pellets (5 min)
2.0 oz (56 g) Columbus Pellets (5 min)
0.04 oz (1.13 g) Apollo (Dry Hop)
0.04 oz (1.13 g) Summit (Dry Hop)
0.04 oz (1.13 g) Centennial (Dry Hop)
0.02 oz (0.5 g) Simcoe (Dry Hop)
0.02 oz (0.5 g) Citra (Dry Hop)

Extras (English)

1.0 oz (28 g) French Oak Cubes (added
to half for 3-4 months)

Yeast

WLP002 English Ale (English Barleywine)

WLP001 California Ale (American
Barleywine)

Original Gravity: 1.111/1.088

SRM: 21/15 SRM

IBUs: 125/74

MASH

Saccharification Rest: 150° F (66° C) 60
minutes

DIRECTIONS

Mash and boil the beer normally. At the
end of the boil, chill the English portion.
Add the extra American hops and continue
boiling before chilling. Add the sugar syr-
ups, two and three days after brewing. Dry
hop for 14 days after primary fermentation.

With the English portion, split the beer after
fermentation and add oak to one portion.

HOP WOO IPA+

INGREDIENTS

for 11 U.S. gallons (41.6 liters)

Malt/Grain/Sugar

13.5 lb (6.1 kg) Maris Otter
13.5 lb (6.1 kg) Domestic Two Row
1.0 lb (454 g) CaraRed
1.0 lb (454 g) Caravienne

Hops

1.0 oz (28 g) Cascade Pellets (5.5%) First
Wort Hopped
1.5 oz (42 g) Warrior Pellets (15.4%)
90 min
0.5 oz (14 g) Columbus Pellets (14.2%)
60 min
0.5 oz (14 g) Centennial Pellets (9.2%)
60 min
0.5 oz (14 g) Columbus Pellets (14.2%)
30 min
0.5 oz (14 g) Centennial Pellets (9.2%)
30 min
0.5 oz (14 g) Columbus Pellets (14.2%)
15 min
0.5 oz (14 g) Centennial Pellets (9.2%)
15 min
0.5 oz (14 g) Columbus Pellets (14.2%)
0 min
0.5 oz (14 g) Centennial Pellets (9.2%)
0 min
2.0 oz (28 g) Cascade Whole (6.0%)
Dry Hop
2.0 oz (28 g) Centennial Whole (9.0%)
Dry Hop

Yeast

US-05 American Ale / WLP001 California
Ale/Wyeast 1056 Chico Ale

Original Gravity: 1.070

SRM: 10.7

IBUs: 83

MASH

Saccharification Rest: 153° F (67° C) 60 minutes

DIRECTIONS

One keg dry hopped with Cascade
(sweeter tasting). One keg dry hopped with
Centennial.

plenty of beer for me and plenty to add fruit to. This is how I get a crisp witbier and my fiancée gets raspberry wheat. Use high quality fruit or puree—more than seems needed—and give it a few weeks to incorporate. Freezing doesn't sanitize the fruit, but increases extraction. Don't sweat contamination—most fruit beers want to be drunk in a hurry.

Anything that adds sugar should be given time to ferment, including fruit. Additions of honey or sugar excite the yeast and beer. Adding a hefty dose of honey to wheat beer creates a light weizen brag-

got. Adding turbinado sugar syrup adds rum raisin flavors. Trust sugars to provide something more, but don't bottle them immediately to avoid exploding bottles.

Many additions require time and patience to release their full potential, like oak cubes. I soak mine in alcohol for years to round off the harsher edges, but a few weeks is sufficient. I add two ounces to a carboy or keg for a month cold aging. Sample the beer periodically.

Growing in popularity are cacao nibs, fermented, cracked and roasted “pre-

chocolate.” Two weeks' time creates silky and earthy chocolate flavors without overwhelming sweetness. Aging longer than two weeks leeches harsh tannic flavors.

Need something speedier? The shelves at my local shop groan with flavor extracts and spirit flavors. Some are awful in any quantity (to me cherry tastes foul), but extracts do capture elusive flavors like peach and apricot. Fruit liqueurs provide additional flavors and an alcohol boost. Richard Swanson poured his unique American Honey Wheat Ale with Captain Morgan's Spiced Rum and honey at the Southern California Homebrewers Festival. Recipe: *Captain's Honey Wheat Ale*.

Homemade spice extracts and teas supply quick hit flavors while maintaining complete artistic control. To make a tea, boil the spice in water for a few minutes, steep and then strain. To make extract, roughly crack the spice and soak in vodka for a few weeks. Extracted qualities differ. With cinnamon, the tea carries the dry, earthy notes of the bark where the extract provides the intense spice heat and bite.

Coffee and tea remain popular flavors and there are myriad ways to introduce them. My favorite is a cold overnight steep for coffee and a quick hot steep and chill for tea. Cold steeping a thick coffee slurry emphasizes great character while minimizing the acrid bite. Tea needs the heat to bloom its herbal qualities. Both added to taste in the secondary can shift a beer with that extra little buzz. Recipe: *Saints Go Marching In RIS*

One secondary fermentation trick I use is to intentionally “funkify” the beer. Adding *Brettanomyces* isn't just for Belgians anymore. I create a starter and add it in a smaller carboy. Providing fresh food in the form of sugar or starter wort encourages funkification. Wait six months and the funk will be tearing the roof off the beer. Alternatively, pitch a portion solely with Brett from the beginning for a subtle character. Recipe: *Tempting Midnight/New Moon Belgian Dark*

PACKAGING TECHNIQUES

Several options remain at packaging hour. We worry about getting our CO₂ levels

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AMERICAN BREWERS GUILD BREWING SCHOOL

spot on to an intended target because of their effect on features like hop perception. So play with it. It may not be aggressively transformative, but a low carbonated American brown reads maltier than a gassy hop aggressive and carbonic portion.

What happens to a beer that's force carbonated versus primed? Use different priming sugars: Dextrose, turbinado, honey, DME, etc.

Flavoring extracts like the ones from above could be applied here. Avoid flavorings that provide sugar unless you account for it in your carbonation calculations. You could even take the flavoring possibilities down to the bottle (12 drops of chocolate in one bottle, 12 drops of vanilla in the next, etc.)

Suddenly all the rage with breweries slugging it out over the "strongest beer" title, eis'ing a brew has long been an accidental brewery process in cold weather climes. After all, why water something down when you can concentrate instead? Accidentally leaving a keg of beer in a freezer for 4-6 hours makes it slushy when rocked. Hooking up a jumper line and pushing yields still liquid beer in a clean keg. The difference is beyond startling. Thawed brews are ripe for further experiments with dry hops and flavorings.
Recipe: Chilly Ghost Bock

BLENDING

Just because the brew day's long past doesn't mean the parade is over. Now that you know exactly the beer's taste, you can more precisely target changes. Experienced brewers talk about fixing one beer that's too *something* by blending with another batch of beer that emphasizes the opposite character.

Mike McDole provides two great examples of blending for purpose. In the 2010 NHC first round, he medaled with a blended IPA. Knowing that his Tasty APA was planned for the pipeline and he had no time to brew an IPA, he took his medal-winning Celebration clone and bumped it up to Imperial levels. He then used the APA to "water" the bigger brew into the target IPA range.

CAPTAIN'S HONEY WHEAT ALE

INGREDIENTS

for 11 gallons (41.6 liters)

Malt/Grain/Sugar

24.0 lb (10.8 kg) Domestic Two Row Malt

4.0 lb (1.81 kg) Wheat Malt

Hops

2.0 oz Centennial (28 g) Pellets (10%) 60 min

2.0 oz Cascade (28 g) Pellets (5.5%) 30 min

Yeast

US-05 American Ale / WLP001 California Ale / Wyeast 1056 Chico Ale

Extras (per 5 gallons)

1 cup honey

325 ml Captain Morgan's Spiced Rum

Original Gravity: 1.058

SRM: 4.7

IBUs: 47 (70% efficiency)

MASH

Saccharification: 150° F (66° C) 60 minutes

DIRECTIONS

Blend honey and rum together and stir slowly into the finished beer.

SAINTS GO MARCHING IN RUSSIAN IMPERIAL STOUT

INGREDIENTS

for 12 U.S. gallons (45.4 liters)

Malt/Grain/Sugar

33.0 lb (15 kg) Maris Otter

2.0 lb (907 g) British Crystal 55L

2.0 lb (907 g) Roast Barley

2.0 lb (907 g) Flaked Barley

1.5 lb (680 g) Carafa II Special

Hops

1.75 oz (49 g) Magnum Pellets (14.5%) 90 min

Yeast

Wyeast 1084 Irish Ale

Extras (per 5 gallons)

8.0 oz (226 g) Lactose (for Indy)

0.5 lb (226 g) Café du Monde Chicory Coffee, Cold Steeped (for New Orleans)

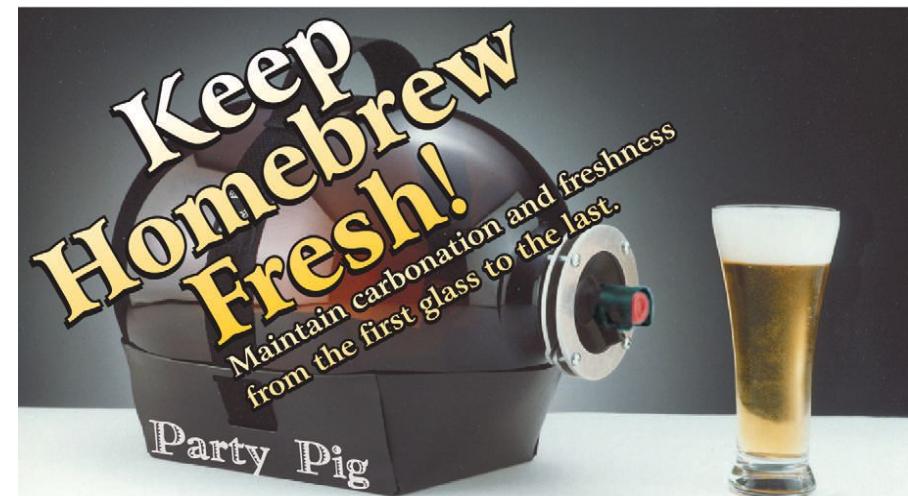
Original Gravity: 1.090

SRM: 35

IBU: 39

MASH

Saccharification Rest: 153° F (67° C) 60 minutes



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To determine the blending ratio, he started with a little math to determine the volumes needed to hit target gravities. He poured samples into a graduated cylinder and adjusted the final blend based on taste before replicating at size. Proving that this wasn't some fluke, Tasty APA was originally a beer resulting from a blend of a Pliny the Elder clone and a Dortmunder Export! *Recipes: Tasty APA and Tasty Celebration Clone*

Not wanting to go that far? Take some split yeast beers and blend them together! Because of my fermenter volumes I often end up with leftover portions of each. I'll rack them into the keg, carbonate and after tasting, adjust with a little of the "straight" portions. There's no reason you can't do this with already packaged beer as well. Mike and others have noticed that the blend displays characters not seen in either base beer.

Mike's second blend is a trick he uses to prepare a keg of session pilsner for trips to the golf course. He begins with a 7.5-percent Imperial Pilsner. On golf day, he adds 1.25 gallons of boiled, chilled and carbonated water to a 2.5-gallon keg and fills with the strong pils. For events like tailgating, he'll change the ratio to 33-percent water and 66-percent beer. While Mike concedes you could do this without carbonated water at packaging time, his worries about oxidation and longevity made him develop his "day of" blending approach. *Recipe: Tasty Imperial Bohemian Pilsner*

While I won't guarantee that applying these methods always yields the exact same results or medal worthy beers, they'll boost your brewery's variety and open your mind to new ways of thinking.

Drew Beechum is a member of the Maltose Falcons homebrewing club and an AHA governing committee member.

REFERENCES

1. www.brewingtechniques.com/library/backissues/issue2.2/mosher.html
2. http://braukaiser.com/download/batch_sparge_simulator.xls

TEMPTING MIDNIGHT/ NEW MOON BELGIAN DARK

INGREDIENTS

for 11 gallons (41.6 liters)

Malt/Grain/Sugar

19.5 lb	(8.8 kg) Pilsner Malt
0.5 lb	(226 g) Biscuit Malt
0.5 lb	(226 g) Caramel Pils (C8)
3.0 lb	(1.36 kg) D2 Dark Candi Syrup

Hops

3.8 oz	(107 g) Styrian Goldings Pellets (5.3%) 60 minutes
--------	---

Yeast

WLP500 Trappist Ale

Extras (Tempting Midnight)

Starter of Brettanomyces Bruxellensis, B.

Claussenii, B. Lambicus

1 quart Starter Wort (added in the sec-

ondary with the Brettanomyces)

2.0 oz (56 g) French oak cubes soaked
in Pinot Noir (added 1 month
prior to packaging)

Original Gravity: 1.056

SRM: 16

IBU: 32

MASH

Saccharification: 148° F (64° C) 90 minutes

CHILLY GHOST BOCK

INGREDIENTS

for 11 gallons (41.6 liters)

Malt/Grain/Sugar

30.0 lb	(13.6 kg) German Pilsner Malt
3.0 lbs	(1.3 kg) Munich Malt
0.25 lb	(113 g) Aromatic Malt

Hops

1.5 oz	(42 g) Magnum Pellets (14.5%) 60 min
2.0 oz	(56 g) Tradition Pellets (6.0%) 20 min

Yeast

WLP 833 German Bock

Original Gravity: 1.081

SRM: 6

IBUs: 46

MASH

Saccharification Rest: 152° F (67° C) 60
minutes

DIRECTIONS

Package and ferment the beer as normal (50° F [10° C] for two weeks, two days at 65° F [18° C], cool to 33° F [0.5° C] for additional 2-4 weeks). Keg and set one keg in a 28° F (-2° C) environment. Check for slushing sounds after four hours and check every 30 minutes after. When keg is sufficiently slushy rack the beer via pressure and jumper hose to a new keg. You should yield ~4 gallons.

TASTY CELEBRATION CLONE

INGREDIENTS

for 12 gallons (45.4 liters)

Malt/Grain/Sugar

28.5 lb	(13 kg) Domestic Two Row
2.0 lb	(907 g) Caramel Pilsner Malt
2.0 lb	(907 g) Crystal 60L
1.0 lb	(454 g) Crystal 120L
1.0 lb	(454 g) Munich Malt
2.0 lb	(907 g) Beet Sugar

Hops

1.5 oz	(42 g) Chinook Pellet 11.00 Mash Hops
1.0 oz	(28 g) Chinook Pellet 11.00 20.9 60 min
4.0 oz	(113 g) Centennial Pellet 9.90 15 min
4.0 oz	(113 g) Cascade Whole 6.70 5 min
4.0 oz	(113 g) Cascade Whole 6.70 1 min
2.0 oz	(56 g) Cascade Pellet 6.70 Dry Hop
2.0 oz	(56 g) Centennial Pellet 9.90 Dry Hop
2.0 oz	(56 g) Chinook Pellet 11.00 Dry Hop

Yeast

WLP001 California Ale Yeast

Original Gravity: 1.080

SRM: 15.6

IBU: 80

MASH SCHEDULE

Intermediate Rest: 143° F (62° C) 15
minutes

Saccharification Rest: 154° F (68° C) 30
minutes

Mash out: 165° F (74° C) 15 minutes

TASTY APA

INGREDIENTS

for 12 U.S. gallons (45.4 liters)

Malt/Grain/Sugar

16.0 lb	(7.2 kg) Domestic Two Row
6.0 lb	(2.7 kg) Pilsner Malt
2.0 lb	(907 g) Cara-Pils Malt
1.0 lb	(454 g) Crystal 40L
1.0 lb	(454 g) Wheat Malt
Hops	
0.5 oz	(14 g) Chinook Whole (13%)
	Mash Hops
0.5 oz	(14 g) Warrior Pellet (15.6%) 60 min
0.5 oz	(14 g) Simcoe Pellet 12.00 (20 min)
0.5 oz	(14 g) Columbus Pellet 15.00 (10 min)
0.5 oz	(14 g) Northern Brewer Whole 9.00 (10 min)
0.5 oz	(14 g) Centennial Pellet 10.50 (1 min)
0.5 oz	(14 g) Simcoe Pellet 12.00 (1 min)
4.0 oz	(113 g) Cascade Whole 5.75 (0 min)
2.0 oz	(56 g) Columbus Pellet 15.00 (Dry Hop)

1.0 oz (28 g) Centennial Pellet 10.50 (Dry Hop)

1.0 oz (28 g) Simcoe Pellet 12.00 (Dry Hop)

Yeast

WLP001 California Ale

Original Gravity: 1.056

SRM: 5.7

IBUs: 37

MASH

Saccharification Rest: 154° F (68° C) 30 minutes

Mashout: 165° F (74° C) 15 minutes

1.5 oz (42 g) Czech Saaz Pellets (4.3%AA) 10 min

2.0 oz (56 g) Czech Saaz Pellets (4.3%AA) 1 min

Yeast

White Labs WLP833, Wyeast 2487

Original Gravity: 1.073

IBUs: 58 IBUs

90 minute boil

MASH

Saccharification Rest: 154° F (68° C) 60 minutes

DIRECTIONS

Dilute up to 50 percent with boiled and chilled, carbonated water.

Extract version: Change batch size to 5 gallons (19 L). Substitute 10 lb (4.5 kg) liquid pilsner malt extract for the pilsner malt. Steep carapils in 155° F (68° C) water for 30 minutes, drain. Add malt extract and bring to a boil. Increase 60-minute hops to 2.5 oz (71g). Follow remainder of the recipe.

TASTY IMPERIAL BOHEMIAN PILSNER

INGREDIENTS

for 6 U.S. gallons (22.7 gallons)

Malt/Grain/Sugar

16.0 lb (7.2 kg) Pilsner Malt

1.0 lb (454 g) Carapils

Hops

2.0 oz (56 g) Czech Saaz Pellets (4.3%AA) 60 min

2.0 oz (56 g) Czech Saaz Pellets (4.3%AA) 30 min

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Cider Rules the House





*By
Mark Pasquinelli*

Zhe calendar flips past Labor Day; our hemisphere begins to tilt away from the sun. The days become cooler. Nature's lush, green pageant explodes into a pyrotechnic palette of red, yellow, and orange. The air resonates with the crisp smell of fallen leaves and the sounds of Friday night football. It's autumn.

For homebrewers, this is the signal to dust off the brew kettle from its summer hiatus. But wait; there's something else—something other than beer—that's crying to be made. Something that's as old as the Renaissance, yet new. Something that's delicious and refreshing—a great change of pace from the stouts and super-hopped IPAs, yet simple to make. It's a delightful counterpoint to the regimented rigors of homebrewing: hard cider.

A Long, Long Time Ago...

In the time of the Tudors, hard cider and perry (fermented pears) were in their heyday in England and France, enjoyed by peasants and nobility alike. King Henry VIII of England had a personal cidemaker. (No job pressure there.) Cider's popularity extended across the pond to Colonial America, which had the perfect climate for growing apples. Gradually, though, tastes changed. Hard cider ceased to be the drink of choice and fell into obscurity.

Standard Cider

Ingredients for 5.0 U.S. gallons (18.9 liters)

5.0 gal (18.9 liters) sweet cider
Wyeast 4766 or White Labs 775 yeast
1.5 tsp pectic enzyme clearing agent

ABV: 6%

Directions

Combine cider and yeast, aerate, ferment at 65° F to 70°F (18-21°C) for 7-10 days, rack to secondary fermenter, and add pectic enzyme. Condition/clear in secondary fermenter for 4-6 weeks. Bottle condition with 6.25 ounces (175 g) corn sugar or force carbonate to 3.0-3.5 volumes CO₂. Cellar for at least six months before serving.

Specialty option (8-10% abv): Add 1 lb (454 g) adjunct(s) (brown sugar, molasses, honey, dark corn syrup, or sorghum) during fermentation. Add any desired spices in teaspoon increments while in secondary fermenter. Rack to tertiary fermenter for conditioning/clearing and bottle.

Karol's Krapple option: Add 2 lbs (907 g) cranberries for a two-week secondary fermentation. Rack to tertiary fermenter for conditioning/clearing and bottle.

New England Style option (11% abv): Add 2.5 lbs (1.13 kg) brown sugar and 1 lb (454 g) molasses during fermentation, and transfer to secondary fermenter. Add 1.6 lb (680 g) raisins, 2 tsp Saigon cinnamon, 1 tsp fresh ground nutmeg and age for two weeks. Rack to tertiary fermenter for conditioning/clearing. Bottle condition with 3.5 oz (100 g) corn sugar (with half-pack Safale US-05 yeast) or force carbonate to 2.0-2.5 volumes CO₂. Cellar for at least one year before serving.



The author, Mark Pasquinelli, starts a common cider.

Today, hard cider is undergoing its own renaissance, much like the rebirth of craft beer in the 1990s. I tried my first commercial cider at a beer festival in 1998—Boston Beer Company's HardCore Cider. I was impressed; it tasted much better than my first childhood brush with hard cider, a long-lost jug of sweet cider that I found in the back of the refrigerator. I was horrified by its "tingy" taste. Fortunately, my tastes have changed.

But even with its growing popularity, commercial cider can still be difficult to find because of competition for limited shelf space and a public that is wary of anything different. I fear that many people have also had my childhood hard cider experience. My wife and I occasionally stumble onto a case of Woodchuck Granny Smith Cider (her favorite). This is the exception rather than the norm—but the norm doesn't have to stop us. We're homebrewers; we can make it ourselves.

An Apple a Day

It seems obvious enough, but sweet (unfermented) cider starts with apples. But there's more to it than haphazardly tossing apples into a crusher. Making sweet cider is a mixture of art and science, blending the correct ratio of sweet, bitter, tart, and sharp apples. This is a job for someone with experience, which is why I don't do it myself. Perhaps if I were mak-

ing 55 gallons of New England style cider to be aged in a bourbon barrel, I would do the research and attempt to blend and crush the apples myself. But to me, hard cider is about simplicity and spontaneity. I save the technical stuff for brewing beer.

Living in a rural area does have its advantages. I'm able to shun supermarket ciders and focus on local orchards and farm markets. I can talk directly to the farmer, find out when the cider was crushed, and what blend of apples he or she used. In the northeast where I live, this is usually a mix of Rome, Macintosh, Granny Smith, and Delicious. Each orchard will have its own variations and blending ratios between apples, much like individual breweries having unique house flavors. Eventually, you'll find the blend that best suits your tastes. There's no need to hurry; lots of time for experimentation.

Be careful that the must (unfermented sweet cider) has not been preserved with potassium sorbate or sodium benzoate. This will inhibit fermentation. Most orchards pasteurize their cider with ultraviolet light, which is preferable. Since I know my cider is fresh and pasteurized, I consider it to be sanitary. I've never had a problem with contamination. If the cider has not been pasteurized or if you have doubts about its integrity, you can pasteurize it by heating it to 160° F (71° C), holding it there for 10-15 minutes, and

The author, Mark Pasquinelli, starts a common cider.

Aeration

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New England style cider ready for bottling

chilling to pitching temperature. An alternative method would be to add potassium metabisulfite, commonly known as a Campden tablet. Use one tablet for 5 gallons and wait 24 hours before pitching the yeast.

Yeast and Fermentation

White wine yeasts such as Lalvin 71B-1122, Red Star Montrachet or Champagne are popular for fermenting cider, but I don't use them. Attenuation is not an issue; all the cider sugars are fermentable. My final gravity is always 1.000, regardless of the yeast used. For me, wine yeasts produce a funky smell that does dissipate upon aging, but the cider doesn't retain its full apple flavor—even though flavors in cider (unlike many beers) are more a function of the apple blend than the yeast used. I've found Wyeast 4766 or White Labs 775 to be great choices. They deliver much better apple flavor and aroma. Bear in mind, however, that these yeasts also produce some off-aromas during fermentation. I have to assure my wife that "I didn't do that" when we walk past a carboy.

This is a low stress project; I don't make a starter or use any nutrients. Ambient fall temperatures make it easy to keep fermentation in the 65-70° F (18-21° C) range. I have heard that some cidermakers

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ferment their must at lager temperatures for a slower fermentation—blowing off fewer aromatics due to lower CO₂ production, which results in better flavor and aroma. This sounds intriguing, and I'll probably give it a try this fall.

Sugar and Spice

Sweet cider has an original gravity between 1.050 and 1.055, so I rarely take an O.G. measurement. This will make an excellent standard or common cider—one made with just apples, no adjuncts. Adding adjuncts like brown sugar, molasses, honey, dark corn syrup, or sorghum will not only increase the abv and add complexity to the flavor, but will transform your standard cider into a specialty cider known as apple wine. I don't use plain corn sugar because it won't add any complexity. Just as if I were making beer, I add the adjuncts to the fermenting must over several days to not stress out the yeast. Syrups may sink to the bottom of the carboy, and it will be necessary to gently stir the cider to rouse the yeast and re-suspend the sugar.

Hard cider was made for spices. Don't scrimp; use the freshest, best-quality spices you can find. They're not expensive in such small quantities. Aside from the obvious ones like cinnamon and nutmeg, cloves, ginger, and allspice are excellent choices. (I don't like allspice, but I fear my wife adds it when I'm not looking.) Remember that cider has a more delicate flavor than beer and won't require as much spicing. Add them in small, teaspoon increments; taste and add as needed.

Fruit is yet another variation on the cider theme. My wife Karol likes to use seasonal cranberries for her signature Krapple Cider. She doesn't overdo the cranberries—adding just enough for lovely pink hue, and delicate berry flavor and aroma.

This Is How We Roll

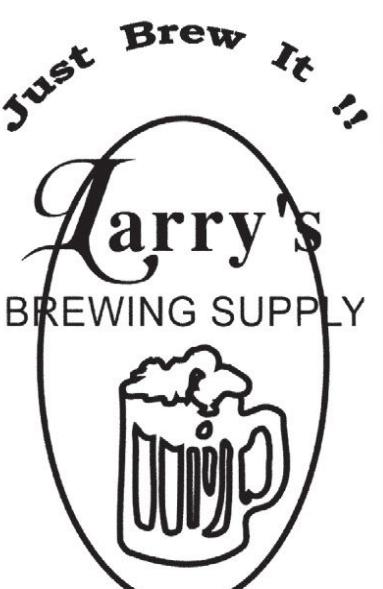
I make hard cider with the intention of producing at least three variations: plain (standard), spiced or fruit with adjuncts (specialty), and New England style—the barleywine of hard ciders. I recommend

that beginners start with a standard cider to get a feel for the taste and then step up to a specialty cider. The sweet cider is purchased the evening before (or that morning) and allowed to warm to room temperature. Meanwhile, I sanitize a carboy, funnel, and air lock. I pour the cider into the carboy, add the yeast, and aerate for a minute with pure oxygen. I can do this during halftime of a Penn State or Steeler game. Fermentation will begin by the next day. There won't be as much foam as with beer produced during fermentation because cider has less protein. Don't be alarmed by the cider's color as it ferments. It will take on a repulsive, cloudy, yellow hue. It's OK. We'll take care of that later.

After about a week, when fermentation has slowed, I transfer the cider to a secondary carboy for clearing and conditioning. The cider will be very cloudy. The haze is caused from the pectin that is present in apples. This can be eliminated with a wine product called pectic enzyme. Add one-and-a-half teaspoons of enzyme per 5 gallons, set the cider aside, and allow it to condition and clear for about four to six weeks. The clearing process seems to take longer during winter months than it does during spring, so perhaps the enzyme activity is temperature dependent.

Now it's time to make the second batch. I add another five gallons of sweet cider to the original carboy, on top of the yeast cake, and aerate. This will become a specialty cider. I add an adjunct like brown sugar, molasses, or honey and allow the must to ferment to completion. Next, I transfer to a secondary fermenter, where I add either spices (in the form of a hot tea) or fruit. The specialty cider is finally transferred to a third carboy for clearing and conditioning.

By this time, the original carboy has accumulated a very large yeast cake. I'll need it for the grand finale, the king of hard cider—New England style cider. I combine several adjuncts with raisins to raise the abv to over 11 percent and add some spices for balance. Some cidermakers also like to add oak chips during conditioning for complexity. This cider will warm you



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bones on the coldest of winter nights.

Like wine, it's possible to adjust the taste of the final product. Grape tannins will add sharpness. Malic acid or acid blend will add tartness. A touch of glycerin will increase body. As with the spices, add in small increments and taste. Fortunately, I've yet to use any of these additives. Perhaps I've been lucky with my apple blends. One popular enhancement is to back-sweeten dry ciders with a can of concentrated apple juice. Potassium sorbate must then be added to prevent fermentation from restarting. Naturally, this cider must be force carbonated rather than bottle conditioned.

Presentation and Bottling

I use the same presentation philosophy for my ciders as I do for my meads: they must be clear and pristine. This can be difficult if they are bottle conditioned. I usually stop my pour a little early to prevent any yeast from entering my glass. Forced carbonation by kegging is the better option. Add enough corn sugar or CO₂ to achieve a carbonation level of 3.0-3.5 volumes. This will give the cider its requisite bubbly sparkle. But don't expect the head to last. The cider's low protein content will cause it to rapidly peter out. Also, don't make the mistake I did. I bottled my first New England cider still rather than trying to carbonate it. This style needs the acidic bite of carbonation for proper balance. When carbonating a New England cider, aim for a moderate—or petillant in cider-speak—level of carbonation of 2.0 to 2.5 volumes. If bottle conditioning, add a half pack of a yeast like Safale US-05 to ensure carbonation.

I age my ciders at least six months, although many cidermakers routinely wait a few years before they even consider drinking them. This is especially true for New England style cider. For this reason, I like to bottle some of the batches in corked, Belgian-style bottles that are great for gifts or special occasions.

There is one caveat with hard cider: its deceptively light body belies a high alcohol content. Standard ciders can have an

abv over 6 percent. The specialty ones clock in at 8-10 percent abv. The sky is the limit for the New England cider. Like a Belgian tripel, it can sneak up on you.

Hard cider in all its forms—standard and specialty—with its delicious flavor and refreshing lightness is a welcome change of pace from the mundane parade of ales and lagers. It's great by itself, with a holiday feast, or during a contemplative moment—with a side of Emmenthaler or Gruyère on crackers.

It's easy to make too, so make hard cider your first thought the next time you walk past the cider display at your local farmers market.

Mark Pasquinelli resides in Elysburg, Pa. with his wife and four cats. He's a member of the PA-Alers Home Brew Club and has been homebrewing since 1995. He likes to brew pale ale, pumpkin ale, and an imperial stout with hallucinogenic qualities.

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BY DENNY CONN



Ask five homebrewers what they like best about homebrewing and you'll get five different answers. Some will say recipe design is their favorite part; others love the smell of grain as they mash in. But I'm willing to bet that no one will say that their favorite thing is sparging.

Let's face it: sparging isn't very glamorous. You're simply trying to get as much sugar out of the grain as possible by adding more water to it. But you know what? I love sparging, maybe more for

philosophical reasons than the actual process. Sparging reminds me that I'm a homebrewer and I have the freedom to do things my own way.

According to John Palmer in *How to Brew!*, "Sparging is the rinsing of the grain bed to extract as much of the sugar from the grain as possible without extracting mouth puckering tannins from the grain husks." Lautering is the separation of the liquid from the grain. We'll define sparging as the process that happens only after the runoff of sweet wort from the mash tun (lautering) has begun. Let's look at the options for sparging.



FLY SPARGING

Continuous or “fly” (short for “on-the-fly”) sparging has been the main method used for the last several hundred years, especially in large commercial breweries. In this method, water (technically referred to as “liquor,” which may or may not have treatments added to it) is slowly added to the top of the grain bed at the same rate as the sweet wort is run off. You must not sparge too fast, or the sugars won’t be rinsed out fully. Your lauter system must be properly designed so that it picks up an even distribution of wort from your mash tun and doesn’t promote “channeling” or “drilling down.” Those are cases where the water tends to rinse only one portion of the grain bed, leaving the sugars in other areas.

Also, because the ability of the grain to buffer pH changes is being continually

diluted, pH can rise above 6 during the sparge, which can lead to extraction of tannins. Because of this, many brewers will acidify their sparge water in order to prevent pH rising to an unacceptable level during a fly sparge. Since the sparge may take an hour or more, many brewers also perform a mashout step to end conversion before sparging. The potential advantages of fly sparging are a higher extraction rate (assuming the design and technique criteria are met) and the fact that you do not have to have a mash tun big enough to hold all your sparge water at once.

“NO SPARGE” BREWING

A “no sparge” brew has all the sparge water added to the mash tun at the end of the mash, before any runoff begins. Because no runoff has started yet, we can think of this as a mash infusion, rather than a true sparge, and therefore this

method can truly be called “no sparge.” This is obviously the easiest method, but the extraction is very poor, usually on the order of 50-60 percent. An advantage is that since all the sugar is in solution at once after the extra water is stirred in, lauter design has little to no effect on efficiency.

BATCH SPARGING

Batch sparging takes a bit of the best from each of these. It’s like the partigyle system, but instead of a separate beer being made from each runoff, the runoffs are combined into a single wort. When you batch sparge, after you recirculate to clear the wort, you completely run off the mash, draining the tun. You then stir in a sparge water addition, vorlauf, and drain again. Because you’re draining, not rinsing as in fly sparging, you can run off as quickly as your system will allow. Since the sugar is

in solution, lauter design will have virtually no effect. The pH increase will usually be minimal (there have been reports of greater pH increases from brewers with very hard water) since you're not continually diluting the buffering power of the grain, and because the sparge goes so fast and you get to a boil so soon, a mashout isn't really necessary. While in theory batch sparging can be less efficient than a perfectly designed fly sparge system, most batch spargers report efficiency on par with fly sparging.

EQUIPMENT

Batch sparging requires no special equipment. You can use whatever system you're already using. But one of the beauties of batch sparging is that you can use simpler equipment than you would for fly sparging and still have great results. That's because of the draining involved in batch sparging. I use a 48-quart (45.4 liter) cooler with a single line of stainless steel braid from a toilet supply line for my lautering system. The length of the braid doesn't

make a great deal of difference. All the draining happens in the last few inches of braid, so 6 inches works as well as 6 feet. As a matter of fact, I've heard from people who have made elaborate patterns with long pieces of braid that their system actually functioned better by reducing the amount of braid used. This is one case where more is not necessarily better.

Being a simple guy, my mash tun is a simple device. I unscrewed the spigot from the cooler and inserted a mini keg bung into the hole where the spigot was. I then ran a piece of vinyl tubing through the bung. On the inside of the cooler, I used a hose clamp to attach the braid to the vinyl tubing. On the outside of the cooler, I inserted a simple nylon valve into the tubing, and attached a longer piece of tubing to the outflow side of the valve.

SCIENCE OR SEAT OF THE PANTS?

For optimum efficiency, each of your two runoff volumes needs to be approximately the same size, and each should be close to half of your total boil volume. There's an excellent paper by Ken Schwartz that describes the process and methodology². Ken also has a spreadsheet to help you calculate water volumes³. If you use the spreadsheet, I'd advise you to not utilize the grain scale-up factor. That assumes batch sparging will be less efficient than fly sparging, which is not necessarily the case. No matter which type of sparging you use, you should always calculate any recipe based on your own system's efficiency. In order for your runoffs to be of equal volume, it's sometimes necessary to add extra water to the mash before running off.



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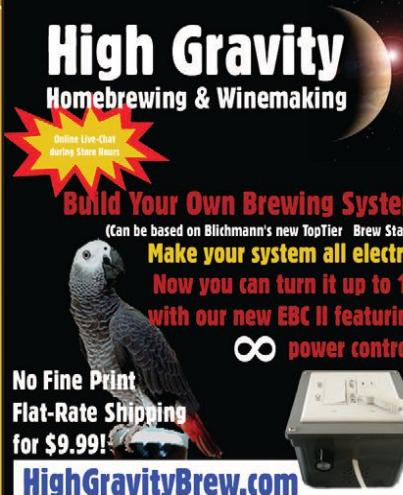
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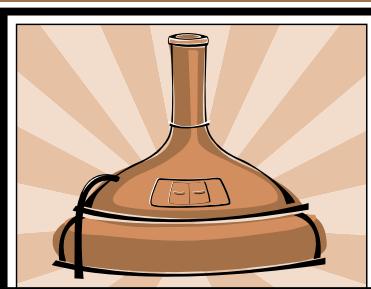


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Here is the basic theory:

R1 (initial runoff volume) = mash water volume – water absorbed by grain (grain absorption is assumed to be 0.1 gal./lb. (8.4 kg/L) for this example since that's the way my system works...use your own figure)

S = Batch sparge water volume

V = Total boil volume (amount needed in kettle for boil)

I = Volume of infusions for a step mash

R1+I+S(1)+S(2)+S(etc.) must equal V

AND R1+I=0.5V

Let's see how this works in a brewing session. Assume a recipe with 10 pounds (4.5 kg) of grain, collecting 7 gallons (26.5 L) of pre boil wort. A mash ratio of 1.25 quarts/pound (2.6 L/kg) would require 12.5 quarts or 3.13 gallons (11.8 L) of strike water. Based on an absorption rate of 0.1 gallon/pound (8.4 kg/L), the mash would absorb 1 gallon (3.8 L) of water, so we'd get 2.13 gallons (8.0 L) of water from the mash. Since we want to collect 3.5 gallons (13.3 L) (or 50 percent of the boil volume), after the mash is complete we'd add 1.38 gallons (5.5 quarts) (5.2 L) of water to the mash tun before

the first runoff. Stir the additional water in, let it sit for a few minutes, then vorlauf (recirculate) until clear and start your runoff. After the runoff, add 3.5 gallons of batch sparge water. Stir it in well, then vorlauf and run off as before. These two runoffs will give us our pre-boil volume of 7 gallons of sweet wort.

My experience with batch sparging over 12 years and hundreds of batches is that I only add that extra water if I predict the two runoffs to be more than a gallon apart from each other. While exactly even runoffs may yield the best extraction, I haven't found the difference to be big enough to overcome my inherent laziness! In many situations, simply increasing the liquor/grist ratio of the mash will yield enough mash runoff that you can avoid doing the extra infusion. You can also simply use the empirical "seat of your pants" method, which is less precise but takes a lot less math. After you run off your wort from the mash, measure how much you have. Subtract that from what you want your total boil volume to be. The answer you get will be how much sparge water to use.

Some brewers prefer to make multiple sparge additions, claiming that it increases their efficiency. I haven't found that to be true of my own brewing. But I do use multiple sparge additions in the case where I'm using so much grain for a batch that I can't fit all the sparge water in the tun at once. My own philosophy is that if you need to make more than two sparge additions, you should either get a bigger mash tun, or switch to fly sparging. Also, if you use more than two sparge additions you should check the pH of the runoff on the later sparges to ensure that the pH hasn't risen above 6.

A BATCH SPARGE WALKTHROUGH

Let's use the water and grain amounts from the example above to walk through a mash and sparge. Do your mash as always, using 10 pounds (4.5 kg) of grain and 12.5 quarts (11.8 L) of water. After the 60 minutes (or whatever mash time you use), heat 5.5 quarts (5.2 L) of water to 185-190° F (85-88° C) and stir it into the mash. This will raise the mash tem-


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perature and add enough water to your mash to get half of your total boil volume from the mash runoff. Now it's time to vorlauf. Just barely crack the valve open and slowly start the runoff into a container of some sort. Once the wort runs clear (which we'll define as "free of chunks"), move the runoff tubing from your vorlauf container to your kettle and slowly pour the vorlauf portion back over the top of the mash. At this point, you can open the valve wide and run off as quickly as your system will allow. During this time, heat up the 3.5 gallons (13.3 L) of sparge water to about 185-190° F (85-88° C). Once your mash tun is completely drained, stir in the sparge water. It's important to stir thoroughly, but not violently, so that the sugar gets dissolved into the water. I generally stir for two to three minutes. Once that's done, simply vorlauf and run off as you did for the mash. That's it! You've just batch sparged. For my system, collecting about 7 gallons (26.5 L) of pre-boil wort takes me about 15 minutes from the time I start my mash runoff until the time I finish my sparge runoff.

I've found batch sparging to be a great, easy-to-learn technique that makes great beer. It's simple enough for a beginning all-grain brewer to use, but robust enough that after 12 years and 375 batches, it's still the system I use. The only downside to me is that it's too fast, but I do three 10+ gallon brews at a time and like the extra time to deal with all of them! Many homebrewers have made award-winning beer by batch sparging, and in all the judging I've done, I've never heard anyone say "This beer tastes like it was batch sparged." It's a simple, effective way to make great beer with minimal hassle and expense. Give it a try and you may never go back to fly sparging.

Denny Conn is a member of the Cascade Brewers Society and the AHA governing committee. He lives in Noti, Ore.

Resources

1. Palmer, John. *How to Brew*. Boulder, CO: Brewers Publications, 2006.
2. <http://home.roadrunner.com/~brewbeer/files/nbsparge.html>
3. <http://home.roadrunner.com/~brewbeer/files/nbsparge.xls>

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2010 NATIONAL HOMEBREW COMPETITION WINNERS!



HOMEBREWER OF THE YEAR

REMI BONNART, Ft. Collins, Colo., Liquid Poets
"Zed's Dead Red," Flanders Red Ale

Homebrewer of the Year goes to the brewer of the Best of Show beer from the 23 beer categories.



Remi Bonnart grew up in Colorado Springs, Colo. to French parents with an appreciation for good food and drink. His father grew up in Northern France and was fond of the beers of the region and helped turn Remi on to the wonderful flavors and variety of craft beers. Bonnart went to Colorado State University in Fort Collins

and quickly became acquainted with local craft beers as well as others from Colorado and beyond. "It never ceases to amaze me the sheer diversity of styles and flavors of beer that are available," he said.

Bonnart was always interested in how this "liquid potion" he loved so much was made. In 1998, a friend gave him a few pieces of homebrewing equipment including a carboy (that he still uses to this day), thermometer and hydrometer. He brewed a few extract batches at an on-premise brewing store and was anxious to start brewing on his own. After reading *The New Complete Joy of Homebrewing* by Charlie Papazian, Bonnart knew this was a hobby he would fall in love with.

After brewing a few extract batches in 2000, he was ready to dive into all-grain brewing. "*The Homebrewer's Companion* (still my brewing bible to this day) gave me the extra knowledge to piece together my own all-grain system, most of which I still use today," said Bonnart. "It is a basic gravity-fed system that has an 8.5-gallon boiling kettle, a 12-gallon mash tun and a 6-gallon hot liquor tank. Over the years I have fine-tuned many things in my brewing, including culturing my own yeast and growing some of my own hops and herbs."

Bonnart enjoys brewing American ales (especially IPAs and pale ales), spiced/fruit beers, German ales and Belgian ales (especially funky things with Brettanomyces/lactic acid bacteria). He has brewed the Flanders Red style for a few years. "I am always amazed at how complex the flavors and aromas of these beers are," he said, "not to mention the challenging fermentation with 'bugs' to achieve such complexities."

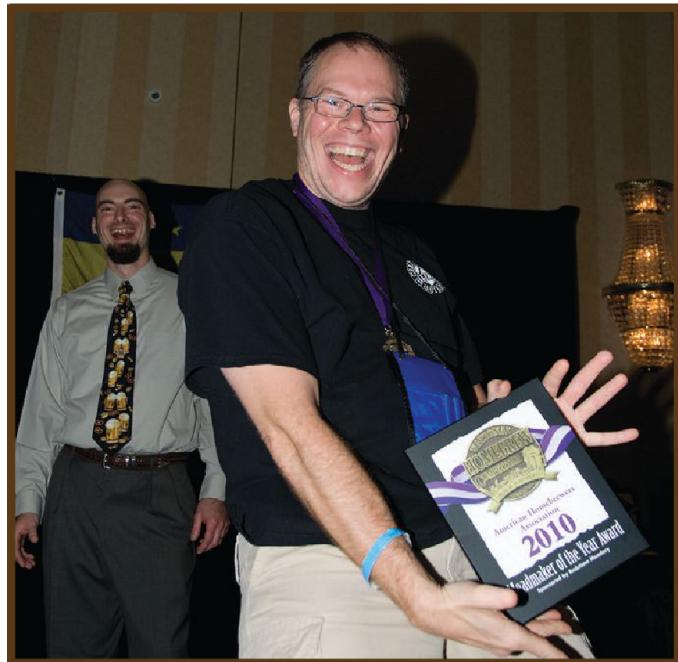


MEADMAKER OF THE YEAR

RODNEY KIBZEY, Lombard, Ill., Chicago Beer Society

"Apple Juiced!" Petillant, sweet sack cyser (Apple Melomel)
Meadmaker of the Year goes to the maker of the Best of Show mead from the three mead categories.

Rodney Kibzey started brewing beer at his Lombard, Ill., home in the fall of 2002 following tours of three Milwaukee breweries. Soon thereafter, he joined two local homebrew clubs, the Chicago Beer Society and the Urban Knaves of Grain. Other members of the clubs include the well-known likes of Randy Mosher, Ray Daniels, Steve



Hamburg, Jeff Sparrow, and Joe Formanek. He recommends that all new homebrewers join a local brew club to draw upon the wealth of knowledge and experience.

Rodney has also been actively involved in judging many regional and national competitions as a BJCP judge since 2003, currently holding a Certified rank. He has been fortunate to have experienced much success in homebrew competitions over the years. His biggest achievements include winning the 2007 Sam Adams Longshot Homebrew Competition with his German weizenbock, and now the 2010 NHC Meadmaker of the Year award.

He made his first ever mead (cyser) in 2003. Since then, he has made a cyser each fall with apple juice from his home state of Michigan and honey from various sources. The 2010 NHC winning mead was made in the fall of 2006, with the honey coming from Miller's in California and the apple juice from Hills Brothers Orchard near Grand Rapids, Mich. This is his first mead medal at the NHC.

He feels fortunate to count among his friends the six previous Meadmaker of the Year winners. Kibzey said they have been a wealth of knowledge and each has been willing to provide valuable advice about the mead making process.

CIDERMAKER OF THE YEAR

ANJIE WATTS, Alpharetta, Ga.,

Brewmasters of Alpharetta

Applewine

Cidermaker of the Year goes to the Best of Show cider from the two cider categories.



Brewing everything from American light hybrids to Russian Imperial Stouts, her achievements in brewing led to numerous ribbons while competing for her club, Brewmasters of Alpharetta in the AHA Southeast Region.

Confidence gained in competitions drove Anjie to begin experimentation in wines, which finally found her developing exotic meads and ciders. Her crowning cider achievement is the AHA 2010 gold medal in Category 28 as well as Cidermaker of the Year for 2010. Her



award-winning cider is based on robust, yet slightly tart, Arkansas Black Apple, grown on the Dozier Family Farm and aged for over a year with a touch of cinnamon. The final cider is light, refreshing and carries a slightly pink visual hue with a subtle hint of spice that brings forth a rich apple flavor that lightly dances across the taste buds. Anjie is currently experimenting with all kinds of brewing in an effort to continue her education as she looks for professional opportunities in the craft beverage industry.

NINKASI WINNER

GORDON STRONG, Beavercreek, Ohio,

Saint Paul Homebrewers Club

1 Gold, 2 Silver and 1 Bronze Medal

The Ninkasi Award goes to the winningest brewer in the second round of the National Homebrew Competition.



Gordon Strong successfully defended his title to win the Ninkasi Award for an unprecedented third time. "That's it—I'm done," he was heard to say over chants of "three-peat" from his club, the Saint Paul Homebrewers Club. Asked for clarification, Strong explained that "competing at this level takes a huge amount of effort, and an equal amount of luck; I think I'd rather go out on top than risk bringing it weak."

Strong allows that while he may still compete in future NHCs, he will not be actively defending his title. "This year I was focusing more on my meads, and I'd like to continue to work on them," he said. The effort clearly paid off, since three of his four medals this year were for meads. He credits his club with helping him raise his game on meads: "Nobody makes better meads than the SPHBC—learning from them and competing with them has definitely made me a better meadmaker."

This year was the second time he has won the Ninkasi in a tie-breaker. "I guess that's another reason to enter a lot in the first round—those medals are used to break ties," he said. He won a silver medal with an American barleywine ("a five-year-old hop screamer like an old school Bigfoot"), a gold medal with a vanilla-cinnamon mead ("I chose tupelo honey to go with the spices; it's like a cinnamon roll"), a silver medal with a black currant, tart cherry and blackberry melomel ("I love black currants, but they are often too intense by themselves"), and a bronze medal with a muscat pымent ("orange blossom and tupelo honey blended well with the grape character, like a late harvest wine").

While not brewing beer and making mead, Strong is the president of the BJCP, a Grand Master V judge, and technical editor of *Zymurgy*. He is currently working on his first book, an advanced all-grain brewing book due out next spring from Brewers Publications.

RUNNERS UP: First: Stephen Northcutt, Vallejo, Calif.; Second: Norman Jufer, Ontario, Calif.

HOMEBREW CLUB OF THE YEAR

DIABLO ORDER OF ZYMIRACLE
ENTHUSIASTS, Concord, Calif.

The Homebrew Club of the Year goes to the winningest club in the National Homebrew Competition and the six AHA Club-Only Competitions.



The Diablo Order of Zymiracle Enthusiasts (DOZE) of Concord, Calif. was crowned Homebrew Club of the Year at the 2010 National Homebrew Competition. They unseated three-time defending champion Saint Paul Homebrewers Club on their home turf in Minnesota.

DOZE's mission is to "focus on quality beer and help members brew the best beer possible." DOZE is comprised of roughly 60 members who meet monthly in Walnut Creek, Calif. to discuss brewing techniques, recipe creation, style analysis, brewing equipment and gadgets, as well as sample homebrew for feedback and suggestions. DOZE has many recently certified BJCP judges, stewards, cellar masters and other volunteers who actively support Northern California and national homebrew competitions.

DOZE amassed 214 points in the first and second rounds of the NHC and the 2009-10 AHA Club-Only Competitions, while the Saint Paul Homebrewers Club finished with 202 points. The Brewing Network was close behind with 200 points.

DOZE had a strong showing at the NHC with four gold medals, three silvers and a bronze after advancing 19 brewers and 43 entries into the final round. Nathan Smith won gold in the Light Lager category, while the duo of Stephen Northcutt and Mark Ristow won two golds in Bock and Standard Cider and Perry. Scott Thomas won the gold medal in the Strong Ale category.

RUNNERS UP: First: Saint Paul Homebrewers Club, Saint Paul, Minn. Second: The Brewing Network Air Waves, Pacheco, Calif.



GAMBRINUS CLUB AWARD

MECA BREWERS, Shelbyville, Ind.

The Gambrinus Club Award goes to the club with the most final-round points per number of entries from the club in the National Homebrew Competition.

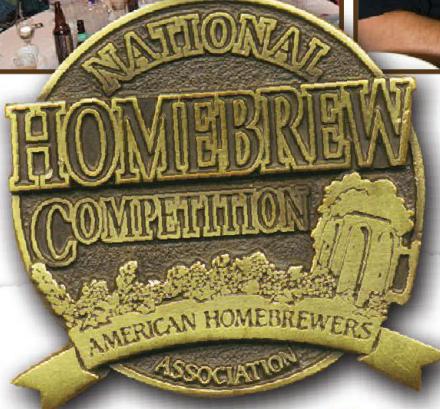
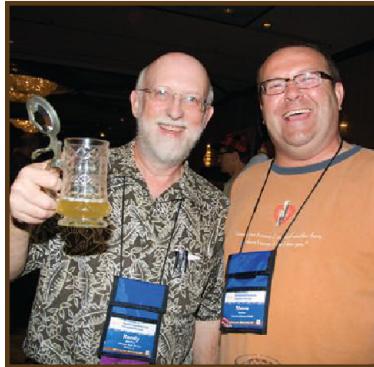


In its second year, the Gambrinus Club Award (named for King Gambrinus, the patron saint of beer) was won by the MECA Brewers of Shelbyville, Ind. To be eligible, clubs must have a minimum of five club members entering the first round, and a minimum of two club members advancing to, and at least one entry placing in, the final round of the competition. Six points are awarded for first place, four points for second place, and two points for third place.

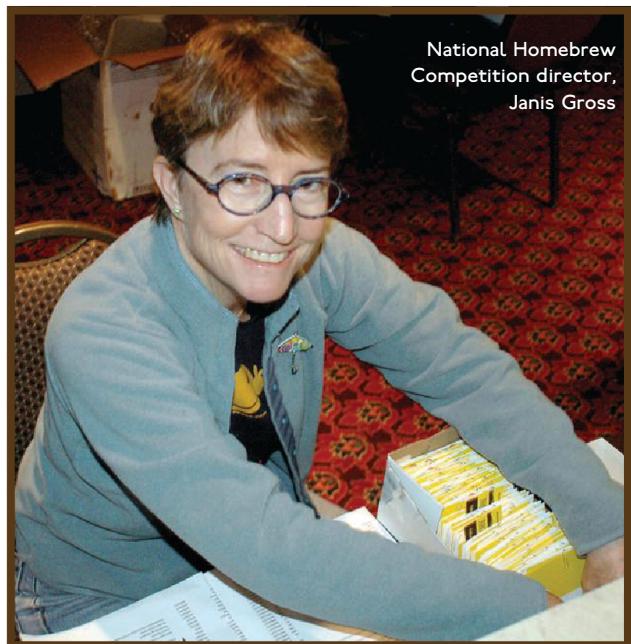
MECA Brewers had five club members send 26 entries to the NHC, and three club members advanced four entries to the final round. In the final round, two of the club's entries medaled, with Keith Baute and John Showalter of Indianapolis winning gold in the American Ale category (509 entries, the most of any category); and Michael Pearson of Indianapolis winning bronze in India Pale Ale.

MECA (an acronym for the professions of the founding members: Metrology, Engineering, Chemistry and Academia) started in 2000 with just three members and now has 10 members. Each new member is enrolled in the MECA Brewmaster Program, an educational program designed to grow awareness of world beer styles, encourage the technical brewing knowledge required to make every BJCP style of beer, and promote general brewing excellence within the club. The club's main goal is to create world-class beer through camaraderie, sharing of information, technical excellence, and general beer geekiness.

RUNNERS UP: First: Brewmasters of Alpharetta, Johns Creek, Ga. Second: Ann Arbor Brewers Guild, Saline, Mich.



2010 GOLD MEDAL RECIPES



National Homebrew Competition director, Janis Gross

The 2010 National Homebrew Competition had a record 6,287 entries from a record 1,599 homebrewers of beer, mead, and cider. Nine regional sites across the United States and one in Canada accepted first-round entries from 28 categories, and entries that advanced to the final round were judged June 17. These are the gold medalists' recipes from the awards ceremony celebrated June 19 in Minneapolis, Minn. at the 32nd annual National Homebrewers Conference. **NHC director Janis Gross provided details on this year's colossal event.**

Zymurgy: The number of entries this year saw an increase of 1,121 from 2009's 5,166 entries, yet the number of those advancing to the final round remained about the same as last year. This must result in higher quality beers for the final round judging, so the judges obviously had a much tougher job this year. How did they do, and what did they think?

Janis Gross: The dramatic increase in entries from 5,166 in 2009 to 6,287 this year meant the first-round competitions had significantly more entries to evaluate in order to choose the top beers to send to the final round. Thankfully, the regions that reached the entry limit of 750 (Midwest and Northeast), or nearly reached the limit (Old West, with 748) were prepared to judge that number of entries.

In general, the number of entries qualifying for the final round is determined by the number of first-round regions. Every region sends the top three entries in each of the 28 categories, for a total of 84 qualifying entries per region. With 10 regions, that means that 840 entries can qualify for the final round, which has been the case for the past three years. The number of entries judged in the final round is usually less; some regions qualify fewer than 84, some entries are not submitted, and, unfortunately, there is some

attrition due to shipping problems. For the last three years, the number of entries judged in the final round has been around 760.

The quality of the entries goes up each year. Kristen England was the judge coordinator for the final round, and he made sure that all of the judges held BJCP certification. LuAnn Fitzpatrick, who worked on the 2010 World Beer Cup in April and who also worked on the competition staff in Denver during the 2007 National Homebrewers Conference, put together an experienced and capable group of stewards. The competition organizer, Joe Gerteis, pulled it all together and the competition ran like clockwork. The competition even had a three-person office staff that collected all of the scoresheets and prepared them for distribution after the awards ceremony. This final round competition was the best run I have experienced. It certainly didn't hurt that the room for the competition was much larger than we've had in the past.

Zymurgy: Were there any changes in first-round sites? As the competition grows, will it be necessary to keep adding first-round sites?

JG: This year we had regional site changes in the Midwest (from Minneapolis, Minn. to Madison, Wis.), Great Lakes (from Warrenville, Ill. to Indianapolis, Ind.), and the Northwest (from Portland, Ore. to Seattle, Wash.); plus we had new organizers (Brian Cooper and Jon Koerber) in the West Region. Considering the sudden increase in entries



CONVERTING TO EXTRACT

Most all-grain recipes can be converted to extract recipes by substituting the base malt (e.g. pale malt or pilsner malt) with light malt extract. Multiply the pounds of base grain by 0.73 for liquid malt extract or by 0.60 for dry malt extract. Specialty grains can be steeped in water at 160° F (71° C) for 30 minutes or so and rinsed with hot water. If you are doing a partial wort boil [as opposed to boiling the entire 5 gallons (19L) of a 5-gallon batch], you will want to increase your bittering hops slightly to make up for the increased concentration of the wort, which decreases hop utilization.

You can always ask your local homebrew supply shop owner to help you convert a recipe.

and entrants this year, these new organizers faced a very difficult task.

I will be discussing possible solutions to managing the competition growth with the AHA Governing Committee's Competition Sub-Committee. We will see if any of the competition rules should be changed or if new ones are needed, and we will definitely discuss the viability of adding another region. Keep in mind that each new region will potentially add another 84 entries to the final round competition. In addition, creating a new region means I must find the competition infrastructure needed (a large homebrew club that has competition organizers, a shipping location, competition location, judges, stewards, etc.), which is not a trivial matter. All of this will be discussed along with other possible solutions, and we should have the changes and additions to the competition figured out by December.

Zymurgy: Sponsorship seems to be very consistent from year to year, and there are only a few categories that remain unsponsored. Is this due to the NHC's steadily increasing popularity, or that of homebrewing and craft brewing in general?

JG: This year we added MoreBeer as a sponsor for the Gambrinus Club Award. MoreBeer and some of the category sponsors also paired prizes with their sponsored award or category, something I will encourage next year as well. The National Homebrew Competition is grateful for all of the NHC sponsors and their continued support of the NHC and homebrewing in general. With the growth we've seen

in craft brewing, and the obvious growth we're experiencing in homebrewing right now, eventually all of the categories will be sponsored.

Zymurgy: Online registration has been ongoing now for a while, but 2010 entrants had to submit recipes online as well. Apart from allowing the recipes printed in *Zymurgy* to offer greater detail than ever before, how is this beneficial?

JG: This has been a huge step for us this year, and it has gotten us closer to our paper reduction goals and information portability, which is a great benefit to all of us. In 2009, the recipes for the final round completely filled two 3-inch binders, so they were shipped on the truck from the conference in Oakland, Calif. This year, having the recipes entered in a Google form allowed access to the winning recipes the day after the competition; these are the recipes in this issue of *Zymurgy*.

Zymurgy: How was the club competition this year? Are more clubs vying for the coveted Club of the Year prize, or are you seeing consolidation?

JG: The club competition was very exciting! For one thing, the lead from the first round changed hands, and the top three clubs are separated by only 14 points. Contrast this with last year's 160-point spread separating first from third. This year, only 12 points separate the first-place club, Diablo Order of Zymiracle Enthusiasts (DOZE), from second place, the Saint Paul Homebrewers Club, and a meager two points separates the second-place from the third-place club, The Brewing Network. Having such small point differences really shows how important competing in the Club-Only Competitions can be.

Zymurgy: Any thoughts on changes for next year's competition, and is the current organizational infrastructure ready if we see another big jump in entry numbers?

JG: Just like this year, there will be changes in the location of several first-round regional sites. I know how draining it can be for the organizers and their clubs to organize the competitions. Ultimately, I'd like to have a three-site rotation in every region. This requires a lot of competition infrastructure to be in place, and often the rotation starts

with an e-mail from an interested club in the region.

There are several items I've collected in my "Next Year" list for dealing with competition growth that I need to discuss with the AHA GC Competition Sub-Committee. I'm already excited to start working on the 2011 National Homebrew Competition!

Amahl Turczyn Scheppach is a former craft brewer and associate editor of *Zymurgy*, and now brews at home in Lafayette, Colo.

CATEGORY 1: LIGHT LAGER



174 Entries

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NATHAN SMITH, San Leandro, Calif.,
Diablo Order of Zymiracle Enthusiasts (DOZE)

GOLD MEDAL
"461 Dortmund Export"
Dortmunder Export

Ingredients for 11 U.S. gallons (41.64 liters)

20.0	lb (9.07 kg) Weyermann Pils malt
1.0	lb (0.45 kg) Weyermann Vienna malt
4.0 oz	(113 g) American Wheat malt
1.75 oz	(49.6 g) Mt. Hood whole hops, 5.2% alpha acid (60 min)
0.5 oz	(14 g) Spalt pellet hops, 5.14% alpha acid (20 min)
2.0 L	White Labs WLP830 lager yeast stir plate starter
2.5 vol.	forced CO ₂ to carbonate

Original Specific Gravity: 1.048

Final Specific Gravity: 1.011

Boiling Time: 90 minutes

Primary Fermentation: 3 weeks at 52° F (11° C)

Diacetyl rest: 48 hours at 62° F (17° C)

Directions

Treat water with 5.5 g calcium chloride. Use a single infusion mash at 148° F (64° C) for 60 minutes.

RUNNERS-UP

Silver Medal: Kerry Martin, Austin, TX, Munich Helles, Austin Zealots
Bronze Medal: Douglas Griffin, Virginia Beach, VA, Lite American Lager, Beer and Ale Research Foundation (BARF)

CATEGORY 2: PILSNER



183 Entries

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MICHAEL AGNEW, Minneapolis, Minn.,
Minnesota Home Brewers Association

GOLD MEDAL

"BoPils"
Bohemian Pilsner

Ingredients for 3.5 U.S. gallons (13.25 L)

6.75 lb	(3.06 kg) German Pils malt
4.0 oz	(113 g) dextrin malt
0.6 oz	(17 g) Sterling pellet hops, 6% alpha acid (60 min)
0.7 oz	(20 g) Sterling pellet hops, 6% alpha acid (30 min)
0.3 oz	(8.5 g) Sterling pellet hops, 6% alpha acid (10 min)
0.75 oz	(21 g) Sterling pellet hops, 6% alpha acid (0 min) Wyeast No. 2001 lager yeast starter
2.0 oz	(57 g) corn sugar to prime
0.5 tsp.	Irish moss in boil

Original Specific Gravity: 1.058

Final Specific Gravity: 1.017

ABV(%): 5.6

IBUs: 41

SRM: 3.3

Boiling Time: 90 minutes

Primary Fermentation: 14 days at 55° F (13° C)

Secondary Fermentation: 30 days at 33° F (1° C)

Directions

Mash 15 minutes at 122° F (50° C), 15 minutes at 148° F (64° C) and 60 minutes at 155° F (68° C). Decoct 1/3 of mash to hit mashout temp of 169° F (76° C).

RUNNERS-UP

Silver Medal: Jeffrey Lewis, Hilliard, OH, German Pilsner (Pils), Scioto Olentangy and Darby Zymurgists (SODZ)
Bronze Medal: Shawn Scott, McAlester, OK, Bohemian Pilsner, Fellowship of Oklahoma Ale Makers (FOAM)

CATEGORY 3: EUROPEAN AMBER LAGER



145 Entries

Sponsored by
How to Brew
by John Palmer

MARK SCHOPPE, Austin, Texas, Austin Zealots

GOLD MEDAL

"Maerzen"
Oktoberfest/Marzen

Ingredients for 5.5 U.S. gallons (20.82 L)

10.0 lb	(4.54 kg) Vienna malt
4.0 oz	(113 g) Munich malt
4.0 oz	(113 g) dextrin malt
4.0 oz	(113 g) melanoidin malt
4.0 oz	(113 g) acid malt
0.5 oz	(14 g) Centennial whole hops, 11.3% alpha acid (FWH)
0.5 oz	(14 g) Hallertau pellet hops, 3.9% alpha acid (15 min)
0.5 oz	(14 g) Hallertau pellet hops, 3.9% alpha acid (5 min)
1 tablet	Whirlfloc
	White Labs WLP833 German Bock lager yeast starter
2.8 vol	forced CO ₂ to carbonate

Original Specific Gravity: 1.058

Final Specific Gravity: 1.014

ABV (%): 5.8

IBUs: 21

SRM: 6

Boiling Time: 105 minutes

Primary Fermentation: 14 days at 50° F (10° C)

Secondary Fermentation: 6 weeks at 35° F (2° C)

Directions

Infusion mash for 90 minutes at 152° F (67° C). Add first hops during runoff to kettle and boil for 105 minutes.

RUNNERS-UP

Silver Medal: Damon Lewis, Orlando Guerra, Carrollton, TX, Vienna Lager, North Texas Homebrewers Association
Bronze Medal: Virg Redman, Vacaville, CA, Oktoberfest/Märzen

CATEGORY 4: DARK LAGER



144 Entries

Sponsored by Briess
Malt & Ingredients
Company

SHEKHAR AND PAULA NIMKAR,
Swampscott, Mass.

GOLD MEDAL

"Tara's Slam Dunkel"
Munich Dunkel

Ingredients for 5 U.S. gallons (18.93 L)

8.0 lb	(3.63 kg) Munich malt
2.0 lb	(0.9 kg) Pilsner malt
4.0 oz	(113 g) chocolate malt
0.66 oz	(19 g) Hallertau hops, 3% alpha acid (45 min)
0.33 oz	(9 g) Hallertau hops, 3% alpha acid (15 min)
	Wyeast No. 2206 Bavarian lager yeast (1 qt starter)
2.4 vol	forced CO ₂ to carbonate
1 tablet	Whirlfloc to clarify (20 min)
0.5 tsp	calcium carbonate (in mash, to adjust pH to 5.3)

Original Specific Gravity: 1.060

Final Specific Gravity: 1.020

Boiling Time: 90 minutes

Primary Fermentation: 14 days at 55° F (13° C)

Secondary Fermentation: 3 weeks at 41° F (5° C)

Directions

Use a double decoction mash. Mash grains at 122° F (50° C) for 30 min. Use 1.25 qts/lb. Decoct 1/3 of mash (thick portion) and raise to 158° F (70° C). Rest for 20 min. Raise temp and boil for 20 min. Add to main mash and rest at 149° F (65° C) for 20 min. For second decoction, pull 1/3 of mash and raise to 158° F (70° C) for 20 min. Bring to boil and add to main mash to mash out at 167° F (75° C). Sparge with 167° F (75° C) sparge

water treated with 1/2 tsp calcium carbonate to collect seven gallons. Boil for 90 min. Cool to 65° F (18° C) and add yeast to adequately aerated wort. Once visible signs of fermentations are observed reduce temp of fermentation to 55° F (13° C).

RUNNERS-UP

Silver Medal: Lyle Brown, Fredericksburg, VA, Schwarzbier (Black Beer), Brewers United for Real Potables (BURP)
Bronze Medal: Leah Dienes, Louisville, KY, Schwarzbier (Black Beer), Louisville Area Grain and Extract Research Society

CATEGORY 5: BOCK



191 Entries

Sponsored by
Washington Hop
Commission

STEPHEN NORTHCUTT AND MARK RISTOW, Vallejo, Calif., Diablo Order of Zymiracle Enthusiasts (DOZE)

GOLD MEDAL

"Isebock"
Eisbock

Ingredients for 10 U.S. gallons (37.85 liters)

25.0 lb (11.3 kg) German Munich Malt 8L
 4.0 lb (1.8 kg) Caramunich 60° 60L
 5.0 lb (2.26 kg) German Vienna Malt 3L
 1.5 oz (42 g) Premiant pellet (60 min)
 1.0 oz (28 g) Spalt pellet (30 min)
 WLP838 Southern German Lager yeast

Directions

Protein rest for 20 minutes at 122° F (50° C). Saccharification rest 60 minutes at 153° F (67° C). Mash out 30 minutes at 170° F (77° C). Sparge 60 minutes at 179° F (82° C). Mash water 1.24 quarts per pound. Boil for 120 minutes. Lager for six months then filter. Condense volume by freezing and transferring. Force carbonate and age for two years in bottle.

RUNNERS-UP

Silver Medal: Stephen Northcutt, Mark Ristow, Vallejo, CA, Maibock/Helles Bock, Diablo Order of Zymiracle Enthusiasts (DOZE)
Bronze Medal: Todd Murley, Orono, MN, Doppelbock, Saint Paul Homebrewers Club

CATEGORY 6: LIGHT HYBRID BEER



246 Entries

Sponsored by
Cargill World Select
c/o Cargill Malt

HEATH HAYNES, Los Angeles, Calif., Pacific Gravity Home Brewers Club

GOLD MEDAL

"Helios Kölsch"
Kölsch

Ingredients for 5.5 U.S. gallons (20.82 L)

9.2 lb (4.17 kg) German Pilsner malt
 8.0 oz (227 g) wheat malt
 2.0oz (57 g) Hallertau Hersbrucker hops, 3% alpha acid (60 min)
 1L Wyeast No. 2565 Kolsch yeast starter
 2.4 vol forced CO₂ to carbonate gelatin to clarify (in secondary)

Original Specific Gravity: 1.047

Final Specific Gravity: 1.010

ABV (%): 4.82

IBUs: 21

SRM: 3.5

Boiling Time: 90 min

Primary Fermentation: 15 days at 60° F (16° C)

Secondary Fermentation: 50 days at 50° F (10° C)

Tertiary Fermentation: 1 month at 37° F (3° C)

Directions

Water: 50% West Los Angeles and 50% distilled. Mash grains at 150° (66° C) for 75 minutes. Mash out at 168° F (76° C) for 15 minutes.

RUNNERS-UP

Silver Medal: Dan O'Leary, Puyallup, WA, American Wheat or Rye Beer, Impaling Alers
Bronze Medal: Dave Beyer, La Crosse, WI, American Wheat or Rye Beer, The Brewing Network

CATEGORY 7: AMBER HYBRID BEER



152 Entries

Sponsored by
Grape & Granary

NORMAN JUFER, Ontario, Calif., Inland Empire Brewers

GOLD MEDAL

"NJ Steam 143"
California Common Beer

Ingredients for 5.9 U.S. gallons (22.33 L)

4.12 lb (1.87 kg) Crisp Maris Otter pale malt
 3.0 lb (1.36 kg) Rahr two-row malt
 1.5 lb (0.68 kg) Weyermann Munich malt
 8.0 oz (227 g) Briess Victory malt
 2.0 oz (57 g) pale chocolate malt
 1.16 oz (33 g) Northern Brewer hops, 6% alpha acid (60 min)
 1.41 oz (40 g) Northern Brewer hops, 6% alpha acid (15 min)
 1.31 oz (40 g) Northern Brewer hops, 6% alpha acid (1 min)
 1 pint thick slurry (with trub) of DLC SafAle K-97 Dry Yeast
 1 tablet Whirlfloc
 2.3 vol. forced CO₂ to carbonate

Original Specific Gravity: 1.054

Final Specific Gravity: 1.011

ABV (%): 5.5

IBUs: 40

SRM: 11

Boiling Time: 85 minutes

Primary Fermentation: 2 days at 58° F (14° C)

Secondary Fermentation: 21 days at 59° F (16° C)

Tertiary Fermentation: 14 days at 34° F (1° C)

Directions

Mash at 153° F (67° C) for 60 minutes. Mash out at 165° F (74° C). Batch sparge. Water treated with 1.3 g CaCl, 0.8 g CaSO₄, and lactic acid. Chill to 58° F (14° C).

RUNNERS-UP

Silver Medal: Ryan Barto, Pacheco, CA, Düsseldorf Altbier, Diablo Order of Zymiracle Enthusiasts (DOZE)
Bronze Medal: Scott Lothamer, Moraga, CA, Northern German Altbier, Diablo Order of Zymiracle Enthusiasts (DOZE)

CATEGORY 8: ENGLISH PALE ALE



187 Entries

Sponsored by
St. Louis Wine
& Beer Making

MATT AND JAKE TUCKER, Oviedo, Fla.,
Central Florida Homebrewers

GOLD MEDAL

"Guvnah"
Extra Special/Strong Bitter
(English Pale Ale)

Ingredients for 5.25 U.S. gallons (19.87 L)

9.0 lb	(4.08 kg) Golden Promise pale malt
1.0 lb	(0.45 kg) 40°L crystal malt
8.0 oz	(227 g) toasted (~25°L) Maris Otter malt
8.0 oz	(227 g) honey malt
8.0 oz	(227 g) flaked barley
1.0 oz	(28 g) Styrian Goldings pellet hops, 5.2% alpha acid (FWH)
1.25 oz	(35 g) Willamette whole hops, 6.4% alpha acid (60 min)
1.0 oz	(28 g) Willamette whole hops, 6.4% alpha acid (5 min)
1 oz	(35 g) Styrian Goldings whole hops, 5.2% alpha acid (0 min)
	White Labs WLP 011 European ale yeast starter
	Wyeast yeast nutrient
2.4 vol	forced CO ₂ to carbonate
	Irish moss to clarify

Original Specific Gravity: 1.064

Final Specific Gravity: 1.017

ABV (%): 6.1

IBUs: 44

SRM: 11

Boiling Time: 75 minutes

Primary Fermentation: 66° F (19° C)

Directions

Mash grains at 154° F (68° C) for 60 minutes. Mash out at 167° F (75° C).

RUNNERS-UP

Silver Medal: Ronald Price, Jr, Smyrna, DE, Extra Special/Strong Bitter (English Pale Ale)

Bronze Medal: Greg Sellek, Verona, WI, Special/Best/Premium Bitter, Madison Homebrewers and Tasters

CATEGORY 10: AMERICAN ALE



509 Entries

Sponsored by
BJ's Restaurant
& Brewery

KEITH BAUTE AND JOHN SHOWALTER

Indianapolis, Ind., MECA
Brewers

GOLD MEDAL

"Opening Day Pale Ale"
American Pale Ale

Ingredients for 6.25 U.S. gallons (23.66 L)

13.0 lb	(5.9 kg) pale malt
1.0 lb	(0.45 kg) biscuit malt
1.0 lb	(0.45 kg) 20°L crystal malt
1.0 lb	(0.45 kg) torrified wheat
1.0 oz	(28 g) Centennial hops, 8% alpha acid (30 min)
1.0 oz	(28 g) Simcoe hops, 12% alpha acid (30 min)
1.0 oz	(28 g) Centennial hops, 8% alpha acid (10 min)
1.0 oz	(28 g) Simcoe hops, 12% alpha acid (10 min)
1.0 oz	(28 g) Centennial hops, 8% alpha acid (0 min)
1.0 oz	(28 g) Simcoe hops, 12% alpha acid (0 min)
1.0 oz	(28 g) Centennial hops, 8% alpha acid (dry)
1.0 oz	(28 g) Simcoe hops, 12% alpha acid (dry)
2.75 vol.	forced CO ₂ to carbonate
1 Tbs	Irish moss (20 min)
	Servomyces yeast nutrient (10 min)

Original Specific Gravity: 1.060

Final Specific Gravity: 1.013

ABV (%): 6

IBUs: 53.3

SRM: 8.6

Boiling Time: 60 min

Primary Fermentation: 7 days at 64° F (18° C)

Secondary Fermentation: Dry hop for 4 weeks in secondary.

Directions

Water treated with Burton salts. Mash grain at 153° F (67° C) for one hour.

RUNNERS-UP

Silver Medal: Gregory Robles, Livermore, CA, American Brown Ale, Mad Zymurgists
Bronze Medal: Duane Evans, Owasso, OK, American Brown Ale, Fellowship of Oklahoma Ale Makers (FOAM)

CATEGORY 11: ENGLISH BROWN ALE



199 Entries

Sponsored by
Alternative Beverage

DAN GEORGE, Westerville, Ohio, Scioto Olentangy and Darby Zymurgists (SODZ)

GOLD MEDAL

"Thomas Toes Mild"
Mild Ale

Ingredients for 5 U.S. gallons (18.93 L)

7.0 lb	(3.18 kg) Maris Otter pale malt
1.0 lb	(0.45 kg) 75L crystal malt
6.0 oz	(170 g) chocolate malt
6.0 oz	(170 g) Victory malt
1.0 oz	(28 g) Carafa III
0.5 oz	(14 g) East Kent Goldings hops, 5% alpha acid (60 min)
0.25 oz	(14 g) East Kent Goldings hops, 5% alpha acid (15 min)
1 tsp	Irish moss (15 min)
	White Labs WLP002 ale yeast
	Forced CO ₂ to carbonate

Original Specific Gravity: 1.037

Final Specific Gravity: 1.010

Boiling Time: 90 minutes

Primary Fermentation: 7 days at 66-70° F (19-21° C)

Directions

Mash grain for 60 minutes at 154° F (68° C). Include 1/2 tsp of gypsum in the reverse osmosis mash water. Sparge with 170° F (77° C) water. Include 1/2 tsp of gypsum in the RO sparge water. Collect 6.5 gallons of wort in the brew kettle. You should end up with 5 gallons of wort after the 90 minute boil.

RUNNERS-UP

Silver Medal: Greg Rasmussen, Forestville, CA, Southern English Brown Ale, Sonoma Beerocrats
Bronze Medal: Andrew Korty, Indianapolis, IN, Mild Ale, Foam Blowers of Indiana (FBI)

CATEGORY 12: PORTER



293 Entries

Sponsored by
Deschutes Brewery

KARL KING, Colleyville, Texas

GOLD MEDAL

"Three Kings Baltic Porter"
Baltic Porter

Ingredients for 6 U.S. gallons (22.71 L)

13.0 lb	(5.9 kg) Maris Otter pale malt
2.0 lb	(0.9 kg) Briess dry malt extract
0.85 lb	(386 g) caramel Munich malt
0.65 lb	(295 g) Fawcett chocolate malt
8.0 oz	(227 g) 150° L crystal malt
4.0 oz	(113 g) chocolate malt
4.0 oz	(113 g) dextrin malt
1.45 oz	(41 g) Saaz pellet hops, 5.8% alpha acid (60 min)
1.65 oz	(45 g) Hallertau pellet hops, 4.6% alpha acid (60 min)
0.3 oz	(8.5 g) Hallertau pellet hops, 4.6% alpha acid (10 min)
	White Labs WLP 830 German Lager yeast starter
	Forced CO ₂ to carbonate
	Whirlfloc to clarify (15 min)

Original Specific Gravity: 1.086

Final Specific Gravity: 1.020

ABV (%): 8.8

IBUs: 52

SRM: 39

Boiling Time: 110 min

Primary Fermentation: 52° F (11° C)

Directions

Mash grains at 155° F (68° C) for 60 minutes. Batch sparge.

RUNNERS-UP

Silver Medal: Jason Popish, Fruita, CO, Robust Porter
Bronze Medal: Wayne Otterbourg, John Emery, Marietta, GA, Brown Porter, Brewmasters of Alpharetta

CATEGORY 13: STOUT



477 Entries

Sponsored by
Brew & Grow

GLENN QUINTING, Timonium, Md., Chesapeake Real Ale Brewers Society (CRABS)

GOLD MEDAL

"Oatmeal Stout"
Oatmeal Stout

Ingredients for 10 U.S. gallons (22.71 L)

18.0 lb	(8.16 kg) British pale malt
2.0 lb	(0.9 kg) flaked oats
1.5 lb	(0.68 kg) Victory malt
1.0	lb (0.45 kg) black barley malt
12.0 oz	(340 g) chocolate malt
12.0 oz	(340 g) pale chocolate malt
1.0 lb	(0.45 kg) 80 L crystal malt
0.2 oz	(5.7 g) brewers licorice (in boil, 60 min)
3.6 oz	(102 g) East Kent Golding pellet hops, 4.95% alpha acid (60 min)
2.0 L	White Labs WLP 002 ale yeast starter
2.5 vol.	forced CO ₂ to carbonate
1 tsp	yeast energizer

Original Specific Gravity: 1.060

Final Specific Gravity: 1.018

ABV (%): 5.51

IBU: 35

SRM: 33.5

Boiling Time: 75 minutes

Primary Fermentation: 14 days at 65° F (18° C)

Directions

Mash grains at 154° F (68° C) for 90 minutes. For oats: Spread oats out on cookie sheets. Sprinkle oats with water, turning to lightly saturate. Bake for 15-20 minutes at 300° F, turning and mixing midway through. Allow oats to sit in brown paper bag or empty cereal box for 1-2 weeks so volatile/bitter flavors smooth out.

RUNNERS-UP

Silver Medal: Paul Gagnon, Santee, CA, American Stout, QUAFF
Bronze Medal: Bryan Jamrosz, St Louis, MO, Russian Imperial Stout, Innovative Brewers of Saint Louis

CATEGORY 14: INDIA PALE ALE



387 Entries

Sponsored by
Anderson Valley
Brewing Company

KELSEY MCNAIR, San Diego, Calif.,
QUAFF

GOLD MEDAL

"Hop-Fu" Imperial IPA

Ingredients for 14 U.S. gallons (53 L)

32.5 lb	(14.74 kg) Rahr pale malt
1.4 lb	(635 g) dextrin malt
8.0 oz	(227 g) Briess 40° L crystal malt
1.0 oz	(28 g) Chinook pellet hops, 10.9% alpha acid (FWH)
2.6 oz	(75 g) Warrior pellet hops, 15.8% alpha acid (60 min)
1.8 oz	(51 g) Tomahawk, F-10 Variety pellet hops, 17.6% alpha acid (30 min)
1.5 oz	(42 g) Simcoe pellet hops, 13% alpha acid (10 min)
2.0 oz	(56 g) Amarillo Gold pellet hops, 7.5% alpha acid (10 min)
2.0 oz	(56 g) Simcoe pellet hops, 13% alpha acid (0 min)
2.0 oz	(56 g) Amarillo Gold pellet hops, 10% alpha acid (0 min)
2.0 oz	(56 g) Citra pellet hops, 13% alpha acid (0 min)
2.0 oz	(56 g) Tomahawk, F-10 Variety pellet hops 16% alpha acid (0 min)
2.0 oz	(56 g) Amarillo Gold pellet hops, 7.5% alpha acid (dry)
2.0 oz	(56 g) Simcoe pellet hops, 13% alpha acid (dry)
4.0 oz	(112 g) Citra pellet hops, 13% alpha acid (dry)
2.0 oz	(56 g) Tomahawk, F-10 Variety pellet hops, 16% alpha acid (dry) Wyeast No. 1056 American ale yeast starter
2.6 vol.	forced CO ₂ to carbonate
15 g	gypsum (mash)

Original Specific Gravity: 1.067

Final Specific Gravity: 1.011

Boiling Time: 90 minutes

Primary Fermentation: 12 days at 68° F
(20° C)

Secondary Fermentation: dry hop 7 days

Directions

Mash grains at 152° F (67° C) for 60 minutes. Mash out at 168° F (76° C) for 15 minutes.

RUNNERS-UP

Silver Medal: Courtney Tyvand, Ooltewah, TN,

American IPA, Barley Mob Brewers

*Bronze Medal: Michael Pearson, Indianapolis, IN,
American IPA, MECA Brewers*

Secondary Fermentation: 2 weeks at 68° F
(20° C)

Directions

Begin mash with 28 qts (26.5 L) of water at 127° F (53° C). Conduct a 35 minute protein rest at 122° F (50° C). For a 30 minute decoction, boil approximately 12 quarts (11.35 L) of thickest mash. Add back into mash tun and raise temperature to 165° F (74° C). Hold for a 30 minute saccharification rest at 165° F (74° C). Fly sparge 1 gallon of water (3.8 L) and collect approximately 6 gallons (22.7 L) of wort.

RUNNERS-UP

Silver Medal: Jovilin Grunwald, Mark Tanner, Oak Harbor, WA, Dunkelweizen, Beer Renegades of Everett Washington (BREW)

*Bronze Medal: Jeff O'Neal, Des Moines, IA,
Weizenbock, Iowa Brewers Union (IBU)*

CATEGORY 15: GERMAN WHEAT AND RYE BEER



206 Entries

Sponsored by
Widmer Brothers
Brewing Co.

STACY MYERS, Fort Worth, Texas,
Horsemen of the Hopocalypse

GOLD MEDAL

"Roggen" German Rye Beer

Ingredients for 5 U.S. gallons (18.93 L)

6.0 lb	(2.72 kg) rye malt
2.0 lb	(0.9 kg) Durst pilsner malt
2.0 lb	(0.9 kg) pale malt
1.0 lb	(0.45 kg) 80° L crystal malt
1.0 lb	(0.45 kg) flaked rice
1.0 lb	(0.45 kg) wheat malt
1.0 lb	(0.45 kg) rice hulls, in mash
1.0 oz	(28 g) Hallertau pellet hops, 3.9% alpha acid (60 min)
1.0 oz	(28 g) Hallertau pellet hops, 3.9% alpha acid (10 min)
1.0 oz	(28 g) Hallertau Hersbrucker pel- let hops, 2.4% alpha acid (2 min)
2 vials	White Labs WLP 380 ale yeast Forced CO ₂ to carbonate

Original Specific Gravity: 1.060

Final Specific Gravity: 1.013

ABV (%): 5.55

IBUs: 19.3

SRM: 14.2

Boiling Time: 60 minutes

Primary Fermentation: 2 weeks at 68° F
(20° C)

410 Entries

Sponsored by
Port Brewing Co./
The Lost Abbey

NORMAN JUFER, Ontario, Calif., Inland Empire Brewers

GOLD MEDAL

"Saison Lite 139" Belgian Specialty Ale

Ingredients for 5.8 U.S. gallons (21.95 L)

6.25 lb	(2.83 kg) Weyermann pilsner malt
12.0 oz	(340 g) wheat malt
0.6 lb	(272 g) Durst Munich malt
1.13 oz	(32 g) Vanguard whole hops, 16.5% alpha acid (60 min)
0.63 oz	(18 g) Vanguard whole hops, 16.5% alpha acid (0 min)
1.8 L	White Labs WLP 565 Saison ale yeast starter (slurry only)
1 tablet	Whirlfloc to clarify
2.6 vol.	forced CO ₂ to carbonate

Original Specific Gravity: 1.044

Final Specific Gravity: 1.010

ABV (%): 4.4

IBUs: 24

SRM: 3.2

Boiling Time: 90 minutes

Primary Fermentation: 3 weeks at 75° F (24° C)

Secondary Fermentation: 3 weeks at 34° F (1° C) in keg

Directions

Mash grains at 150° F (66° C) for 70 minutes. Mash out at 165° F (74° C). Water treatment: 2 g CaCl, 1 g CaSO₄ and lactic acid. Chill to 68° F (20° C) before pitching and let temperature come up to 75° F (24° C) over five days. Ferment for three weeks at that temperature.

RUNNERS-UP

Silver Medal: Andrew Mason, Boone, NC, Bière de Garde, High Country Homebrewers Association

Bronze Medal: Norman Jufer, Ontario, CA, Bière de Garde, Inland Empire Brewers

CATEGORY 17: SOUR ALE



163 Entries

Sponsored by
Captain Lawrence
Brewing Company

REMI BONNART, Fort Collins, Colo., Liquid Poets
2010 NHC Homebrewer of the Year

GOLD MEDAL

"Zed's Dead Red"
Flanders Red Ale

Ingredients for 5.8 U.S. gallons (21.95 L)

4.0 lb	(1.81 kg) German Pilsner malt
4.0 lb	(1.81 kg) Vienna malt
2.0 lb	(0.9 kg) dark Munich malt
8.0 oz	(227 g) aromatic malt
8.0 oz	(227 g) caramel Munich malt
8.0 oz	(227 g) Special B malt
8.0 oz	(227 g) wheat malt
1.0 oz	(28 g) East Kent Goldings plug hops, 5% alpha acid (60 min)
	Wyeast No. 1764 "Pacman" ale yeast
	Wyeast No. 3763 Roselare Blend (secondary)
1 tsp	yeast nutrient
2.5 vol.	forced CO ₂ to carbonate

Original Specific Gravity: 1.060

Final Specific Gravity: 1.008

Boiling Time: grains 90 minutes

Primary Fermentation: 3 weeks at 60-65° F (16-18° C)

Secondary Fermentation: 9 months at 70° F (21° C)

Directions

Mash grains at 158° F (70° C) for one hour. Mash out at 168° F (76° C) for five minutes. After primary fermentation, transfer to glass secondary and pitch Wyeast Roselare Blend as well as ~250 mL (~1 cup) of previous year's batch (before packaging) and age at ~70°F (21° C) with a silicon airlock until desired character/acidity is reached (in this case ~ 9 months). During the course of fermentation, dregs of several sour beers were added to fermentation including Gueuze Girardin and a homebrewed Sour Blonde Ale (~12 separate batches that were brewed by different homebrewers and blended) that was aged in an oak barrel that previously contained New Belgium La Folie. Soak 2 oz (57 g) of medium toast French oak cubes in Daron Calvados (enough to completely cover oak cubes) for a couple weeks. Add oak cube/Calvados mixture to beer and age an additional 3 months or until desired character is achieved. Transfer beer to keg and force carbonate to ~2.5 volumes of CO₂. After a while of enjoyment on tap, bottle using counter pressure bottle filler. Age bottles at cellar temperature (in this case ~8 months); pellicle will form in the bottle and character will develop for many years.

RUNNERS-UP

Silver Medal: Mark Heise, Regina, SK, Flanders Brown/Oud Bruin, Ale and Lager Enthusiasts of Saskatchewan (ALES)

Bronze Medal: Dick Blankenship, Salem, OR, Fruit Lambic, Capitol Brewers

CATEGORY 18: BELGIAN STRONG ALE



362 Entries

Sponsored by
Dingemans c/o
Cargill Malt

PHIL SULLIVAN, Royal Oak, Mich., Kuhnhenn Guild of Brewers Homebrew Club

GOLD MEDAL

"Sully's Belgian Blonde"

Belgian Blond Ale

Ingredients for 10 U.S. gallons (37.85 L)

25.0 lb	(11.34 kg) Pilsner malt
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3.0 lb	(1.36 kg) cane sugar
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1.0 lb	(0.45 kg) aromatic malt
--------	-------------------------

3.0 oz	(85 g) Hallertau hops (60 min)
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	White Labs WLP 500 Trappist ale yeast
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	Forced CO ₂ to carbonate
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Original Specific Gravity: 1.087

Final Specific Gravity: 1.012

Boiling Time: 60 min.

Primary Fermentation: Ferment at 68° F (20° C).

Directions

Mash grains at 150° F (66° C) for one hour.

RUNNERS-UP

Silver Medal: Michael Johnson, Salt Lake City, UT, Belgian Dubbel, Zion Zymurgist Homebrew OPerative Society (ZZ HOPS)

Bronze Medal: David Barber, Orwigsburg, PA, Belgian Tripel, Lehigh Valley Home Brewers

CATEGORY 19: STRONG ALE



216 Entries

Sponsored by
Northern Brewer

SCOTT THOMAS, Pleasant Hill, Calif., Diablo Order of Zymiracle Enthusiasts (DOZE)

GOLD MEDAL

"JJs Barleywine"
English Barleywine

Ingredients for 12 U.S. gallons (45.42 L)

20.0 lb	(9.07 kg) two row pale malt
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1.0 lb	(0.45 kg) carastan malt
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12.0 lb	(5.44 kg) ultra light liquid malt extract
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2.0 lb	(0.9 kg) turbinado sugar
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4.0 oz	(113 g) Glacier pellet hops, 6% alpha acid (60 min)
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1.0 oz	(28 g) Willamette pellet hops, 4.6% alpha acid (30 min)
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1.0 oz	(28 g) Willamette pellet hops, 4.6% alpha acid (15 min)
1.0 oz	(28 g) Fuggles pellet hops, 4.0% alpha acid (15 min)
1.0 oz	(28 g) Fuggles pellet hops, 4.0% alpha acid (5 min)
1.0 oz	(28 g) Fuggles pellet hops, 4.0% alpha acid (dry, 1 week)
	White Labs Dry English ale yeast starter
2 vol.	forced CO ₂ to carbonate

Original Specific Gravity: 1.094

Final Specific Gravity: 1.024

ABV (%): 9.1

IBUs: 75.4

Boiling Time: 90 minutes

Primary Fermentation: 7 days at 68° F (20° C)

Secondary Fermentation: 20 days at 73° F (22° C)

Directions

Mash grains at 150° F (66° C) for 60 minutes. Ferment at 68° F (20° C) for one week. Allow to rise to 73° F (23° C). Ferment 27 days.

RUNNERS-UP

Silver Medal: *Gordon Strong*, Beavercreek, OH, American Barleywine, Saint Paul Homebrewers Club

Bronze Medal: *Larry Nadeau*, Laguna Niguel, CA, American Barleywine, Fear No Beer Brewclub

CATEGORY 20: FRUIT BEER



130 Entries

SCOTT TOWNSON, Hurst, Texas, North Texas Homebrewers Association

GOLD MEDAL

"Peaches -N- Cream Hefe"

Hefeweizen with peach flavoring and lactose

Ingredients for 12 U.S. gallons (45.42 liters)

10.5 lb	(4.76 kg) German wheat malt
8.25 lb	(3.74 kg) Bohemian pilsner malt
2.0 lb	(0.90 kg) German Light Munich malt

2.0 lb	(0.90 kg) rice hulls (in mash)
8.0 oz	(227 g) natural peach flavoring (at bottling)
14.0 oz	(397 g) lactose (at bottling)
1.0 oz	(28 g) Hallertauer Mittelfruh whole hops, 2% alpha acid (FWH)
1.0 oz	(28 g) Liberty pellet hops, 4% alpha acid (50 min)
1600 mL	White Labs WLP 300 San Francisco lager yeast
	Forced CO ₂ to carbonate

Original Specific Gravity: 1.050

Final Specific Gravity: 1.012

ABV (%): 5

IBUs: 9.6

SRM: 4.7

Boiling Time: 90 min

Primary Fermentation: 65° F (18° C) until finished

Secondary Fermentation: Six months at 35° F (2° C)

Directions

Crush grains and mash in at 112° F (44° C) for 20 minutes. Infuse to raise temp to 144° F (62° C) and hold for 20 minutes. Pull first decoction and bring slowly to a boil. Add back, raise temp to 152° F (67° C) and hold for 60 min. Pull second decoction and add back to raise temp to 159° F (71° C) and hold for 30 minutes. Infuse to mash out at 168° F (76° C). Sparge to collect 13.5 gallons of wort and boil. Add first hop addition and bring to a boil. Add second hop addition with 50 minutes remaining.

RUNNERS-UP

Silver Medal: *Rob Kent*, West Valley City, UT, Fruit Beer

Bronze Medal: *Adam Mills*, Big Rapids, MI, Fruit Beer, The Brewing Network

CATEGORY 21: SPICE/HERB/VEGETABLE BEER



245 Entries

Sponsored by High Gravity Homebrewing & Winemaking Supplies

SAM FIRKE, Ann Arbor, Mich., Ann Arbor Brewers Guild

GOLD MEDAL

"Zingibier"

Belgian Strong Wheat Ale with Ginger and Spices

Ingredients for 5 U.S. gallons (18.93 L)

4.0	lb (1.81 kg) dry wheat malt extract
3.79	lb (1.72 kg) Belgian Pils
2.0	lb (0.9 kg) flaked wheat
1.25	lb (567 g) sucrose
1.0	lb (0.9 kg) American six-row pale malt
8.0	oz (227 g) flaked oats
1.5	oz (42 g) fresh grated, peeled ginger root (10 min)
0.5	oz (14 g) dried bitter orange peel (5 min)
0.5	oz (14 g) coriander seed, crushed (5 min)
2	chamomile teabags cut open (5 min)
1/2	tablet Whirlfloc (10 minutes)
1.0	oz (28 g) Centennial whole home grown hops (~20 IBUs) (60 min)
	Wyeast 3944 Belgian Witbier yeast (starter or slurry)
5	oz + 2.5 tsp of dextrose for 2.75 volumes of CO ₂

Original Specific Gravity: 1.085

Final Specific Gravity: 1.021

Boiling Time: 90 minutes

SRM: 7

Primary Fermentation: 2 weeks at 68° F (20° C)

Secondary Fermentation: 3 weeks at 68° F (20° C)

Directions

Mash at 152° F (67° C) for 60 minutes. Do not oversparge—a smaller pre-boil volume than normal is fine given the small grain bill. Boil for 60 minutes. Add DME at end of boil. Top up with cold water if necessary to reach target volume/gravity. Ferment two weeks at 68° F (20° C) in primary, then transfer to secondary and condition for three weeks at 68° F (20° C). Bottle prime with 5 oz + 2.5 tsp of dextrose for 2.75 volumes of CO₂. Rest bottles in cellar for at least 2 months.

Brewer's Note: I used homegrown hops with unknown AA% (lower than commercial Centennial hops). Because of the smaller boil volume and the fact that a strong boil is not needed for the style nor to boil off liquid, this recipe is ideal for a 5 gallon pot on a stovetop. I have not tried an extract-only

version, but it seems that 8 lbs of Wheat DME and 1.5 lbs table sugar would do it. Boil maybe 3 lbs of the Wheat DME and the 1.5 lbs sugar for 60 minutes, then add the rest of the DME at the end of the boil.

RUNNERS-UP

Silver Medal: Jeffrey Oberlin, Friendswood, TX, Spice, Herb, or Vegetable Beer, Bay Area Mashtronauts

Bronze Medal: Tim Bisson, Jennifer A Bisson, Anchorage, AK, Spice, Herb, or Vegetable Beer, Great Northern Brewers Club

CATEGORY 22: SMOKE-FLAVORED AND WOOD-AGED BEER



226 Entries

Sponsored by
Alaskan Brewing
Company

PETE BRITTON, Lake in the Hills, Ill., The Brewing Network

GOLD MEDAL

"Spanish Cedar IPA"
Wood-Aged Beer

Ingredients for 6 U.S. gallons (22.71 L)

16.0 lb	(7.26 kg) two-row pale malt
1.0 lb	(0.45 kg) dextrin malt
5.0 oz	(142 g) honey malt
2.0 oz	(57 g) 60° L crystal malt
0.75 oz	(21 g) Chinook pellet hops, 11% alpha acid (FWH)
0.5 oz	(14 g) Summit pellet hops, 18% alpha acid (60 min)
0.5 oz	(14 g) Simcoe pellet hops, 12% alpha acid (45 min)
0.5 oz	(14 g) Summit pellet hops, 18% alpha acid (30 min)
1.0 oz	(28 g) Centennial pellet hops, 10% alpha acid (15 min)
0.5 oz	(14 g) Simcoe pellet hops, 12% alpha acid (10 min)
0.5 oz	(14 g) Amarillo pellet hops, 8% alpha acid (10 min)
1.0 oz	(28 g) Centennial pellet hops, 10% alpha acid (5 min)
2.0 oz	(57 g) Amarillo pellet hops, 8% alpha acid (10 min)
1.0 oz	(28 g) Simcoe pellet hops, 12% alpha acid (dry, 7 days)

1.5 oz	(42 g) Amarillo pellet hops, 8% alpha acid (dry, 7 days)
0.5 oz	(14 g) Chinook pellet hops, 11% alpha acid (dry, 7 days)
8 inches	Spanish cedar spiral added in secondary (14 days)
3L	White Labs WLP 007 ale yeast starter
2.5 vol	forced CO ₂ to carbonate

Original Specific Gravity: 1.070

Final Specific Gravity: 1.014

ABV (%): 7.4

SRM: 6

Boiling Time: 90 minutes

Primary Fermentation: 10 days at 67° F (19° C)

Diacetyl Rest: 3 days at 70° F (21° C)

Secondary Fermentation: 7 days at 60° F (16° C)

Directions

Treat water with 1 tsp CaCl, and 2 tsp gypsum. Mash grains for 60 minutes at 150° F (66° C). After secondary fermentation, rack off dry hops into keg, but keep cedar spiral in the beer. Chill keg to 45° F (7° C), carbonate and condition another week.

RUNNERS-UP

Silver Medal: Brian Steuerwald, Brownsburg, IN, Wood-Aged Beer, Foam Blowers of Indiana (FBI)

Bronze Medal: Matt Haugo, Scott Wellington, Aliso Viejo, CA, Other Smoked Beer, Mooseknuckle Brewing

CATEGORY 23: SPECIALTY BEER



275 Entries

Sponsored by The Hop Shack

JANE ZALEWSKI, Proctorville, Ohio, Greater Huntington Homebrewers

GOLD MEDAL

"Old Ale with Grapes and Honey"
Old Ale with honey, saffron and grape juice

Ingredients for 5 U.S. gallons (18.93 L)

10.0 lb	(4.54 kg) two-row pale malt
1.5 lb	(0.68 kg) light dry malt extract

0.65 oz	(18.4 g) Willamette pellet hops (60 minutes)
0.65 oz	(18.4 g) Willamette pellet hops (15 minutes)
1.0 tsp	(4.93 ml) saffron (15 min)
1.5 tablets	Whirlfloc (15 min)
8.0 lb	(3.63 kg) grape juice concentrate (0 min)
3.0 lb	(1.36 kg) honey (0 min)
0.5 gallon	North End Tavern Brewing American Ale yeast starter
	Forced CO ₂ to carbonate

Original Specific Gravity: 1.104

Final Specific Gravity: 1.025

Boil Time: 60 minutes

Primary Fermentation: 3 weeks at 70° F (21° C)

Directions

Mash grains at 146° F (63° C) for 60 minutes. Sparge at 168° F (76° C)

RUNNERS-UP

Silver Medal: Wardell Massey, Spring City, PA, Specialty Beer

Bronze Medal: Michael Johnson, Salt Lake City, UT, Specialty Beer, Zion Zymurgist Homebrew OPerative Society (ZZ HOPS)

CATEGORY 24: TRADITIONAL MEAD



88 Entries

CURT & KATHY STOCK, Saint Paul, Minn., Saint Paul Homebrewers Club

GOLD MEDAL

"Raspberry Blossom Mead"
Traditional sweet, still sack mead with raspberry blossom honey

Ingredients for 5 U.S. gallons (18.93 L)

21.0 lb	(9.53 kg) raspberry blossom honey
1.0 tsp	(4.93 ml) Fermaid K
2.0 tsp	(9.86 ml) Diammonium Phosphate
	GoFerm for yeast hydration
	Lalvin 71B (Narbonne) yeast

Original Specific Gravity: 1.160

Final Specific Gravity: 1.050

ABV (%): 14

Boiling Time: n/a

Primary Fermentation: 70° F (21° C)

Directions

Use carbon filtered water. Mix, aerate. Stagger nutrient additions at yeast pitch, 36 hours and 72 hours. 50% sugar depletion. Stir daily to release CO₂.

RUNNERS-UP

Silver Medal: Tom Fitzpatrick, Batavia, IL, Dry Mead, Urban Knives of Grain Bronze Medal: Gary Westman, Shorewood, MN, Sweet Mead

CATEGORY 25: MELOMEL (FRUIT MEAD)



143 Entries

Sponsored by
Bacchus and
Barleycorn Ltd.

RODNEY KIBZEY, Lombard, Ill.,
Chicago Beer Society
NHC 2010 Meadmaker of the Year

GOLD MEDAL

"Apple Juiced!"

Petillant, sweet sack cyser (Apple Melomel)

Ingredients for 5 U.S. gallons (18.93 L)

1.0 gal (3.79 L) Miller's orange blossom honey
4.0 gal (15.14 L) Michigan cider
1L White Labs WLP 720 Sweet Mead Yeast starter
Wyeast sweet mead yeast
1.5 vol. forced CO₂ to carbonate

Original Specific Gravity: 1.120

Final Specific Gravity: 1.025

Boiling Time: n/a

Primary Fermentation: 6 months at 70° F (21° C) in glass

Secondary Fermentation: 18 months at 68° F (20° C) in glass

Directions

Keep it clean and give it some time.

RUNNERS-UP

Silver Medal: Gordon Strong, Beavercreek, OH, Other Fruit Melomel, Saint Paul Homebrewers Club

Bronze Medal: Gordon Strong, Beavercreek, OH, Pymont (Grape Melomel), Saint Paul Homebrewers Club

CATEGORY 26: OTHER MEAD



114 Entries

GORDON STRONG, Beavercreek, Ohio,
Saint Paul Homebrewers Club
2010 NHC Ninkasi Winner

GOLD MEDAL

"Cinnamon-Vanilla Metheglin"
Metheglin

Ingredients for 5 U.S. gallons (18.93 L)

20.0 lb (9.07 kg) Tupelo honey
carbon-filtered water to target volume
2.0 tsp (9.86 ml) DAP
1.0 tsp (4.93 ml) Fermaid-K
4.5 tsp (22.18 ml) GO-FERM
2 packets VL3C yeast
1 Tbsp (14.79 ml) Vietnamese extra fancy cinnamon
2 Madagascar vanilla beans, split, scraped
1 packet Super-Kleer

Boiling Time: n/a

Primary Fermentation: 68° F (20° C) until fermentation is complete

Directions

Rehydrate and proof yeast in 104° F (40° C) water with GO-FERM and a pinch of sugar for 15 minutes. Mix honey with enough water to make 5 gallons of volume, combining with a stir-whip to thoroughly combine and aerate. Mix together nutrients and add 1/4 of total. Pitch yeast and ferment at 68° F (20° C). Add 1/4 of total nutrients each day, stirring to release CO₂. Ferment to completion, rack and age until 1 month before serving.

Prepare spice teas. Pour 2 cups boiling water over cinnamon and vanilla separately, steep

for 5 minutes, then strain through a coffee filter. Add 1 cup tupelo honey to each tea and stir to dissolve. Blend teas with finished mead to taste to create a pleasant but not overpowering balance of spice with a sweet finish. Add tupelo if necessary. Use your palate to adjust the sweetness and individual spice levels to final levels. Use Super-Kleer to polish the mead to brilliant clarity.

RUNNERS-UP

Silver Medal: Rick Spaziani, Lebanon, OR, Open Category Mead

Bronze Medal: Ted Gisske, Mount Horeb, WI, Open Category Mead, Madison Homebrewers and Tasters

CATEGORY 27: STANDARD CIDER AND PERRY



97 Entries

Sponsored by
Woodchuck Draft Cider

STEPHEN NORTHCUTT AND MARK RISTOW, Vallejo, Calif., Diablo Order of Zymiracle Enthusiasts (DOZE)

GOLD MEDAL

"Apple Cider"
Common Cider

Ingredients for 10 U.S. gallons (37.8 liters)

10 gallons apple juice
2 vials White Labs English Cider Yeast

Directions

Ferment for three weeks and transfer to Corny kegs. Allow to lager for two to three months, then filter and backsweeten with apple juice concentrate to taste. Force carbonate and enjoy.

RUNNERS-UP

Silver Medal: John Jurgensen, San Antonio, TX, Common Cider, Bay Area Mashtronauts

Bronze Medal: Kristen & Orsolya England, Saint Paul, MN, Common Cider, Saint Paul Homebrewers Club

CATEGORY 28: SPECIALTY CIDER AND PERRY



78 Entries

Sponsored by
Woodchuck Draft
Cider

ANJIE WATTS, Alpharetta, Ga.,
Brewmasters of Alpharetta
NHC 2010 Cidermaker of the Year

GOLD MEDAL Applewine

Ingredients for 5 U.S. gallons (18.93 L)

1 bushel Arkansas Black apples, pressed
3 cinnamon sticks (in primary)
1-2 packets Lalvin 1118 Champagne yeast
Potassium sorbate

Original Specific Gravity: 1.070 to 1.080

Final gravity: 1.008 to 1.012

Primary Fermentation: 2 weeks

Secondary Fermentation: 4-6 weeks

Directions

Use enough water and sugar to reach target volume and gravity. Adjust pH as necessary. Affix airlock, using vodka instead of water. After fermentation, back-sweeten to taste and add potassium sorbate to prevent re-fermentation. Bottle or force carbonate in keg. Best to leave six months to a year, but we all know that is not possible.

RUNNERS-UP

Silver Medal: Dave Clark, Seven Hills, OH, Other Specialty Cider/Perry, Society of Northeast Ohio Brewers

Bronze Medal: Peter Cowles, Fairfield, CT, Fruit Cider, The Brewing Network

KUDOS—BEST OF SHOW

AHA/BJCP Sanctioned Competition Program

April 2010

Alamo City Cerveza Fest, 378 entries—*J&J Brew Crew, Houston, TX.*
BioMarin Brewer's Cup, 12 entries—*Jeri Beltman, Novato, CA.*
The Great Arizona Homebrew Competition, 151 entries—*Chris Harris, Mesa, AZ.*
Enchanted Brewing Challenge, 123 entries—*Rob Briscoe, Rio Rancho, NM.*
Hurricane Blowoff, 218 entries—*Paul Blatz, West Palm Beach, FL.*
World Expo of Beer Commercial Competition, 427 entries—*Sam Sherwood/Wallendorff Brewpub, Hastings, MI.*
14th Annual Chico Homebrew Competition, 157 entries—*Doug McLendon, Chico, CA.*

May 2010

Siciliano's 7th Annual Homebrew Competition, 148 entries—*Andrew Zinn, Holland, MI.*
Berkshire County Homebrew Contest, 10 entries—*Tom Greenleaf, Pittsfield, MA.*
Great Basin Brew-off, 126 entries—*Jeff Current, Reno, NV.*
Comp de L'abbaye Normale, 44 entries—*Jack Griego, Jacksonville, FL.*
Sasquatch Brewfest Homebrew Competition, 65 entries—*Dirk Baker, Hillsboro, OR.*
3rd Annual Upland Brewing Company UpCup, 51 entries—*Brian Steuerwald, Indianapolis, IN.*
BrewFest at Mount Hope Homebrew Competition, 91 entries—*Daniel Roberts, Aspers, PA.*
US Open, 480 entries—*Barry Ledford, Columbia, SC.*
Oregon Homebrew Festival, 428 entries—*Alan Priest, Salem, OR; Sue & Mort Piripi, Corvallis, OR.*
Wisconsin State Fair, 218 entries—*Gene Polaski, West Allis, WI.*
SCABS Home Brew Competition, 125 entries—*Pat Hyde, Port Huron, MI.*
Hogtown Brew-Off, 348 entries—*Mark Stober, Tampa, FL.*
Spirit of Free Beer, 344 entries—*Mel Thompson, Gaithersburg, MD.*
Beer Quest Hoppy Ale 2010, 21 entries—*Aaron Carnes, Lincoln, NE.*
Los Angeles International Commercial Beer Competition, 437 entries—*Boston Beer Company, Samuel Adams Stony Brook Red, Boston, MA.*
Granite City Food & Brewery Brewoff, 380 entries—*Rick Srigley, Boone, IA.*
15th Annual Big Batch Brew Bash, 70 entries—*Chris Landis, Spring, TX.*
Amateur Winemakers of Ontario beer class, 38 entries—*Mervin Quast, Nepean, ON.*
2010 BUZZ OFF, 366 entries—*Carey Diamond, Pittsburgh, PA.*



AHA Club-Only Competition, Extract Beers, 61 entries—*Brendan Wehrly, La Verne, CA.*

Cal Poly Cup, 56 entries—*Immortality, Aaron Wharton, San Luis Obispo, CA.*

1st Annual Hangar 24 Homebrew Competition, 256 entries—*Dwight Mulcahy, Sunnyvale, CA.*

GEBL Hop Madness IPA Bracket Challenge, 53 entries—*Craig Myer, Olympia, WA.*

ABC Brews Crews Homebrew Competition, 259 entries—*Jim Satin, Saline, MI.*

16th Annual Eight Seconds of Froth, 313 entries—*Nathan Fleming, Laramie, WY.*

All Idaho HausBrau Challenge, 135 entries—*Ander Sundell, Boise, ID.*

San Diego International Beer Festival, 639 entries—*Pizza Port, Solana Beach, "Big Wednesday," Solana Beach, CA.*

Bloat Open, 115 entries—*Jennifer Hermann, Kent, OH.*

VanBrewerAwards, 193 entries—*Owen Kirkaky, Edmonton, AB.*

Sonoma Community Center Amateur Beer Competition, 18 entries—*Chris Price, Kentfield, CA.*

18th annual Great Alaska Craft Beer and Homebrew Competition, 92 entries—*Dan Lemienx, Argyle, NY.*

Aurora Brewing Challenge 2010, 298 entries—*Neil Bamford, Calgary, AB.*

Kohler Festival of Beer Homebrew Competition, 40 entries—*Joe Fillion, Plymouth, WI.*

June 2010

B.U.Z.Z. Boneyard Brew-Off, 195 entries—*Rodney Kibzey, Lombard, IL.*

Great Canadian Homebrew Competition (GCHC), 54 entries—*Louis De Bourbon & Ed Koren, Toronto, ON.*

Homemade Beer Competition, 275 entries—*Jonathan Gunther, Irvine, CA.*

LongShot American Homebrew Contest - Western Regional, 195 entries—*Alexandra Peters, Henderson, NV.*

Botanical Brew Competition, 10 entries—*Ken Shannen, Fort Wayne, IN.*

1st Annual IEBC Pro-Am, 88 entries—*Gregory Nylen/Dave Chapman, Topanga, CA.*

Barley's Homebrew Competition, 64 entries—*Andrew Schultz.*

AHA National Homebrew Competition Final Round, 837 entries—*Remi Bonnard, Fort Collins, CO.*

8th Annual Home Beer and Winemaker's Festival, 40 entries—*Dwight Mulcahy, Sunnyvale, CA.*

Uncle Billy's Keep Austin Beered Pro-Am, 43 entries—*Keith Bradley, Austin, TX.*



AHA/BJCP SANCTIONED COMPETITION PROGRAM CALENDAR

For complete calendar, competition and judging information go to
www.HomebrewersAssociation.org/pages/competitions



September 4

4th Annual KROC World Brewers Forum Homebrew Competition - Great American Beer Challenge

Broomfield, CO. Entry Fee: \$7. Entry Deadline: 8/28/2010. Contact: Ryan Thomas, 720-350-4286, kompetition@kroc.org , www.kroc.org/DesktopDefault.aspx

September 5

Eastern Idaho State Fair

Blackfoot, ID. Entry Fee: \$10 (unlimited entries). Entry Deadline: 8/20/2010. Contact: Robert Beckwith, 208-346-6870, beckwith73@cableone.net, www.hdba.org

September 11

Santa Cruz County Fair Homebrew Competition

Watsonville, CA. Entry Fee: \$2.50. Entry Deadline: 8/29/2010. Contact: Mia Bossie, 831-336-4569, bossies@cruzio.com

September 11

Blue Ridge Brew Off

Asheville, NC. Entry Fee: \$6. Entry Deadline: 9/4/2010. Contact: Jason Nicolai, 828-284-0723, jason@homebrewedstaffords.com, www.maltsters.org/phpnuke/index.php

September 11

Dayton DRAFT Beerfest Competition

Dayton, OH. Entry Fee: \$5/entry. Entry Deadline: 9/1/2010. Contact: Brian Sanders, 937-306-2463, brianbrews@hotmail.com, www.daytondraft.org

September 11

WA State Amateur Brewers Competition

Perth, Western Australia, AU. Entry Deadline: 9/5/2010. Contact: Anthony Wishart, +61 0 403 567 425, wasabc@wasabc.org, www.wasabc.org

September 11

Malt Madness

Allentown, PA. Entry Fee: \$6 first entry; \$5 additional entries. Entry Deadline: 8/26/2010. Contact: Al Hazan, 570-421-1479, hazan@ptd.net, www.lehighvalleyhomebrewers.org

September 11

Cactus Challenge

Lubbock, TX. Entry Fee: \$7. Entry Deadline: 8/6/2010. Contact: Jerry Elliot, 806-781-5585, president@ale-iansomociety.org, www.ale-iansomociety.org

September 18

The Schooner Homebrew Championship

Racine, WI. Entry Fee: \$6, Entry Deadline: 9/4/2010. Contact: Rick McNabb, 262-864-4176, rick@theschooner.org, www.theschooner.org

September 19

AHA Club-Only Competition, "Pucker up" Sour & Wild Ales

Woodland Hills, CA. Entry Fee: One entry per club, \$7 (make check payable to AHA). Entry Deadline: 9/9/2010. Contact: Drew Beechum, 818-884-8586, drew@maltosefalcons.com, www.homebrewersassociation.org/pages/competitions/club-only-competitions

September 19

2010 Michigan Renaissance Festival Competition(BrewBeerBarronsBrewBrawl)

Waterford, MI. Entry Fee: \$11 for first three, \$3 for additional entries. Entry Deadline: 8/29/2010. Contact: Daniel Frechette, 313-248-1336, brewfestorg@gmail.com, www.snobsbrewclub.com/renfest

September 19

State Amateur Brewers Show of South Australia

Adelaide, South Australia, AU. Entry Fee: \$5 per bottle. Entry Deadline: 9/4/2010. Contact: Mark Rasheed, +61 8 83225282, rashy63@bigpond.com, www.sabsosa.com

September 25

Pacific Brewers Cup

Long Beach, CA. Entry Fee: \$6 for first entry, \$5 for additional entries. Entry Deadline: 8/28/2010. Contact: Robert Wise, 714-828-4709, wise.robert@epa.gov, www.lbbh.org

September 25

The Big Fresno Fair Homebrew Competition

Fresno, CA. Entry Fee: Free. Contact: David Morford, 559-323-0583, fshrdave@qnis.net, www.fresnofair.com

September 25

Pacific Brewers Cup

Long Beach, CA. Entry Deadline: 9/11/2010. Contact: Michael Cullen, 213-923-3506, mcullen@calferm.org

September 25

The Local Pub Brewfest

Saratoga Springs, NY. Entry Fee: \$10. Entry Deadline: 9/19/2010. Contact: James Azotea, 518-451-0301, jazotea@nycap.rr.com, www.thoroughbrews.org

September 25

Barley Legal

Phoenix, MD. Entry Fee: \$8 first entry, \$5 additional entries. Entry Deadline: 9/18/2010. Contact: Jeff Sanders, 410-570-6026, jeff.sanders@dynamicshift.com, www.wootown.org/comp

September 25

Jackson County Harvest Fair

Central Point, OR. Entry Fee: Free. Entry Deadline: 9/9/2010. Contact: Bob Bacolas, 541-499-6777, sales@grains-n-beans.com, www.jcfairgrounds.com

September 25

2010 Maryland Microbrew Festival Homebrew Competition

Union Mills, MD. Entry Fee: \$7. Entry Deadline: 9/11/2010. Contact: Neil Mezebish, 443-487-7112, neil@mezebish.com, www.home.comcast.net/~midnighthomebrewers

September 26

Muse Cup

Fort Collins, CO. Entry Fee: \$6/bottle. Entry Deadline: 9/18/2010. Contact: Pamela McAlpin, 970-224-2767, just.pamela@gmail.com

October 2

2010 Iron Brewer Competition

Appleton, WI. Entry Fee: \$7 for 1st entry, \$5 additional entries. ALE members 1st entry free and \$5 additional entries. Entry Deadline: 9/25/2010. Contact: Dan Grady, 920-205-0157, dangrady@gmail.com, www.aleclubcompetitions.com

October 9

Music City Brew Off

Goodlettsville, TN. Entry Fee: \$7. Entry Deadline: 9/24/2010. Contact: Jonathan Adams, 615-504-7673, bigjohn3957@gmail.com, www.musiccitybrewers.com

October 11

West Coast Brewers Hybrid Beer Style Competition 2010

Perth, WA, AU. Contact: Brendan O'Sullivan, +618 407887798, competitions@westcoastbrewers.com, www.westcoastbrewers.com/competitions

October 16

Big Muddy Monster Brew Fest

Murphysboro, IL. Entry Deadline: 9/15/2010. Contact: Brad Fager, 618-924-6004, befager@friendsofmurphysboro.com, www.friendsofmurphysboro.com

October 16

Arkansas State Fair Competition 2010

Little Rock, AR. Entry Fee: \$7. Entry Deadline: 10/1/2010. Contact: Ken Haycock, 501-223-0030, k.haycock@Sbcglobal.net, www.sites.google.com/site/centralarkansasfermenters

October 16

The Washington Mead & Cider Cup

Kent, WA. Entry Fee: \$6. Entry Deadline: 10/12/2010. Contact: Tim Hayner, 253-631-2816, tim@bigalbrewing.com, www.impalingalers.org/site

October 16

2010 BBG Skirmish in the Triad

Greensboro, NC. Entry Fee: \$6. Entry Deadline: 10/9/2010. Contact: Mac Wylie, 336-339-2898, macwylie@aol.com

October 16

Oktobersbest Zinzinnati

Cincinnati, OH. Entry Fee: \$5. Entry Deadline: 10/10/2010. Contact: Conan Crofoot, 513-608-0888, oktobersbest@gmail.com

October 17

National Organic Brewing Challenge!

Santa Cruz, CA. Entry Fee: \$7 first entry, \$5 additional entries. Entry Deadline: 10/9/2010. Contact: Jason Hanson, 831-454-9665, 7bridges@breworganic.com, www.breworganic.com/Competition/craftbrewcontest.html

October 23

Queen of Beer

Placerville, CA. Entry Fee: \$8 first entry, \$6 additional entries. Entry Deadline: 10/9/2010. Contact: Glen Franke, 916-628-8365, gfranke@sbcglobal.net, www.queenofbeer.hazeclub.org

AHA/BJCP SANCTIONED COMPETITION PROGRAM CALENDAR

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October 23

5th Annual New England Regional Homebrew Competition

Portsmouth, NH. Entry Fee: \$6. Entry Deadline: 10/8/2010. Contact: David Rosenbaum, 978-409-5410, david_rosenbaum@yahoo.com, www.bfd.org/nerhbc

October 23

Son of Brewzilla

North Olmsted, OH. Entry Fee: \$7 first entry, \$5 additional entries. Entry Deadline: 10/9/2010. Contact: Dave Clark, 216-789-1774, sonofbrewzilla@gmail.com, www.beersnobs.org

October 23

Chattanooga Oktoberfest Homebrew Competition

Signal Mountain, TN. Entry Fee: \$10. Entry Deadline: 10/9/2010. Contact: Tony Giannasi, 423-762-8741, tony@giannasi.com, www.barleymob.com

October 28

1st Annual Maui Oktoberfest Home Brew Competition

Lahaina, HI. Entry Fee: \$7. Entry Deadline: 10/10/2010. Contact: Dave Hanken, 808-276-5928, napilidave@yahoo.com

October 28

Australian Amateur Brewing Championship

Melbourne, Vic, AU. Entry Fee: \$10. Entry Deadline: 10/8/2010. Contact: Mark Hibberd, 03-9580 0372, mhibberd@melbpc.org.au, www.aabc.org.au

October 30

All About Ales and Lagers

Toronto, ON, CA. Entry Deadline: 9/23/2010. Contact: Paul Dickey, 416-573-5859, prdickey@rogers.com, www.homebrewers.ca

October 30

Hoppy Halloween

Fargo, ND. Entry Fee: \$7. Entry Deadline: 10/23/2010. Contact: Tom Roan, 701-476-0126, tjoan@yahoo.com, www.prairiehomebrewers.org

October 30

Southeast Alaska Autumn Pour

Juneau, AK. Entry Fee: \$5 first entry, \$3 additional entries. Entry Deadline: 10/27/2010. Contact: Steve Pierce, 907-586-6771, pierce.steve@gci.net,

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COMMERCIAL CALIBRATION



One way beer judges check their palates is by using commercial "calibration beers"—classic versions of the style they represent. Zymurgy has assembled a panel of four judges who have attained the rank of Grand Master in the Beer Judge Certification Program. Each issue they score two widely available commercial beers (or meads or ciders) using the BJCP scoresheet. We invite you to download your own scoresheets at www.bjcp.org, pick up a bottle of each of the beverages and judge along with them in our Commercial Calibration.

Two “summer” beers were presented to our judges this issue. First up was Endless Summer Light, brewed by Karl Strauss Brewing Co. in San Diego, Calif. Endless Summer Light is an American light lager created in June 2005 when Bruce Brown Films and Karl Strauss Brewing Co. came together to create a tribute to both Brown (creator of the classic surf film “The Endless Summer”) and brewmaster Strauss.

Endless Summer Light was brewed with a blend of Vienna malts and pale barley and spiced with Noble Saaz hops for a subtle hop character and crisp, clean finish. The low-calorie lager checks in at 3.3 percent abv and 15 IBU. It is available year-round.

Next up was Bell’s Lager, which provided a good deal of discussion amongst our judges. Bell’s Lager is listed as a commercial example in the BJCP style

guidelines for a Dortmunder Export, but Bell’s production manager John Mallett says the beer is a true Bohemian Pilsner. Consequently, two of our judges judged it as a Dortmunder Export, while two judged it as a Bohemian Pilsner.

The beer scored well in both style categories, which led judge Gordon Strong to sum up, “It’s best enjoyed without trying to pigeonhole it into a style.”

Mallett agreed, saying, “All beer drinking is subjective.”

“I don’t know that those styles are so far apart,” added Mallett. “The malt comes through on both of them, and both should have good, strong noble hopping.”

Bell’s Lager checks in at 5 percent abv and is brewed with Pils and Munich malts, and Saaz hops. It is also available year-round.

ON THE WEB

Karl Strauss Brewing Co.
www.karlstrauss.com

Bell’s Brewery
www.bellsbeer.com

BJCP Style Guidelines
www.bjcp.org



OUR EXPERT PANEL includes David Houseman, a Grand Master IV judge and competition director for the BJCP from Chester Springs, Pa.; Beth Zangari, a Grand Master level judge from Placerville, Calif. and founding member of Hangtown Association of Zymurgy Enthusiasts (H.A.Z.E.); Scott Bickham, a Grand Master II judge from Corning, N.Y., who has been exam director or associate exam director for the BJCP since 1995; and Gordon Strong, a Grand Master V judge, principal author of the 2004 BJCP Style Guidelines and president of the BJCP board who lives in Beavercreek, Ohio.

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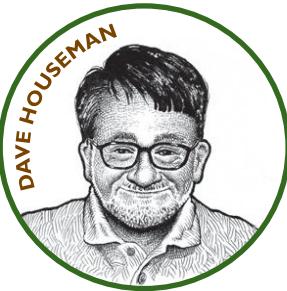
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THE SCORES



Endless Summer Light—Karl Strauss Brewing Co., San Diego, Calif.
BJCP Category: 1A American Light Lager

THE JUDGES' SCORES FOR ENDLESS SUMMER LIGHT



DAVE HOUSEMAN



BETH ZANGARI



SCOTT BICKHAM



GORDON STRONG

Aroma: Low, grainy malt aroma. Very low malt presence. High creamed-corn-like DMS aroma. No acetaldehyde, fruity esters or diacetyl. There a dullness to the aroma, not crisp or lager-like, that is often an indication of the effects of oxidation. No alcohol apparent. (7/10)

Appearance: Bright clarity. Gold color dark for the style. Thin head with adequate retention for style. Well carbonated. (3/3)

Flavor: DMS dominates over the malty underpinnings and balanced hop bitterness—both are somewhat big for an American Light Lager. No hop flavor. Some lemony acidity—likely from carbonation. DMS detracts from a sense of lager crispness as does the dullness from age. No diacetyl or fruity esters. No apparent alcohol evident. (12/20)

Mouthfeel: Medium-light body—too big for the style. Smooth, but not crisp, lager-like. A bit fizzy from carbonation—OK. No alcohol warming. (3/5)

Overall Impression: While not a best example of the style, it is still refreshing when cold. The DMS in this sample is overpowering and this sample is also suffering from oxidation that dulls the flavor profile over time; brewing process needs to be reconsidered. Perhaps this bottle was abused in shipping from San Diego to Southeastern Pennsylvania. It is also just too big for an American Light Lager. Still this is a good beer to have with hotdogs, burgers and to enjoy at a ballgame. (6/10)

Total Score: (31/50)

Aroma: Light, grainy bread crust malt dominates, and is backed up with delicate floral, rose and star jasmine hop aroma. A hint of DMS sneaks in at the finish, but fades quickly, as does the floral character as the beer breathes. (8/12)

Appearance: Brilliant clarity, straw color. Good head forms of finely bubbled white foam, which is moderately persistent. The foam falls to leave an amoebic pattern on the surface; bubbles continually rise. (3/3)

Flavor: Low, light malty, bready grain character is dominant flavor, with a whisper of floral hop flavor. Hop bitterness is fairly pronounced in comparison to the very clean malt and fermentation character. Mid-palate balance gives way to firm bitterness. Finishes clean with that same crisp, light bitterness lingering long afterward. (16/20)

Mouthfeel: Light bodied with somewhat spritzy carbonation; a light astringency lasts at the end, providing a crisp, gently dry finish. (5/5)

Overall Impression: The label bills this as the perfect beer to enjoy at the beach, a perfect warm (read HOT!) weather cooler. The malt character, while light, is still predominant enough to satisfy discerning taste buds accustomed to more robust fare. May be a bit fuller flavored than the average “lite” beer, but graciously so. The effervescent carbonation and crisp, dry finish are quite refreshing. (8/10)

Total Score: (40/50)

Aroma: Bready malt aroma with a hint of green apple. There is not any perceptible corn, but I do pick up light cabbage notes from DMS. There are some light fruity notes, but the ester level is low as appropriate for this style. Papery notes from oxidation emerge as the carbonation settles down. (8/12)

Appearance: Light gold in color, which is darker than most standard lagers. The clarity is brilliant, and the head retention is good for this style. (3/3)

Flavor: The malt character is unfortunately muted by papery notes from oxidation, but there are some nice bready notes underneath. The light fruitiness is at a sufficiently low level, and the sulfur notes add complexity but are less pronounced than in the aroma. The bitterness is low, even for this style. The sweetness lingers a bit longer than expected, and a few more IBUs would help the balance without shifting it beyond the style guidelines. (16/20)

Mouthfeel: Medium body—rather heavy for a light lager. Medium carbonation. A little creamy in character, which is not traditional. Seems heavy and thick for the style—not crisp and refreshing. No alcohol noted. (3/5)

Overall Impression: The body is the biggest drawback. It gives the beer a heavy mouthfeel and finish. It's not sweet—it seems dry but with a fair amount of dextrins. Nice hop character. Clean lager. Could be a little fresher—the flavors don't pop. With a lower finishing gravity and less mouthfeel, it would fit the style nicely. The balance of flavors is well-handled. A little too heavy for a lawnmower beer, but I did judge it after cutting the grass and it tasted pretty good. (7/10)

Total Score: (38/50)

Aroma: Mild neutral grain. Light corny DMS. Soft hops, barely noticeable. Just a hint of sulfur. Hops grow a bit as it warms. No esters, just some floral hops. Seems pretty clean—nothing off. (10/12)

Appearance: Perfectly clear. Tall white head, retained well. Tiny frothy bubbles. Pretty light yellow color. (3/3)

Flavor: Neutral grainy malt. Low bitterness. Dryish finish. Medium-low hop flavor, lightly floral. Very light corny DMS flavor in background. Clean lager character. Finish is full, not crisp, due to body. Grainy malt and light hop flavor in aftertaste. A little tired in flavor but not stale. (15/20)

Mouthfeel: Medium body—rather heavy for a light lager. Medium carbonation. A little creamy in character, which is not traditional. Seems heavy and thick for the style—not crisp and refreshing. No alcohol noted. (3/5)

Overall Impression: The body is the biggest drawback. It gives the beer a heavy mouthfeel and finish. It's not sweet—it seems dry but with a fair amount of dextrins. Nice hop character. Clean lager. Could be a little fresher—the flavors don't pop. With a lower finishing gravity and less mouthfeel, it would fit the style nicely. The balance of flavors is well-handled. A little too heavy for a lawnmower beer, but I did judge it after cutting the grass and it tasted pretty good. (7/10)

Total Score: (38/50)



THE JUDGES' SCORES FOR BELL'S LAGER



(Judged as 1E)

Aroma: Light, bready maltiness reminiscent of continental pilsner malt with a hint of corn-like DMS and low, spicy hop aroma. No diacetyl. No fruity esters. Alcohol not readily apparent. Balanced, pleasing, clean lager aroma right on target for the Dortmunder Export style. (10/12)

Appearance: Bright clarity. Gold color. Thin head dissipated rapidly and was hard to sustain. (2/3)

Flavor: Bready, continental malt up front with firm hop bitterness and low spicy hop flavor. Pilsner-like with noticeable alcohol and a hint of corn-like DMS. Finishes dry with bitter, tannic after-taste. No fruitiness or diacetyl. Minerally water content accentuates the hop bitterness and perhaps extracted some excess tannins from hops or malt. Balance, the hallmark of the style, is somewhat off as a bit hoppy and dry for the style, although close. (15/20)

Mouthfeel: Medium body. Lingering astringency in mouthfeel. Well carbonated but proteins were missing to sustain the head. Noticeable alcohol warming. Alcohol content seems higher than the stated 5.0-percent abv. (3/5)

Overall Impression: Aroma and initial flavor appropriate to style. The astringent finish and higher alcohol leave a persistent dryness that doesn't support the initial promise. This is not as balanced as the best examples of the style. Bitterness and tannins are a bit harsh. Additional proteins to support a foam stand would make this more eye-appealing. This would still be a good beer to have with spicy foods, such as Mexican, Thai or Indian. (7/10)

Total Score: (37/50)



(Judged as 1E)

Aroma: Moderately grainy, lightly sweet Pils malt aroma, with barest hint of DMS. Low note of cinnamon spicy hop; hints of sweet spice and a bit of peppery herbs. (8/12)

Appearance: Pale golden yellow, brilliant clarity. Some white bubbles form layer of foam that does not persist. (3/3)

Flavor: Pronounced hop bitterness prevails, but is supported by the bready, malty backbone. Balance is skewed to hop bitterness, though after a hint of DMS, the spicy herbal hop flavor comes forward mid-palate. Clean fermentation characteristics, no fruitiness or diacetyl. A crisp, slightly mineral flavor comes through toward the end, but the finish is clean, with a low, lingering bitterness. (16/20)

Mouthfeel: Medium bodied with moderate carbonation. No alcohol warmth, and no astringency. Lightly creamy texture. (5/5)

Overall Impression: Refreshingly clean, crisp malt character is reminiscent of back yard barbecues and late summer parties. Begs to accompany a burger fresh off the grill, served on white bread with a slice of vine ripe tomato and leaf of lettuce on a thin paper plate. Firm, lingering hop bitterness in the finish is more Czech Pils-like than I expected, but quite pleasant, especially on a hot summer day. I can almost hear the sprinklers in the background. (9/10)

Total Score: (41/50)



(Judged as 2B)

Aroma: Spicy and floral notes of Saaz leap out as soon as the beer is poured. There is a classic continental malt backbone with cracker and breadcrumb notes. I pick up a light fruitiness—I think more from hops than from the fermentation, and there are faint sulfur notes in the background. Nice first impression. (10.5/12)

Appearance: Straw color, not quite as deep as the classic examples, but within guidelines. Clarity is excellent, though the head retention is a bit lower than draft versions. (2.5/3)

Flavor: Malt hits the palate first, with moderate breadcrumb notes and a touch of light caramel. The sweetness gradually attenuates as the hops take over. The bitterness increases slowly, reaching a peak just after the beer is swallowed but is never too assertive. There are some esters, but these are mainly herbal and floral notes from the Saaz hops. In spite of the solid hop bitterness, the beer finishes a little sweet—even for this style. The balance would improve if it were a little drier. (17/20)

Mouthfeel: The moderate carbonation could be higher, which would help both the retention and the crispness lacking in the finish. There is a very slight astringency from the hops. (4/5)

Overall Impression: This is a very nice, refreshing example of the style. It showcases the Saaz hops and continental malts, and is well-made technically with a clean fermentation profile. A little more attenuation and carbonation would go hand-in-hand for improving the crispness of the finish and nudging it closer to classic examples of the style. (8/10)

Total Score: (42/50)



(Judged as 2B)

Aroma: Moderate noble hop nose, distinctive Saaz, has a "sea breeze" character with spicy and floral notes. Clean lager, hint of sulfur. Mild malt in the background. Hops are forward in the balance. The hops grow to moderately strong as the beer warms. (9/12)

Appearance: Light golden color. Tall creamy white head, retained well. The head developed a moussy, rocky character as it settled. Crystal clear. (3/3)

Flavor: Strong Saaz hop flavor. Medium-high bitterness. Solid malt underneath is supportive but not intrusive. Mostly a Pils malt flavor, but has a Munich-like richness as well. The malt flavor reminds me a bit of a maibock. Lingering bitterness in the finish with a little bit of malt richness. Clean lager fermentation. I do get some mineral flavor in the finish, making it a touch harsh. Full finish, too much for a Dortmunder. The malt character is richer than the Pils flavor alone of a Dortmunder, but not the same as a Bohemian Pils either. (15/20)

Mouthfeel: Medium body, almost medium-full. Moderate carbonation. Light alcohol. Minerally character with hops gives it a light astringency. (3/5)

Overall Impression: Strange—like a cross between a Dortmunder, Bohemian Pils, and a maibock. The Saaz character and fuller finish suggest a Pils, but the light color and mineral character suggest a Dort. The Munich malt richness is more like a maibock, but the bitterness is too high and the alcohol too low. So it probably isn't a great example of any of these styles, but it is a well-crafted and nicely drinkable beer. The balance is hoppy-bitter, and the fermentation is quite clean. If someone asked me "what is this?" I'd probably say it tasted like a hoppy, bitter maibock, sort of like Rogue Dead Guy is like a bitter maibock, although this is definitely a lager, and the hops are definitely Saaz. I'd say it's a nice drinking beer for those that like hoppy continental lagers; it's best enjoyed without trying to pigeonhole it into a style. (7/10)

Total Score: (37/50)

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by Charlie Papazian



Charlie, Fred and Ken's Imperial Helles Bock

Styleically speaking, the recently released collaborative Sierra Nevada 30th Anniversary Beer is different. Pioneer and original homebrew guru Fred Eckhardt, from Portland, Ore., Ken Grossman, founder and president of the 30-year-old Sierra Nevada Brewing Company, and I collaborated to represent the pioneering beer spirits each of us has been involved in.

Quickly we decided to brew a lager, especially in tribute to Fred's pioneering book, *Treatise on Lager Beers*, published in 1972. It was the first homebrewing book that discussed lager beer.

I had recently brewed an interesting and complex golden/amber lager with malt from a Czech maltster using traditional floor malting methods (see Worts in January/February 2010 Zymurgy). Unusual specialty malts were added for unique aroma, flavor and a nontraditional amber character. I wanted to pursue a direction that paid tribute to traditional brewing, malting, fermenting and hopping methods. Ken and the brewers at Sierra Nevada wanted to provide added value and a "thank you" to their customers with an elevated alcohol content that would add complexity and enhanced stability to the beer.

Using my 5.5-percent alcohol by volume (abv) homebrew recipe for a Czech-American style "amber-Helles" floral hopped lager, we ramped up the recipe to 8.3 percent with uniquely American techniques and blends of international hops, malt and yeast.

Water: In an attempt to develop typical Pilsener smoothness and unique hop characters, very soft water was maintained during the brewing process.

Charlie's 40th Anniversary Imperial Helles

ALL GRAIN RECIPE

INGREDIENTS for 5.5 U.S. gallons (20 liters)

13.0 lb	(5.9 kg) Weyermann/Bohemian Floor Malt
8.0 oz	(225 g) Belgian aromatic malt
8.0 oz	(225 g) Gambrinus honey malt
4 .0 oz	(113 g) Weyermann Sauer malt
1.0 oz	(28 g) Mt. Hood hops 4.2% alpha (4.2 HBU/118 MBU) 60 min
1.0 oz	(28 g) German Hallertauer hops 4.3% alpha (4.3 HBU/120 MBU) 60 min
1.0 oz	(28 g) Crystal hop pellets (1 min)
0.5 oz	(14 g) Crystal hop pellets (dry hop)
0.5 oz	(14 g) French Strisselspalt hop pellets (dry hop)
0.25 tsp	(1 g) powdered Irish moss
0.75 cup	Cry Havoc White Labs yeast (second choice: Bavarian type lager yeast)
	(175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Target Original Gravity: 1.070 (17.1 B)

Target Extraction Efficiency: 75%

Approximate Final Gravity: 1.014 (3.5 B)

IBUs: about 34

Approximate Color: 8 SRM (16 EBC)

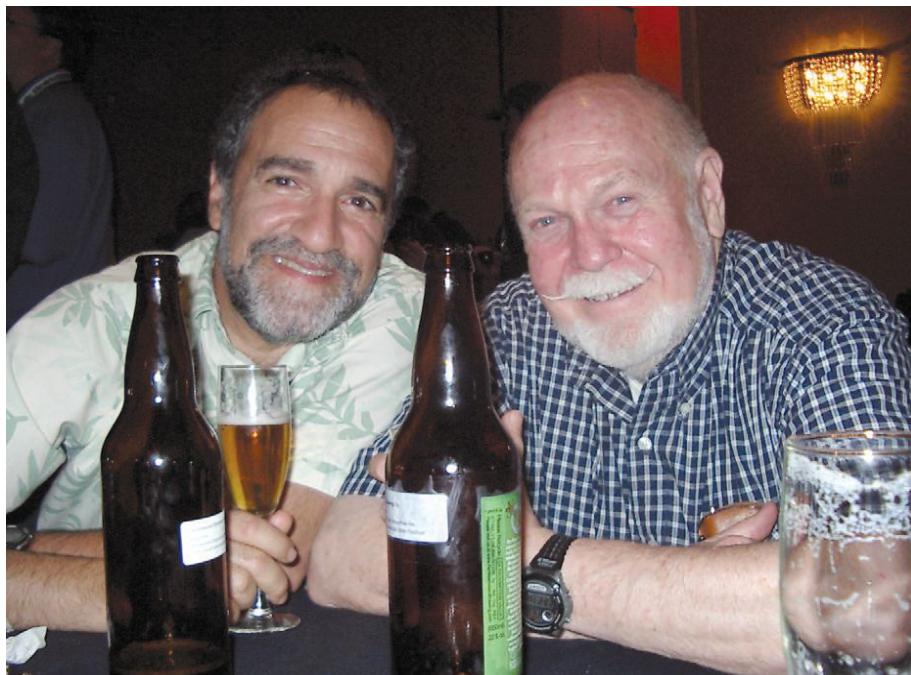
Alcohol: 7.4% by volume

DIRECTIONS

A step infusion mash is employed to mash the grains. Add 14.25 quarts (13.5 l) of 140° F (60° C) water to the crushed grain, stir, stabilize and hold the temperature at 132° F (53° C) for 30 minutes. Add 7 quarts (6.7 l) of boiling water and add heat to bring temperature up to 155° F (68° C) and hold for about 30 minutes. Raise temperature to 167° F (75° C), lauter and sparge with 4.5 gallons (17 l) of 170° F (77° C) water. Collect the first 6 gallons (23 l) of runoff. Add 60-minute hops and bring to a full and vigorous boil.

The total boil time will be 60 minutes. When 10 minutes remain, add the Irish moss. When 1 minute remains add the 1-minute hops. After a total wort boil of 60 minutes, turn off the heat and place the pot (with cover on) in a running cold-water bath for 30 minutes. Continue to chill in the immersion or use other methods to chill your wort. Strain and sparge the wort into a sanitized fermenter. Bring the total volume to 5.5 gallons (21 l) with additional cold water if necessary. Aerate the wort very well.

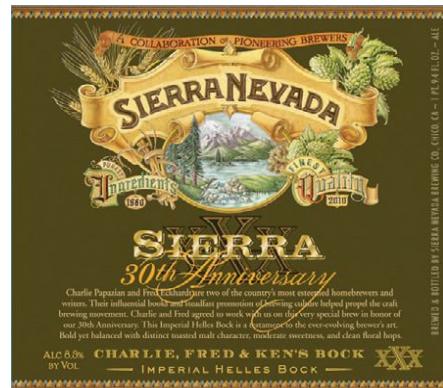
Pitch the yeast when temperature of wort is about 70° F (21° C). Once visible signs of fermentation are evident, ferment at temperatures of about 55° F (12.5° C) for about 10 to 14 days or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hop pellets for dry hopping. Lager the beer at temperatures between 35- 45° F (1.5-7° C) for 6 to 10 weeks. Prime with sugar and bottle or keg when complete.



Charlie relaxes and has a beer with Fred Eckhardt (above). Charlie and Sierra Nevada's Ken Grossman keep a close eye on their batch (left).

Yeast: Several batches were made using two lager yeasts: Sierra Nevada's "house" lager yeast and my lager yeast that I have been using in most of my homebrewing for the past 27 years (available as Cry Havoc yeast through White Labs.) Sierra Nevada's house lager yeast helped with

attenuation, or in other words more complete fermentation. My lager yeast contributes subtle and pleasant sulfur-like character reminiscent of fresh baked bread. At bottling, the beer was "backpitched" with both yeasts added to the bottles for better flavor stability and contribution to a comforting and sensual bready flavor and aroma. Primary fermentation was pursued at temperatures between 52 and 56° F (11-13° C). Lagering was done for a few weeks at lower temperatures.



Malt: About 50 percent of the base malt was Czech (Bohemian) floor-malted Pilsener. The other half was large batch European Pilsener malt typically used in many Pilseners. Also used was about 3-percent Belgian aromatic malt and 3-percent Canadian honey malt. The aromatic malt adds significant amber color along with mild, yet notable bready/toasted "fresh out of the oven" sweet malt aromas and flavors. Honey malt contributes a bit more color along with a very pleasant and subtle floral honey aroma and flavor.

Hops: A unique blend of hops for bittering, flavor and aromatic character was used. American and unique late and dry hopping techniques were involved in infusing the unique characters of hops. New Zealand Pacific Hallertauer hops were used for the bittering and long boil addition to the brew. A blend of German Tettnang and German Spalt Select were used during the latter stage of boiling for flavor and aroma. The brews were dry hopped during lagering with a 60/40 blend of American Crystal hops and German Hallertauer using Sierra Nevada's unique recirculating "torpedo" method.

The hops were specifically chosen to contribute floral and sweet hop aromatics and flavor, with a smooth, gentle, yet satisfying bitterness. Specifically avoided were American fruity and citrus-like hops such as Cascade, Centennial, Simcoe, Amarillo, Citra and Columbus. The hops that were used were chosen to dynamically and symbiotically complement the deliberately infused malt characters. Final hop bitterness is about 41 bitterness units.

Original gravity was 19° Plato (1.0785) and finishing at about 3.85 Plato (1.015).

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Six 200-barrel batches were brewed. That's a limited edition of 180,000 25.4-ounce corked bottles, available in markets that sell Sierra Nevada beer. The beer is unique. It does not fit any particular style. The imperial helles bock style implies strength yet does not infringe upon the lighter colored and less complex malt traditions of German Helles and German Maibocks. German light-colored bocks do not have even the slightest hint of amber. They do not have the toasted complexity nor the honey floral character. German Maibocks and Helles bocks rarely, if ever, exceed 8-percent abv. German light bocks rarely exceed 27 bitterness units. This imperial helles bock is slightly higher at 41 bitterness units in order to balance the higher alcohol and higher malt character; the effort is designed to develop a delicious balance, high on drinkability.

This brew is not a knock-your-socks-off hop and alcohol punch. It's a different direction taken than most other American craft specialty beers. For one, it is a lager. With the unique hop varieties used for flavor, aroma and dry hopping, it attempts to take the beer drinker in new directions, a theme that pioneer American brewers have been pursuing for 30 years.

I predict that the beer freshly available will have a bit more hop bite, but in a few short months of appropriate cellar aging at cool and stable temperatures, the intricately designed relationships between malt and hops will develop—exquisitely. With a year's aging at about 50° F (10° C) cellar temperatures, hop floral and aromatic notes will begin to subside, while malt character may elevate. The beer will take on unique and undetermined directions, surely to remain interestingly delicious.

Fred, Ken, the Sierra Nevada brewers and I hope you enjoy this unique and “first of a kind” experience.

Finally, you might be wondering why the label says “ale.” In some states such as Texas, there are arcane laws that define any beer over a certain percent alcohol as “ale” and must be labeled as such. That's why sometimes you see such oddities labeled “lager ale”. Go figure...

Charlie's 40th Anniversary Imperial Helles

MALT EXTRACT RECIPE

INGREDIENTS for 5.5 U.S. gallons (20 liters)

9.75 lb	(4.4 kg) very light malt extract syrup or 7.8 lb (3.54 kg) very light DRIED malt extract
4.0 lb	(1.82 kg) Weyermann/Bohemian Floor Malt
8.0 oz	(225 g) Belgian aromatic malt
8.0 oz	(225 g) Gambrinus honey malt
4.0 oz	(113 g) Weyermann Sauer malt
1.5 oz	(42 g) Mt. Hood hops 4.2% alpha (6.3 HBU/176 MBU) 60 min
1.0 oz	(28 g) German Hallertauer hops 4.5% alpha (4.3 HBU/120 MBU) 60 min
1.0 oz	(28 g) Crystal hop pellets (1 min)
0.5 oz	(14 g) Crystal hop pellets (dry hop)
0.5 oz	(14 g) French Strisselspalt hop pellets (dry hop)
0.25 tsp	(1 g) powdered Irish moss
	Cry Havoc White Labs yeast
0.75 cup	(175 ml measure) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Target Original Gravity: 1.070 (17.1 B)

Target Extraction Efficiency: 75%

Approximate Final Gravity: 1.014 (3.5 B)

IBUs: about 34

Approximate Color: 8 SRM (16 EBC)

Alcohol: 7.4% by volume

DIRECTIONS Heat 1.25 gallons (4.75 l) water to 172° F (77.5° C) and add crushed grains. Stir well to distribute heat. Temperature should stabilize at about 155° F (68° C). Wrap a towel around the pot and set aside for about 45 minutes. Have a homebrew. After 45 minutes add heat to the mini-mash and raise the temperature to 167° F (75° C). Pass the liquid and grains into a strainer and rinse with 170° F (77° C) water. Discard the grains. Add to the sweet extract you have just produced more water, bringing the volume up to about 2.5 gallons (9.5 l). Add malt extract and 60 minute hops and bring to a boil.

The total boil time will be 60 minutes. When 10 minutes remain add Irish moss. When 1 minute remains add the 1-minute hops. After total wort boil of 60 minutes, turn off the heat. Immerse the covered pot of wort in a cold water bath and let sit for 15-30 minutes or the time it takes to have a couple of homebrews. Strain out and sparge hops and direct the hot wort into a sanitized fermenter to which 2.5 gallons (9.5 l) of cold water has been added. If necessary add cold water to achieve a 5.5 gallon (21 l) batch size. Aerate the wort very well.

Pitch the yeast when temperature of wort is about 70° F (21° C). Once visible signs of fermentation are evident, ferment at temperatures of about 55° F (12.5° C) for about 10 to 14 days or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hop pellets for dry hopping. Lager the beer at temperatures between 35-45° F (1.5-7° C) for 6 to 10 weeks. Prime with sugar and bottle or keg when complete.

Enjoy. Best served in a brandy-like “globed” stemmed glass at about 45° F (7° C). Pint shaker glasses are not a good choice of glassware for this brew.

Let's cut the shuck and jive and get on with a recipe.

Here's what I'd brew if I were going to

formulate a homebrew recipe (and one that would celebrate my 40 years of homebrewing). It varies a bit from the formula theme of Sierra Nevada's Imperial Helles Bock. Homebrewers always like to tinker, right?

Charlie Papazian is founder of the American Homebrewers Association. 

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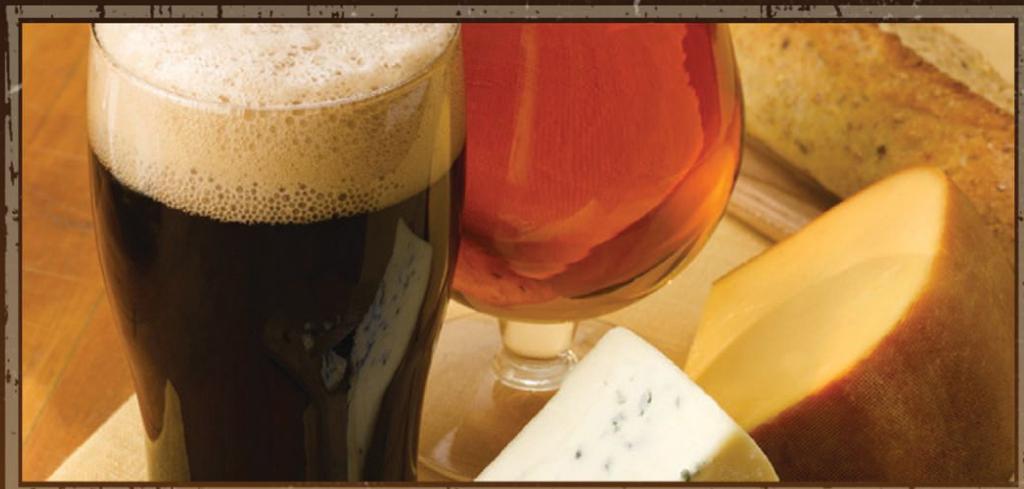
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By Kai Troester

Kräusening



When carbonating beer by bottle conditioning, two things must be present: fermentable sugars and yeast. The amount of fermentable sugars controls the level of carbonation while the amount of yeast has little effect, provided a sufficient amount of viable cells are present. Though Balling¹ found that 1g of fermented extract yields 0.463 g CO₂, 0.484 g ethanol and 0.053 g yeast, calculations are simplified by assuming that 1g fermentable sugar yields 0.5 g of each CO₂ and ethanol and no additional yeast.

The priming sugars commonly used by homebrewers are either table sugar (sucrose) or corn sugar (glucose). Some may also use dried malt extract. Very few put forth the effort of priming their bottled beers with hopped wort (*speise* or *gyle*) or actively fermenting beer (*kräusen*, sounds like “croysen”) though most bottle conditioning microbreweries do exactly that. This might be explained by the fact that actively fermenting beer of the same type is more readily available in a brewery.

Homebrewers, however, should give priming with *speise* or *kräusen* a closer look since it has a few benefits over the use of sugar or extract. This is especially true if a wort identical or similar to the

beer's original wort can be used.

- The original gravity of the beer does not change. If beer is primed with sugar its original gravity is effectively increased by 2-3 gravity points.
- If kräusen is used, fresh and highly viable yeast is introduced, which accelerates the carbonation process.
- The shortened carbonation time can be used to lengthen the bulk aging process.
- The highly active yeast will quickly scavenge any oxygen that has been introduced during the bottling process.

A different yeast can be introduced at bottling time. By using a lager yeast, for example, ales can be carbonated at cold basement temperatures.

The main drawback of bottling with *kräusen* or *speise* is the added complexity.

To get started, you need wort. I prefer to brew more than I can fit into the fermenter and store the remainder in the freezer. Soda bottles or heavy duty freezer bags work well for storage. Because the wort will be boiled later, sanitary collection practices are not needed. My process involves filtering the wort, which remains in the boil kettle after racking, through a paper towel set atop a screen in a large funnel. That gives me the wort needed for future starters and priming with *kräusen*. It is also possible to collect the wort using a sanitary procedure and store it in a cold and sanitary environment until needed.

A few days before bottling, the wort is boiled. The amount of wort needed depends on the amount of beer to be primed, desired carbonation, and original gravity. For 5-gallon (19 l) batches, I prepare approximately 1.5 qt (1500 ml) in a 2000 ml flask. When using an Erlenmeyer



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flask to boil the wort, it is advisable to add a stir bar even though a stir plate will not be used. The stir bar provides nucleation sites for the boiling wort, which results in a more even boil. This process is very similar to making a starter.

Once the wort has boiled for 10 minutes, it is cooled, aerated, and ready for the yeast. The most practical source of yeast is the sediment under the beer. To sample yeast, take a sanitized racking cane and close the top end with your thumb. Next, push it into the sediment under the beer and remove your thumb so that a mix of beer and yeast sediment rushes into the cane. Close the top and move the cane into the flask with the prepared wort and dump the yeast. Repeat this a few times until you have enough yeast. Although this is like making a starter, you only need just enough yeast to properly pitch that volume of wort. Finally, let the fermentation start at proper temperatures required for that particular yeast.

Once fermentation has started and a *kräusen* has formed, you can bottle the beer. Up to this point, the exact amount of

kräusen needed is not known. Although you can guess how much wort is needed, the exact volume cannot be calculated until the current gravity is known. The gravity keeps changing as the *kräusen* beer is fermenting. Shortly before bottling, measure the current gravity and use the formula given in the section "Calculating Kräusen Volume" to determine the needed volume. Keep in mind that you will not use all the prepared *kräusen* to carbonate your beer. Only use what you can decant without getting yeast from the sediment on the bottom. Adding more than the yeast in suspension would lead to an excessive amount in the bottles.

Before the *kräusen* beer is decanted, its *kräusen* should be skimmed. The brown gunk on top is bitter hop resins and proteins that precipitate from the beer as the pH is falling during fermentation. Those should not get into the beer. It is best to decant the *kräusen* into a measuring cup until the calculated volume is reached or sediment gets in the cup. Sometimes the usable *kräusen* volume is less than what is needed. If this is the case, the next section gives a formula that allows calculating the weight of additional sugar. *Kräusen*, beer, and, if necessary, sugar are mixed in the bottling bucket and the primed beer is bottled as usual.

Calculating Kräusen Volume

Carbonation is measured as the amount of CO₂ dissolved in beer. For this, two commonly used units exist. The unit "g/l" expresses the weight of CO₂, in grams, that is dissolved in 1 liter of beer. The unit "volumes of CO₂" expresses how many times larger than the volume of beer the dissolved CO₂ would be if it was not dissolved and under atmospheric pressure. To convert between the two units use: 1 volume of CO₂ = 2 g/l CO₂.

Before the amount of *kräusen* can be calculated, the amount of CO₂ that has to be added to the beer needs to be determined. Fermented beer is saturated with CO₂ and the amount of CO₂ in "still" beer depends on its temperature. The lower the temperature, the more CO₂ is going to be dissolved. Table 1 shows the CO₂ content for beer temperatures ranging from 32 to 68° F (0 – 20° C). While CO₂

TABLE I: CO₂ CONTENT FOR BEER WITH A CO₂ HEAD SPACE AT ATMOSPHERIC PRESSURE²

temperature		CO ₂ content	
C	F	g/l	vol
0	32	3.2	1.6
2	36	3.0	1.5
4	39	2.8	1.4
6	43	2.6	1.3
8	46	2.4	1.2
10	50	2.3	1.2
12	54	2.1	1.1
14	57	2.0	1.0
16	61	1.9	1.0
18	64	1.8	0.9
20	68	1.7	0.9

TABLE 2: DESIRED CARBONATION LEVELS FOR VARIOUS BEER STYLES³

beer style	g/l CO ₂	vol CO ₂
British Ales	3.0-4.0	1.5-2.0
Porter, Stout	3.4-4.6	1.7-3.2
Belgian Ales	3.8-4.8	1.9-2.4
American Ales	4.4-5.4	2.2-2.7
European Lagers	4.4-5.4	2.2-2.7
Belgian Lambic	4.8-5.6	2.4-2.8
American Wheat	5.4-6.6	2.7-3.3
German Wheat	6.6-9.0	3.3-4.5

head pressure also affects CO₂ content, that factor is eliminated by assuming the beer is sitting at atmospheric pressure. Beer style and brewer's preference, on the other hand, determines the targeted level of carbonation. To guide that decision, Table 2 lists common carbonation ranges for various beer styles. The CO₂ difference between targeted carbonation and CO₂ currently in the beer needs to be created by *kräusen*, or other sugars added before bottling.

Once the missing carbonation is known, the volume of *kräusen* needed is calculated with the following formula. It assumes that the beer has finished fermentation and the same wort was used for *kräusen* and beer:

$$V_K = 1.95 * V_{pb} * c_K / (G_{U_K} - G_{U_b})$$

where:

V_K: *kräusen* volume in quarts

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V_{pb} : Volume of primed beer in quarts.
This is the volume of the beer to be primed plus the volume of *kräusen* added
 c_k : missing carbonation in volumes of CO_2

GU_K : current gravity units of the *kräusen* beer (e.g. 32 if the gravity is 1.032)
 GU_b : final gravity units of the beer (metric brewers replace the factor 1.95 with 0.24 and use the respective metric units liter, g/l CO_2 and Plato)

To keep the formula simple, an initial guess at the *kräusen* volume is made to determine the volume of primed beer (V_{pb}). If that guess is far from the actual *kräusen* volume, the calculation can be repeated with a more precise V_{pb} based on the *kräusen* volume calculated during the first step. If *speise* is used for priming, the gravity units of the starting gravity should be used for GU_K .

If more *kräusen* is needed than what is available, the carbonation produced by the available *kräusen* volume can be calculated with:

$$c_k = 0.51 * V_k * (GU_K - GU_b) / V_{pb}$$

By using an amount of sugar calculated with the following formula, missing carbonation can be supplemented:

$$m_s = 0.14 * c_s * V_{pb} / A$$

where:

m_s : weight of the sugar in ounces
 c_s : the carbonation that is produced by the sugar in volumes of CO_2

V_{pb} : the volume of the primed beer in quarts
A: the sugar's fermentability factor. (1.0 for table sugar, 0.92 for corn sugar³ and 0.65 for dried malt extract)
(metric brewers replace the factor 0.14 with 2 and use the respective metric units g, g/l CO_2 and liter)

Example:

20 qt of 50° F beer needs to be primed and bottled. The beer's final gravity is 1.012 and the *kräusen*'s current gravity is 1.040. It is an American ale and the targeted carbonation level is 2.5 volumes

of CO_2 .

The beer's current CO_2 content is 1.2 volumes and the added *kräusen* needs to create an additional $2.5 - 1.2 = 1.3$ volumes. To calculate the *kräusen* volume it is estimated that about 1 qt of *kräusen* will be used. This brings the primed beer volume (V_{pb}) to $20 + 1 = 21$ qt:

$$V_k = 1.95 * 21 * 1.3 / (40 - 12) = 1.9 \text{ qt}$$

If the calculated *kräusen* volume is used to correct the V_{pb} estimation to 21.9, a more precise *kräusen* volume of 2 quarts is found. However, only 1.5 qt *kräusen* was prepared. Leaving behind the yeast sediment further reduces the usable volume to 1.3 qt. The 1.3 qt *kräusen* will create:

$$c_k = 0.51 * 1.3 * (40-12) / 21.3 = 0.85 \text{ volumes of } \text{CO}_2 .$$

The missing $1.3 - 0.85 = 0.45$ volumes of CO_2 need to be created by the addition of table sugar:

$$m_s = 0.14 * 0.45 * 21.3 / 1 = 1.3 \text{ oz}$$

To properly prime the beer, 1.3 quarts of *kräusen* beer and 1.3 ounces of table sugar are needed.

Though this series of calculations seems complicated, it is easily implemented in a spreadsheet. This allows for quick determination of *kräusen* and sugar amounts as soon as the actual gravity of the *kräusen* beer has been calculated.

Kai Troester has been homebrewing for four years, focusing on German styles and brewing techniques. The science behind brewing fascinates him and for the last two years, he has been working on braukaiser.com, a Web site dedicated to homebrewing science and German brewing techniques. He lives in Pepperell, Mass. 

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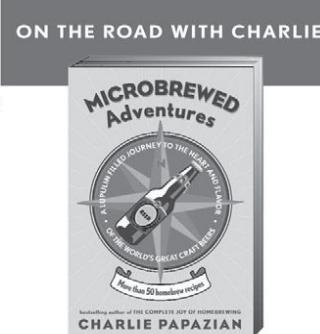
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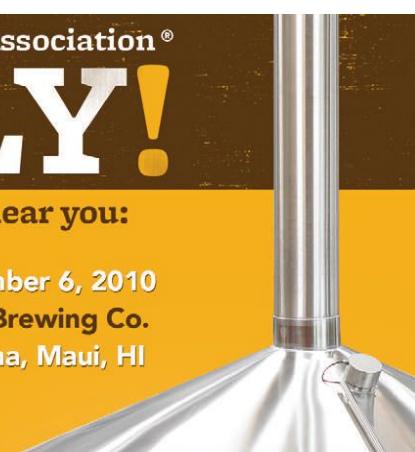
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Bikes and Beers Abroad

Imagine your dream job when you were a kid, and how fun and amazing that job played out in your mind. Many children wanted to be firefighters or police officers, either battling flames or crime and being a hero all the while; if only it were the same in reality. Well, I'm that kid, except my "job" for the next year exists in real life, and I feel like a kid in a candy store! Don't worry, though, because with everything I'm doing, I'm going to bring you along for the ride.

I left at 7:20 p.m. on July 27 from Chicago, where I embarked on a year-long journey around the globe studying all aspects of brewing cultures in 12 countries. During this year, the obvious places I'm visiting include breweries and pubs, but I also will encapsulate everything that has to do with beer including hop/grain farms, malt houses, homebrew clubs, advocacy groups, universities, distributors and political offices. With just about everywhere I'm traveling, I'm doing it on bicycle, discovering what makes each country and each region's brewing cultures and traditions unique.

During my year of travels, I have acquired apprenticeships at the following breweries:

- Fullers Brewery: London, England (August-October 2010)
- Kiuchi Brewery: Ibaraki, Japan (November 2010-January 2011)
- Nørrebro Brewery: Copenhagen, Denmark (February-April 2011)

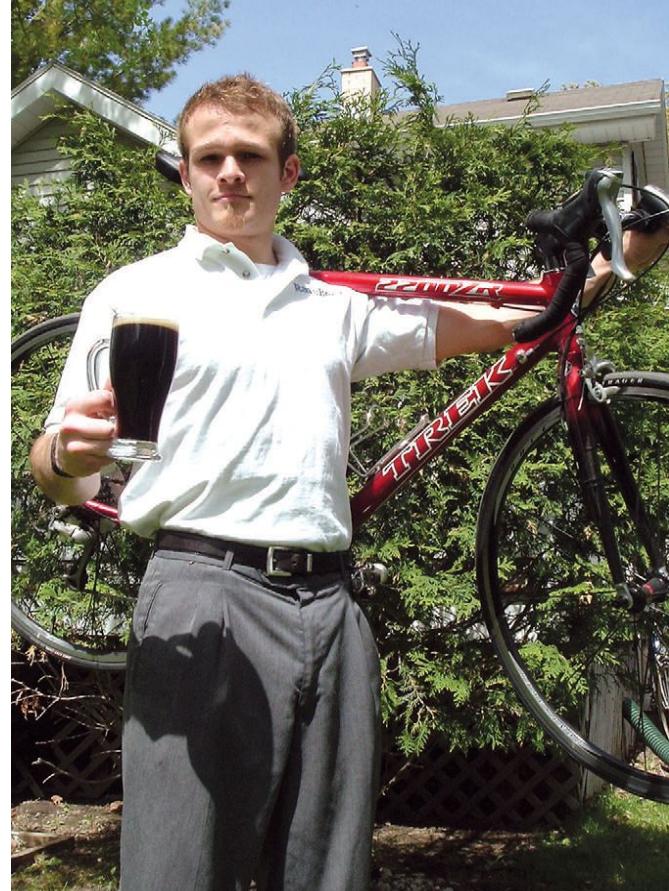
The final three months of my trip, May through July of 2011, will be spent bicycling through Belgium, the Netherlands, France, Luxembourg, Germany, Switzerland, Austria, and the Czech Republic. Without any apprenticeships taking up time during this period, I will

be able to focus even more on the many different brewing regions throughout these great brewing countries. Though I expect to find many old and historical brewing traditions, I'm also excited to discover the brewers that may be pushing beer's "limit" to new heights!

When my time arrives to return to the United States in August of 2011, my journey will most definitely not be over. Using my experiences and travels as catalysts, I will be traversing the country speaking at colleges and universities about how students can learn to respect

the greatness of all beer. Today, our country as a whole teaches an abstinence-style of education, and bluntly, it does not work.

My hope is to inspire new and seasoned drinkers to discover for themselves the vast and historical qualities of the world's brewing cultures. Each country, region and brewery is unique to itself, and to no wonder what else is being brewed out there seems like a waste. For me, beer is a social lubricant for discovering world communities and people, while holding the utmost respect for each region and their traditions. Many people have ambitions in life; I'm just a guy who happened to follow through with one. This trip truly



is like living the dream, and I hope everyone will be able to follow my progress along the way at www.bikeforbeer.org.

Skål!

Ilan Klages-Mundt graduated in 2009 from Lawrence University's Conservatory of Music in Appleton, Wis., where the cello was his main instrument. As an avid homebrewer for the past three years, beer is a great passion, and although he may still pursue a musical career in the future, beer will always play an important role in Ilan's life.

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