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The Journal of the American Homebrewers Association®

Gadgets Issue

7th ANNUAL



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The Roots of Brewing

Boston Beer founder Jim Koch refers to homebrewing as "an entire root system that has always supported and sustained [the brewing industry]."

"I made the first batch of Samuel Adams in my kitchen," emphasized Koch, who announced the winners of the Samuel Adams LongShot competition in Denver on October 12, the day before medals were awarded in the 7th annual Great American Beer Festival Pro-Am competition.

Homebrewers James Schirmer (Beerflower Wheat, brewed with hibiscus) and Zack Adams (Magnificent Seven, with seven American hop varieties) will join Samuel Adams employee Dave Anderson (Strawberry Lager) as the featured brewers in the 2013 Samuel Adams LongShot American Homebrew Contest variety six-pack that will hit shelves in February.

"As a homebrewer for more than 25 years, I'm proud to help these winners achieve the ultimate homebrew dream by making their beer available to drinkers across the country," said Koch.

The GABF Pro-Am competition, which pairs amateur brewers with professional brewers and was conceived by Dogfish Head founder (and homebrewer) Sam Calagione, had a record 94 entries in 2012. The gold medal was awarded to New Belgium Brewing and AHA member Jay Shampo for More Fun Blonde. Silver went to RAM Restaurant and Brewery in Wheeling, Ill. and AHA member Scott Pointon for Pointon's Proper, an English mild. Bronze went to American Pilsner from Minneapolis Town Hall Brewery and AHA member Kyle Sisco. (See the Winners Circle on page 59 for more on the winners and their recipes).

Everywhere you looked at GABF in 2012, there were further ties to homebrew-

ing. In fact, the Brewers Association's annual GABF media luncheon featured homebrewing as its theme, and attendees sampled homebrewed Paparazzi Ale (a wet hop pale ale brewed with Cascade hops from Charlie Papazian's yard) before settling in for the beer pairing lunch and speaker format that included the likes of Papazian and Colorado Gov. John Hickenlooper. Hickenlooper, who co-founded the Wynkoop Brewing Co. in Denver in 1988, brewed his first batch of homebrew in the summer of 1971. (Incidentally, Hickenlooper's deputy chief of staff is one of the newest members of the American Homebrewers Association, inspired by what he saw at the GABF. Hickenlooper is an AHA member as well.)

Papazian beat Hickenlooper to the mash paddle by a year, brewing his first batch in 1970 at the University of Virginia. He still brews several batches a year, sharing many of those recipes in his World of Worts column in *Zymurgy*. "I don't brew beer because I have to," emphasized Papazian.

AHA director Gary Glass spoke at the luncheon, telling the media, "Specialty beer is the essence of what homebrewing really is all about. The specialty beers being made by today's homebrewers are tomorrow's craft beers."

Randy Mosher, author of *Radical Brewing and Tasting Beer*, told the media, "In the 1980s, I caught an incurable disease called homebrewing." Mosher, who has now won two medals at the GABF with his brewery, 5 Rabbit Cerveceria, said that even with the explosion of craft beer options in the U.S., "still people are driven to homebrew. They want to get their hands dirty and brew it."

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



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>> GET THERE!

QUEEN CITY BREWERS FESTIVAL

The Queen City Brewers Festival (QCBF) returns February 2 in Charlotte, N.C. QCBF is exclusive to the Charlotte-area breweries that are putting the Queen City on the craft beer map. The event will feature a diverse selection of beer styles and flavors to taste and learn about from official brewery representatives.



With Charlotte's craft beer market exploding in recent years, the goal of this event is to spotlight the city's emerging craft breweries while bringing awareness to the event's host, Partners for Parks, a nonprofit, nonpartisan foundation that seeks to promote and enhance parks, recreation, and open space in neighborhoods throughout Mecklenburg County and the surrounding area.

More than 30 craft beers will be served with each brewery showcasing its full lineup of beers. Brewers are encouraged to bring one "super" flavor or style of beer especially for QCBF, as the event takes place the day before the Super Bowl.

QCBF partners with Charlotte-based food vendors and features works by local artists. Guests will also enjoy live music. Tasting sessions include 1-4 p.m. and 6-9 p.m. For more information go to www.qcbrewfest.com

January 10-12
Big Beers, Belgians and Barleywines Festival
Vail, CO
bigbeersfestival.com

January 18-19
Great Alaska Beer & Barley Wine Festival
Anchorage, AK
<http://auroraproductions.net>

January 26
Atlanta Cask Ale Tasting
Atlanta, GA
Classiccitybrew.com/acat.html

February 9-17
San Francisco Beer Week
San Francisco, CA
www.sfbeerweek.org

February 16-23
Arizona Beer Week
Arizonabeerweek.com

February 22-March 3
New York City Beer Week
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Kent Reuille, Wesley Chapel, Fla.



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

BEER QUOTE

"If I wanted to make money, I wouldn't be doing this."

—Van Havig, owner of Gigantic Brewing Co. in Portland, Ore.



<< THE LIST

CRAFTBEER.COM'S GREAT AMERICAN BEER BARS

In September, the readers of CraftBeer.com selected their favorite beer bars in the country. The list recognized both the top three overall most popular craft beer bars in the country and the top three from each of five U.S. geographical regions.

CraftBeer.com asked readers to nominate their favorite craft beer bars in the country, and received more than 3,300 nominations. The choices were narrowed down to the 10 most nominated bars in each of the five regions of the country. Almost 30,000 votes were cast, resulting in the top three overall and regional winners. Voting was conducted from September 13 until September 20, 2012.

Overall winners:

1. Mekong Restaurant, Richmond, VA
2. Hopcat, Grand Rapids, MI
3. The Thirsty Monk, Asheville, NC

Regional winners:

South

1. The Thirsty Monk, Asheville, NC
2. Hoppy Monk, El Paso, TX
3. Avenue Pub, New Orleans, LA

Mountain West

1. Falling Rock Tap House, Denver, CO
2. Oskar Blues Homemade Liquids & Solids, Longmont, CO
3. Mayor of Old Town, Fort Collins, CO

Pacific

1. APEX, Portland, OR
2. Urban Family Brewing, Seattle, WA
3. Beer Revolution, Oakland, CA

North Central

1. Hopcat, Grand Rapids, MI
2. Founders Taproom, Grand Rapids, MI
3. Vintage Estate Wine and Beer, Boardman, OH

Northeast

1. Mekong Restaurant, Richmond, VA
2. The Ruck, Troy, NY
3. Willimantic Brewing Company, Willimantic, CT

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The BTU comes in four colors: red, yellow, black, and grey, and retails for \$29.95, or a two-pack for \$49.95. A limited edition color (black with bright green lettering) is also available. Check the website (www.growleronboard.com) for current availability.

By Gary Glass



2013 Will Bring New Programs to AHA

This issue likely finds its way into your hands shortly before or just after New Year's Day 2013. It seems like a fitting time to look back on 2012 and see where we've come, and to take a look ahead at what's to come in 2013.

Here are some highlights from 2012:

- In January, American Homebrewers Association membership exceeded 30,000 for the first time in the organization's history and has continued to grow every month since.
- The AHA worked with the Wisconsin Homebrewers Alliance on the successful passage of a homebrew bill allowing Wisconsin's homebrewers to once again remove their homemade beer, wine, cider, and mead from their homes to share with friends and club members, enter in competitions, and exhibit at beer festivals.
- The 2012 AHA National Homebrew Competition judged a record 7,823 entries.
- The National Homebrewers Conference, held in Washington state for the first time, was a tremendous success with more than 1,800 attendees.
- We recorded all of the conference seminars in 2012 and posted them in a Members-Only area of the Let's Brew section of HomebrewersAssociation.org, so members who could not attend the conference can benefit from educational opportunities offered by the National Homebrewers Conference. With each successive conference, we will add to the seminars accessible on HomebrewersAssociation.org.
- We added eight pages to *Zymurgy* magazine, to give you more of what you want each issue.



The GABF Pro-Am Competition set a new record with 94 entries judged.

- The AHA has posted past issues of *Zymurgy* dating back to January 2000 to the online eZymurgy, accessible exclusively to members, providing a vast archive of information to the entire AHA membership.
- The Great American Beer Festival Pro-Am Competition set a new record with 94 entries judged.
- We changed the name of the popular Pub Discount Program to AHA Member Deals to recognize the non-pub businesses, particularly homebrew supply shops, that offer discounts to members. Along with that change, we made it easier to search for discounts via an online map and mobile-friendly website that allows you to find nearby Member Deals participants via your mobile device's GPS. (I suggest you add AHAMemberDeals.org to your mobile device's homepage, so you can always find the nearest Member Deals participant wherever you go.)
- Through October, the AHA had added 182 new participants to the AHA Member Deals program. We will continue to add more businesses each month.

For 2013, we are introducing some exciting new programs to the AHA, largely



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inspired by the members of the AHA Governing Committee.

- The AHA will fund member-driven, homebrew-related research and experiments to expand homebrewer knowledge through articles posted to HomebrewersAssociation.org and in *Zymurgy* magazine, and presentations given at the AHA National Homebrewers Conference. A newly formed subcommittee of the AHA Governing Committee and AHA staff will vet proposed research topics. Guidelines for prospective research projects will be available soon on HomebrewersAssociation.org.
- We will launch a new non-competition-based club service/activity award to recognize clubs that contribute to their local communities and that actively work to educate their members in all things homebrew-related. In addition to recognizing deserving clubs, the award will send a positive message about the contributions homebrew clubs around the country are making in their local communities. The AHA will publish the best ideas coming from the submitting clubs, in hopes of providing inspiration for all clubs. The AHA Governing Committee will review applications and choose the winner of the annual award to be announced at the National Homebrewers Conference.

- We will have a much bigger venue for the 2013 AHA National Homebrewers Conference in Philadelphia, which means we can accommodate more than 2,500 attendees—far more than at any previous conference.
- The AHA will be conducting our first ever nationwide survey of homebrewers with the goals of better understanding the needs of homebrewers and collecting data that will enable the AHA to more effectively promote the hobby and protect homebrewer rights.
- We will be devoting more staff time to HomebrewersAssociation.org to provide timely coverage of the latest happenings in the homebrew world and in-depth educational content for homebrewers of all skill levels.

In addition to all of the new initiatives, the AHA will continue to offer all of the great benefits and programs members are accustomed to. We will continue efforts to legalize homebrewing in Alabama and Mississippi, and stand up for homebrewer rights wherever they are threatened in the U.S.

I wish you peace, joy, and plenty of tasty homebrew this holiday season.

Until next time, happy homebrewing!

Gary Glass is director of the American Homebrewers Association.

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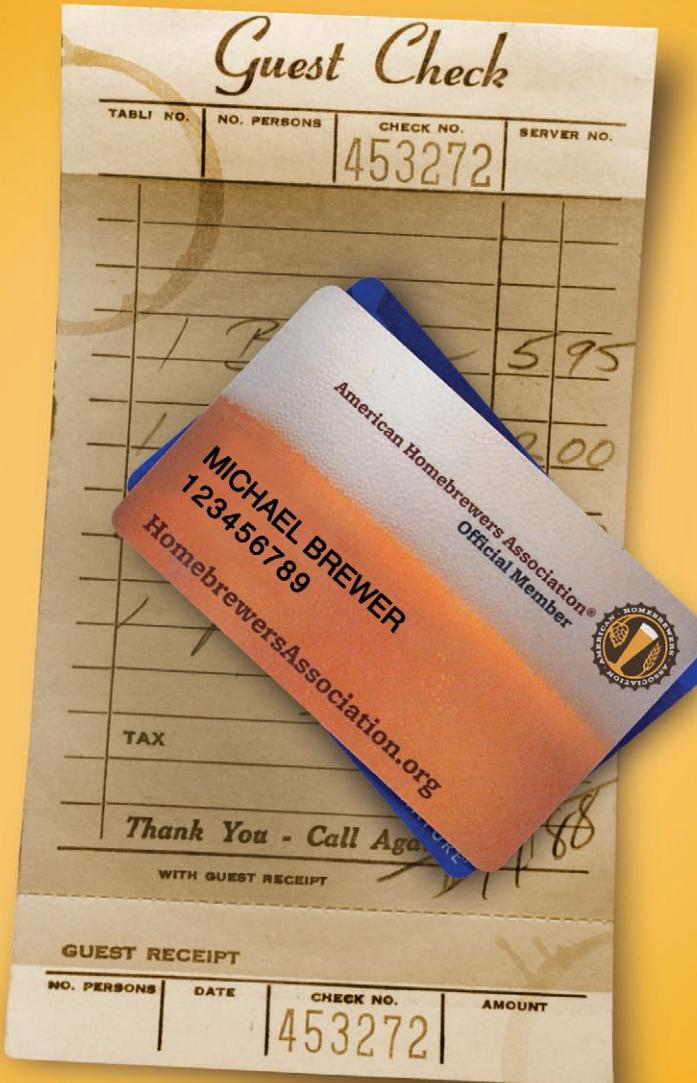
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by Our Readers

Even Higher Brewing

Dear Zymurgy,

I just read your July/August issue regarding Mike Hamill's Everest homebrew. While I applaud Mike's efforts on Everest, it is by no means the first or highest homebrew ever made. I was on two Himalayan expeditions with Aid and Al Burgess, who were referenced in the article for the now infamous Fairview Inn Beer Heist. As it happens, the twins' father in the UK was something of a master homebrewer and with his influence, we produced multiple batches of beer back in the late 80s and early 90s.

In 1989, in Manaslu base camp (about 15,000 feet), we made about 30 gallons of classic British ale using the large plastic chemical drums that are so ubiquitous in Nepal. In Makalu base camp (about

17,500 feet) in 1992 we made both a classic ale and a stout—at least 25 gallons of each. The lower altitudes produced better beer as one might imagine, but the Makalu stout was very drinkable. Our ethic after climbing was that no one could leave base camp for home until all the beer was gone. We were, after all, ecologically minded—although the resulting base camp crawls would have made for a worthy university study on alcohol inebriation at high altitude.

In addition, Aid and Al made beer in Everest basecamp throughout the 80s prior to my climbs with them that began in 1989. So, while Mike's efforts are to be lauded, the true pioneers of Himalayan homebrew were the irrepressible Burgess brothers, who finally found a legal way

to indulge in their passion for fermented starches in the highest places on Earth.

Best regards,

Jim McEachen

Leader, 1992 American Makalu Expedition

Buffalo Wild Wings Ad: Fail

Dear Zymurgy,

I'm concerned about the recent ad ("Home Brew") from Buffalo Wild Wings during football games. Football fans are a huge segment of the TV market, and I think the ads disparage the craft/homebrew segment of their audience.

I don't approve of boycotts, and would not ask for one—consumers can decide for themselves where to spend their money. I actually enjoy BWW (despite the lack of local/craft beer availability in their restaurants). But the recent ad campaign implies that spending the day watching football with a homebrewer is equivalent to being subjected to subpar beverages, if not being poisoned.

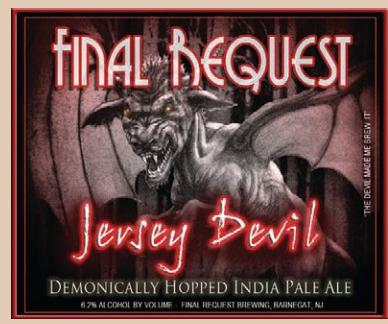


Aid Burgess with a John Bull beer kit at Manaslu base camp in 1989.

Photo courtesy of Jim McEachen

FROM OUR READERS

Homebrew label from Zymurgy reader Mark Lubeski.



If this is the way they wish to portray home/small/craft brewers, that is their choice. But I would like to see some kind of response. Perhaps an article in Zymurgy describing how including local/craft beer can make a restaurant a destination in a tight market (especially in an economy that makes consumers very selective). Or perhaps an online feature that outlines how local brewpubs can give the full fan-based experience (multiple TVs, local college games, and local beer) equal to any franchise while supporting the local economy.

Thanks for improving my beer life,
Jason Holland

Wood's Wild Side

Dear Zymurgy,

I wanted to pass along some comments regarding "Wood's Wild Side" by David Batcheller in the September/October 2012 Zymurgy. Excellent article. I've already contacted the HONEY COMB® people to try to get my hands on that product.

I belong to a homebrew club in Stockton, Calif., and have been aging beer with wood for many years. I can confirm that wood aging covers up some mistakes, such as acetaldehyde. I like to brew big beers and have an imperial Irish red that suffers from acetaldehyde due to the Irish yeast. The wood deals with that problem and adds some dimension and interest.

My experience with chips is that 1 or 2 ounces is adequate in a 5-gallon batch. One ounce is about right; two ounces will produce a very strong wood character, even in a big barleywine. David mentions 3 to 3.5 ounces—wow, that is a lot! Lately I've had the best luck combining one-half ounce of chips and a couple of the golf ball-sized medium toasted French oak balls. The oak balls are nice because they work slowly and can be easily removed if you have overdone it.

If I am oaking a kegged brew, I drop the balls in the keg during kegging time. If bottling, I oak in the carboy. The balls are difficult with the carboy and I am

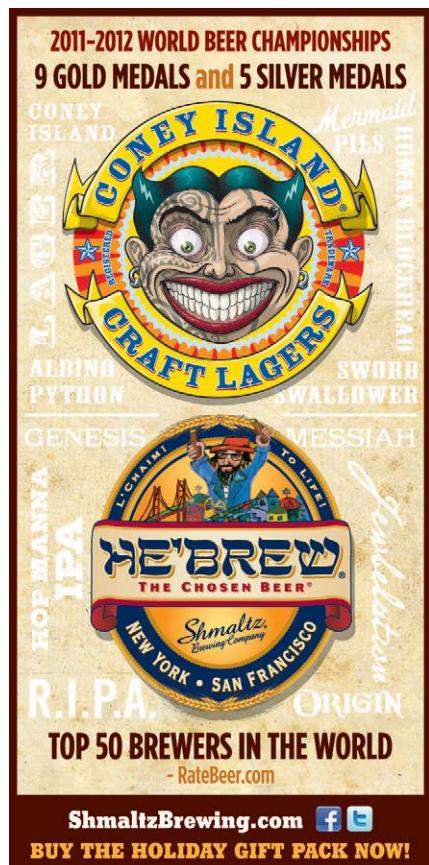
looking forward to the HONEY COMB® product for that.

For sanitation, I soak in a quality whiskey for a day. If I want a whiskey-aged brew, I put the whiskey and oak all in the keg/fermenter. If I just want oak, I consume the whiskey (don't want to be wasteful!) and use the oak balls.

One last thing: the oak does something to the yeast. I don't know what exactly, but you absolutely will have to add yeast (I use a dry lager yeast) along with priming sugar if the beer is to be bottled.

Rick Reineman
Stockton, Calif.

Send your Dear Zymurgy letters to zymurgy@brewersassociation.org. Letters may be edited for length and/or clarity. Hey homebrewers! If you have a homebrew label that you would like to see in our magazine, send it to art director Allison Seymour at allison@brewersassociation.org.



FROM OUR READERS

Zymurgy reader Carlos Musquez shared some of his creative homebrew label designs.



by Professor Surfeit



Worry Worts?

Dear Professor,

This afternoon I checked on a brown ale doing its thing in secondary ferment. I noticed a few (two or three) small white specks sitting on top of the beer. I am worried that it could be mold. I couldn't tell if it was or not because there is lot of condensation on the sides of the carboy and I didn't want to pull the rubber stopper off to look inside. My wife said it looked like just some yeast, but I was thinking it looked too white.

I guess my real question is should I bottle now, or wait? Or should I scrap the beer?

Josh Woeber

Dear Josh,

Don't scrap the beer—yet. I can't really tell for sure what's happening without a house visit, and that seems to be out of the question for now. It could be mold, but that's unlikely

so early in the fermentation. Sometimes Brettanomyces yeast or wild yeast develop white spots and a film on top of the beer, but that takes a month or more to develop—usually. Brett, wild yeast, or mold spots can't really develop during vigorous ferment or the week or two after vigorous ferment. They take time to develop and become colonized on the quiet surface of quiet beer.

In any case, taste the beer. If it tastes good, then bottle it. When carbonated, enjoy. If you begin to detect changes in flavor, carbonation, or aroma that may be threatening to your taste buds or well-being, chill the beer and have a party ASAP.

Might be perfectly great beer, too. I have a hunch that you and those specks are worry worts.

Fingers crossed,
The Professor, Hb.D.



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Brewing Coffee Stout

Dear Professor,

I am making my first beer with coffee. It will be a coffee stout. My friend owns a local coffee shop and sent me some of his roasted beans, liquid espresso, and cold-brewed coffee.

He recommends that I put all three in the secondary fermenter, while the recipe that I am using vaguely states to just "add 3 oz of coffee to the secondary." It doesn't specify to grind the beans completely up, just crack them, or just put them in without doing anything to them. The recipe

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also doesn't state how long to leave the coffee in the secondary.

I wanted to see what you would recommend on 1) how to do the beans (grind up, crack, leave whole), 2) how long to leave the beans in the secondary, and 3) would you or have you ever used the liquid espresso and/or liquid cold brew. If so, how much and how long would you let it sit in the secondary before bottling?

Thanks,
Justin Rice

Dear Justin,
I haven't experimented with coffee brews, but have tasted many excellent and not so excellent coffee beers. Here are some tips that will help achieve maximum clean coffee character.

- Don't boil or heat the coffee.
- Use the cold brewed coffee, liquid espresso, and/or ground beans in the secondary. Taste the liquid espresso and cold brewed coffee to be sure you like the character.
- How much coffee flavor do you want? Anywhere from 3 ounces to 12 ounces

should accomplish the range of intensities of flavor, bitterness, and caffeine zing desired.

- Ask your friend how much coffee one should use to make 5 gallons of light, medium, or strong flavored coffee. Based on his answers, you should expect the same in your 5-gallon brew.
- Go easy on the hops. Coffee is bitter.
- Dry hopping with a favorite hop could be interesting and add some additional character.
- Like sweet flavors in your coffee? Add some specialty dark sugars or molasses.

For more ideas, be sure to check out "Making Great Coffee Beer" in the September/October 2012 issue of Zymurgy.

Thanks for the stimulating topic,
The Professor, Hb.D.



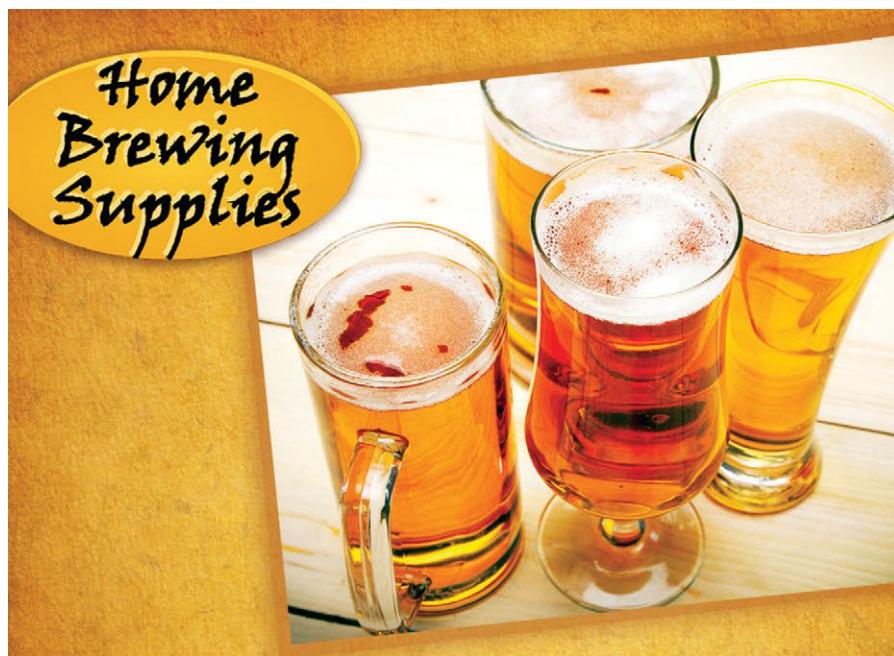
Mead: A Prickly Situation

Dear Professor,
I am planning on making Charlie Papazian's prickly pear mead and was wondering if I needed a wine yeast nutrient. After searching the internet for information on rehydrating wine yeast, it became apparent that I may be over-researching this topic. Some sources suggested that I should add Go-Ferm and Fermaid-K to the wine yeast. Is that necessary, or am I just over-thinking the recipe?

Also, my current plans are to use equal amounts of Lalvin EC 1118 (described as Prise de Mousse) and Red Star (Cote de Blancs) 516. What are your thoughts on these yeast choices?

Dennis Sopcich

Dear Dennis,
I think the best yeast nutrient is simply Go-Ferm. Don't use chemical mixes of nutri-



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ents—they often leave a bad “vitamin” taste in the mead. Go easy with the Go-Ferm. You don’t need much. Follow directions. Fermaid is for stuck ferments, which you should not have and certainly can’t anticipate, so don’t put it in at the start.

I usually combine a champagne-type yeast with another kind of wine yeast. Simply rehydrate the dried yeast in warm (90° F) water in a sterile jar. Stir or swirl. Cover with clean foil. Let sit for 20 minutes, then add to mead.

There you have it: Simple and easy.

Nice meading you,
The Professor, Hb.D.

Tank Temperature Query

Dear Professor,
I haven’t found any conclusive evidence, so I want to know, scientifically, if temperature affects CO₂. My big question is, if I keep my gas on the outside of the fridge at X psi, does this change if the gas is inside the refrigerator set at the same X psi?

I think lower temperatures create higher pressures, but is there any proof of this?

Thanks!
Justin Ramey

Dear Justin,
Does temperature affect CO₂? The answer is: yes it does. Warmer beer releases CO₂ faster, and colder temperature beers absorb CO₂ more easily, but whether warm or cold it equilibrates at the same point in the pressurized container. But all this is a digression and doesn’t answer the pretext of your question.

The answer to your question given the circumstances you are presenting is: it might change in a minuscule way, but any difference would not be significant at all. So there you have it—my simple answer stretched out to two paragraphs.

Tank you,
The Professor, Hb.D.

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By Amahl Turczyn Scheppach



Making Big Brews Like the Pros

This issue's Club Only focuses on non-session beers, which leaves a lot to the imagination; anything over an original specific gravity of 1.040 is fair game. So for this issue, we will focus on brewing big beers. By "big," we're talking anything 1.075 (~8 percent abv) or higher. There's a lot of information on this topic, so we went to a new Louisville, Colo. craft brewery for help, and spoke with Gravity Brewing's John Frazee.

Gravity specializes in big beers, including a double IPA, some big Belgians, and a whopper of a Russian imperial stout. While brewmaster Julius Hummer began his brewing career as a professional, Frazee, like many craft brewers, began as a homebrewer. He pilot-brewed many of

the beers on tap at Gravity in Rubbermaid cooler mash tuns. And mash space was one of the first issues Frazee addressed.

When designing the brewhouse for Gravity, Frazee and Hummer knew they were going to need extra space for their big beers, not just for the oversized mash, but also in the kettle. For long-boil styles like Scotch ales, for instance, you need the capacity to run in extra wort to allow for evaporation losses. High-viscosity wort can also cause higher foam levels during boiling. Similarly, in the mash tun, trying to pack in extra grain without keeping consistent water-to-grain ratios can lead to overly dry mash consistencies, stuck sparges, and lower yields. Maxing out volume capacity on a too-small mash tun

Acceleration Double IPA

JOHN FRAZEE AND JULIUS HUMMER, GRAVITY BREWING

INGREDIENTS

for 5 U.S. gallons (18.93 L)

14.3 lb	(6.49 kg) pale malt
2.0 lb	(0.9 kg) 10° L Munich malt
1.0 lb	(0.45 kg) 15° L caramel malt
2.25 oz	(64 g) Chinook pellets, 11.8% a.a. (60 min)
1.75 oz	(49 g) Simcoe pellets, 12.2% a.a. (15 min)
2.5 oz	(71 g) Crystal pellets, 2.8% a.a. (5 min)
2.5 oz	(71 g) Centennial pellets, 4.2% a.a. (dry, 7 days)

Wyeast 1056 American ale yeast
Forced CO₂ to carbonate (2.5 vol)

Boil Time: 60 min

Original Gravity: 1.087*

Final Gravity: 1.012

ABV: 9.83%

SRM: 8.5

IBU: 97.3

Brewhouse Efficiency: 75%

DIRECTIONS

Mash in at 150° F (66° C) and hold for 60 minutes. No mash-out. After primary fermentation is complete, rack onto dry hops and crash to 50° F (10° C). Age for 7 days, package, and serve.

Mini-Mash Version: Mash Munich and caramel malts for 45 minutes at 155° F (68° C). Substitute 10.35 lb (4.7 kg) pale malt extract syrup for pale malt. Drain and rinse grains, add extract, and dissolve completely. Proceed with boil.

*If original gravity is lower than expected toward the end of the boil, corn sugar (in this case, 8 oz or 227 g) may be added to bring gravity up to anticipated 1.092. As long as pitching rate and yeast health are sufficient, the result should be a slightly lower finishing gravity, which is fine. Gravity went from an anticipated finishing gravity of 1.022 to 1.012 with the 3.8-percent dextrose addition.

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can lead to uneven mixing, dry spots, and other headaches. Gravity took all this into consideration by installing a 14-barrel (16.42 hl) system for brewing 10-barrel (11.73 hl) batches; if they need to go big, they have plenty of room to spare. On a homebrew scale, Frazee suggests using two mash tuns for one kettle, effectively doubling mash space. Even if you aren't brewing a 1.100 O.G. colossus, this approach makes a lot of sense for styles prone to stuck mashes, like wheat, rye, and oat beers. The less compaction in the mash tun, the faster your wort will flow. A little extra cleaning is much better than a four-hour sparge!

Of course, there are alternatives to large-scale mashing. "Don't be afraid to use sugars," Frazee advises, and admits that many small craft breweries dose the kettle with sucrose, glucose, or dextrose if an initial gravity comes out lower than expected. Table and corn sugars boost alcohol and lighten body, and provide the signature strength and dryness of many Belgian style pale beers without adding much flavor. Gravity recommends turbinado and brown sugars over ordinary table sugar, however.

Dryness and strength are also very compatible with double IPAs, and can bring out hop bitterness that might otherwise be masked by residual malt sweetness. For beers above 1.060 (before the sugar addition), 15 percent or less is a good rule of thumb for most styles. Beyond that, off flavors and harshness can be problematic. Shoot for a late to very late kettle dosage to avoid caramelization if you are looking to brew a light-colored beer. Brown sugar and molasses do contribute strong flavors, especially molasses, but can be appropriate for darker strong beers.

Another critical technique for bigger beers is keeping mash temperatures low. Gravity Brewing tries to hit 150° F (66° C) for its main saccharification temp, and will sometimes aim closer to 149° F (65° C) for the really big beers. High wort fermentability can save a 1.100 beer from being unpleasantly thick and sticky. Beers this big really resist hop utilization, so alcohol dryness from maltose as well as sugar dosages can help bring the beer into balance. At these gravities, having enough body in the beer is much less of a concern, especially if there are crystal or caramel malts in the grain bill.

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That brings us to the single-cell critters that will be producing all that lovely alcohol: yeast. The strain is important; many yeast strains will simply not tolerate high alcohol levels, or tend to quit after only 70 percent attenuation. Frazee has had great results from that old standby 1056 American ale/Chico ale yeast, which can ferment cleanly and quickly up to 11 percent ABV and beyond, and will easily hit 80 percent attenuation with proper care. Other great strains for high-gravity brewing include the Belgian Abbey, Golden and Trappist strains, and many brewers swear by Wyeast's 1272 American Ale II strain, which can reportedly hit 18 percent ABV under the right conditions, though it's only rated by Wyeast at 10 percent. A few other Super High Gravity yeasts are available, but they can be finicky, and careful yeast management with them is required, not simply recommended; and even if you do everything right, trying to achieve that elusive 25 percent ABV Holy Grail beer may still result in a thick, malty, and expensive mess. But some have done it.

California Common

EXTRACT RECIPE

INGREDIENTS

for 5.25 U.S. gallons (19.9 L) with a 3.5 gallon (13.2 L) boil

2 cans	(6.6 lb or 3 kg) Coopers Light Malt Extract
1.0 lb	(0.45 kg) Crystal Malt, 40° L
0.50 lb	(0.23 kg) Victory Malt, 25° L
0.5 oz	(14 g) Northern Brewer pellet hops, 9.0% a.a. (60 min) (16 IBU)
1.25 oz	(35 g) Northern Brewer pellet hops, 9.0% a.a. (15 min) (20 IBU)
1.0 oz	(28 g) Northern Brewer pellet hops, 9.0% a.a. (1 min) (7 IBU)
0.75 tsp	(3 g) Irish moss (15 min)
2 packages	Wyeast 2112 California Lager yeast, or 2 vials White Labs WLP810 San Francisco Lager yeast, or an appropriate size yeast starter

Use 2.5 to 3.0 volumes of CO₂ when kegging; or use Coopers Brewery Carbonation Drops, or 4.0 oz to 5.2 oz (113 g to 147 g) corn sugar when bottling.

Original Gravity: 1.051

Final Gravity: 1.013 to 1.017

IBU: 42

ABV: 4.5-4.8%

Here are some tips cobbled together from various professional and amateur brewers, along with White Labs' data sheet on their WLP099 Super High Gravity strain:

1. Obviously, pitch a lot. For a 10-barrel batch, Gravity typically uses 6 to 8 liters of fresh, active slurry, but for homebrewers, Frazee recommends the old trick of brewing a moderate strength beer of 1.050 or so and using the entire yeast cake for your bruiser. If the yeast is powdery or still in solution, try crashing the beer to near freezing temps to get it settled prior to racking; this will maximize your cell count. Use fresh yeast from a recently finished fermentation, and use your nose—it should smell sweet and bready.

2. Use a yeast nutrient in the kettle. The bigger the beer, the more you should use. For the “super” beers of 1.100 and over, plan on adding twice the recommended amount. At Gravity Brewing, they use Yeastex and add it with their coagulant and last hop addition five minutes before the end of the boil.

DIRECTIONS

Heat 2.8 gallons (10.6 L) of water until it is almost boiling. Place the 1.5 lb (0.68 kg) of grains in a grain bag and steep the grains at 158° F (70°C) for 30 minutes. Remove the grains and strain the liquid from them. You can rinse the grains with hot water and bring the volume to 2.6 gallons (9.8 L). Remove from heat before thoroughly stirring in the liquid extract. Top up with water to 3.5 gallons (13.2 L). Bring to a boil and add the bittering hops. Boil for 45 minutes and add the flavor hop addition and the rehydrated Irish moss. Continue boiling for 14 minutes, then add the one-minute hop addition. Boil one minute before turning off the heat. Cool the wort to ~65-70° F (18-21° C) then pour into fermenter with enough pre-boiled cool water to make 5.25 gallons (19.9 L). Aerate and pitch yeast when the temperature drops to 63-67° F (17-19° C). Ferment at 65° F (18° C) for approximately two weeks. Prime with Coopers Brewery carbonation drops or bottling sugar at bottling for a carbonation of approximately 2.5-3.0 volumes of CO₂. Allow one to two weeks to achieve carbonation.

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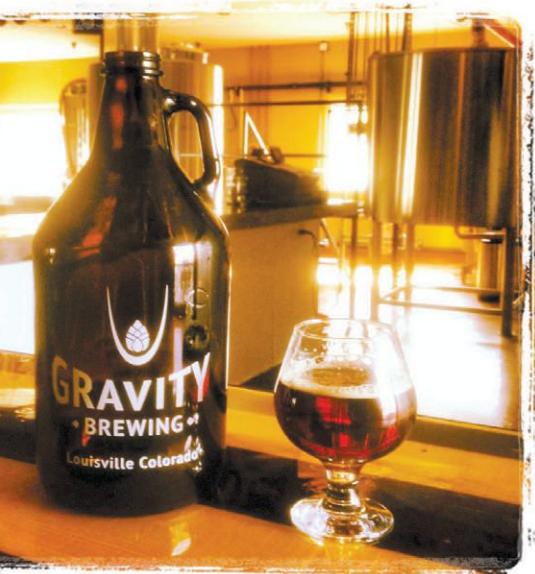
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3. Aerate early, heavily, and often. Gravity Brewing uses an in-line oxygen stone post-heat exchanger. While there is a theoretical upper limit to the amount of oxygen one can inject into beer wort, for beers over 1.060 and especially beyond the 1.100 mark, homebrewers are going to be hard pressed to reach it. If you have an oxygen stone, get it sanitized and for best results (and to avoid hot-side aeration) inject at pitching temperatures, or at

least below 80° F (27° C). The old cap-it-and-shake-it aeration methods are actually quite effective too, but prepare for a workout: “super” beers should have four times as much oxygen or air than 1.060 beers; 1.080 beers should get twice as much. (These are obviously approximations, so take them with a pinch of brewing salts.) Oxygen dissolves more readily in lower-gravity worts, but high-gravity worts need much more. You can really help your “super” beers by repeating aeration or oxygenation during the lag phase and on into actual fermentation. This isn’t something that the pros generally do, but theoretically intermittent aeration can be done as late as five days into fermentation. How intermittent? As often as every four to six hours, if you can manage it.

4. Keep it cool. Why? With beers this large, it’s very easy for the yeast to produce fusel alcohols and crazy levels of esters, acetone, and other headache-inducing nasties. Yes, a healthy batch of yeast will clean most of this up in the latter stages of fermentation, but we are trying to make things easy on them, so slow them down at first, and let them come up to speed

slowly. For big barleywines and imperial pales, you might consider keeping initial temperatures around 50° F (10° C) for the first 24 hours or so, then taking it up to 65° F (18° C) or wherever your recommended fermentation temperature should be. This will also help you keep a lid on fermenter blow-outs, at least initially—remember that big beers can foam a lot at high krausen, and you don’t want all your precious malt gushing out the blowout tube. It will also keep your ales clean and smooth. For big Belgians, where ester and phenolic production are a more welcome aspect of the style, you might want to pitch, cool to 50° F (10° C), and then let the temperature rise naturally, but slowly, to your desired fermentation temperature.

5. Rouse the yeast after a week in the fermenter. Again, this isn’t something the big boys do, but gently rolling a 6.5-gallon carboy around the floor to get settled yeast into suspension and back to work every few days can help attenuation along nicely. The Scots did it. The English did it. So can you.

6. If possible, stagger the wort additions. This is optional, and it can be tough for all-grain brewers, but it can be done. You have to “can” a portion—say one to two gallons for a 5-gallon batch—of the hot wort after knockout. Growlers or Mason-type jars are great for this. Temper the glass, can it hot, let it cool, and add it to the fermenting main batch after the first day in the fermenter, once a day for five days. Ideally, you’ll want to start off with a lower-gravity wort, say 1.070 to 1.080, and add 1.100 or higher concentrated canned wort for your staggered additions, but this methodology obviously complicates the all-grain fanatic’s brew day. The “weaker” wort will need to come out of the kettle first, get chilled, undergo aeration, get pitched, etc., while the concentrated wort is boiled down and canned when it reaches the right gravity. And remember that your canned concentrate is devoid of oxygen, so you should re-oxygenate after each canned addition. It’s a lot to remember, and you are best coming up with a calendar schedule for each stage, but if you really want to approach 25 percent ABV in a naturally fermented beverage, you’ll need to do some serious

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hand-holding for your yeast. Another beverage that can approach this strength level is sake, and sake brewers might find this complicated staggered addition regimen oddly familiar. But I digress.

So once you've nursed your yeast to complete fermentation and a blissfully alcoholic coma at the bottom of your primary, it's time to condition the beer. Don't be too hasty to rack to secondary—these extra-strong beers can easily take four weeks or longer to reach terminal gravity, and may lose a few more points over the ensuing months. Conditioning time after that is a matter of preference, and of style. If you've spent a fortune on hops for a DIPA, you might want to age it only a month or two to allow those fresh, volatile late and dry hop oils to shine through. For English old ales, Russian imperial stouts, or Zurich-style super lagers, a year or more might be preferable.

While the above methods are all tried and true ways of achieving that super-strength beer you've always wanted to make, they may not all be necessary for beers in the 10-13 percent range. A healthy pitching rate and good aeration should be all it takes. Going back to our pros at Gravity Brewing, they brewed up an 11 percent ABV Russian imperial with a gravity of 1.102 using Wyeast 1056 and their usual brewing methods, and had it on tap within a month. Their "normal" fermentation methods include a cool fermentation and cold conditioning, and they have the luxury of using a plate and frame filter for polishing beers for a relatively quick turnaround.

"We typically ferment for a week at 68° F (20° C) or so," Frazee said. "We reach within a point or two of our final gravity usually in five to seven days. Then we crash cool to as low as we can (35-45° F or 2-7° C) for another week. Next, we harvest yeast, filter, and transfer to brite tanks after the second week." Not all styles get filtered, though. "We just released a dry hopped IPA that we did not filter. We also don't filter the Belgian wit or the imperial stout. Filtering is great for beer color/clarity, but not so good for hop aroma and flavor. We added a vegan fining agent called Biofine

to the brite tank of the IPA to help coagulation, etc."

Frazee admitted that one-week conditioning times on his bigger beers are perhaps doing them an injustice, but for now, since they are a relatively new brewery, they need to turn over their product quickly. "When we have the time and fermenter space to age/condition our beers longer, we would likely harvest the yeast after two weeks." Ultimately he would love to age the bigger brews in oak barrels for vertical sampling and comparison as the brewery gets settled in and can keep up

comfortably with demand. But for now, I can vouch for the fact that their current lineup of heavy ales is just fine as-is.

The Gravity brewers also graciously shared a scaled-down recipe for their excellent Acceleration Double IPA. They are currently tinkering with a 10-gallon pilot batch for a 13-15 percent ABV barleywine.

Amahl Turczyn Scheppach is the associate editor for Zymurgy. He is a former professional brewer who now brews at home in Lafayette, Colo.

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10 HOMEBREW

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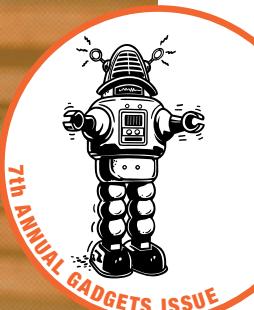
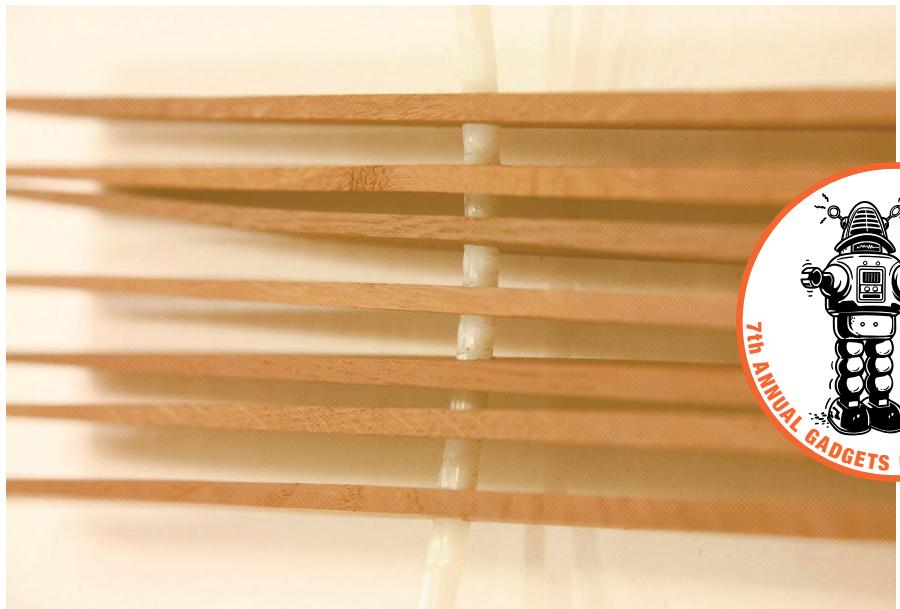
The *Zymurgy* Gadgets issue is an annual celebration of the innovativeness and creativity of homebrewers. If a piece of equipment isn't working for them, they'll often tweak it, build something on their own from scratch, or find an innovative homebrewing-related use for common kitchen (or other) appliances or parts. As we do each year, we asked *Zymurgy* readers to submit their homemade homebrewing contraptions or solutions for the 7th annual Gadgets issue, and here's what they've been working on.

1. *CUSTOM OAK INSERTS*

I have toured various breweries in Delaware and Northern California known for using wood in the brewing process. The beers fermented and aged in wood barrels have a unique flavor and feel. I wanted to incorporate a variation of those qualities in the beer I was brewing.

I was seeking two specific flavor profiles that French oak could provide for two of my recipes, an oatmeal stout and a Belgian dubbel. In addition to the oak flavor, I wanted a hint of whiskey in the oatmeal stout to complement the creamy texture and coffee flavors in the beer. For my Belgian dubbel, I wanted the oak flavor to enhance the fruit and raisin flavors of the beer, in addition to a hint of chardonnay to complement the dry nature of a Belgian dubbel.

The obvious solution for achieving the flavors was to age my beer in used wine and



whiskey barrels. However, I did not have ready access to used barrels, and I was not brewing in quantities large enough to fill the barrels. I searched for an alternative and remembered a presentation I had attended by the owner of a local winery. He described a process used in the wine industry as a cost-saving measure wherein wine is fermented in stainless steel vessels lined with oak, thus avoiding the costly use of barrels.

Cork Supply USA operates a cooperage in Benicia, Calif., and has a division called Creative Oak that sells alternative oak products. The company makes beautiful, quality crafted French oak barrels that supply much of the wine industry in California and beyond. Jason, the master cooper, custom built an oak insert for my 10-gallon stainless steel fermenter. The insert is made of oak imported from France used by the company to manufacture wine barrels. This wood has been air dried in its natural element in France for over two years prior to being shipped to the cooperage.

The insert is composed of 1 3/4" X 4" slats of oak, mounted on a large food grade plastic zip tie. I toasted the slats on the liner with a torch, as the oak barrels crafted at the cooperage are toasted prior to shipping to the wineries. The toasting process brings out the full complexity, flavor, and oak notes of the wood.

Developing a process for sanitizing the liner was crucial since it has plenty of nooks and crannies for bacteria to grow. I did not want to use chemicals as that would compromise the flavor I was seeking. Instead, I decided to follow a process that uses pressurized steam to ensure the liner is free of bacteria prior to placing it in the fermenter. The process involves placing the insert into my pressure cooker and pressurizing the cooker to 15 pounds for 20 minutes. While the liner is still in the cooker and after it has cooled, I pour about a half-cup of Tennessee whiskey for the stout recipe, or half-cup of chardonnay wine for the Belgian double, over the slats and let it absorb into the oak for several days. I have a separate liner for whiskey and one for wine, and do not mix the two. I then re-pressure the cooker

after it has absorbed the wine or whiskey and place the insert into the fermenter.

The liner is used after the active primary fermentation has occurred, normally after a week or so. The liner remains in the fermenter for a couple of weeks depending on the desired taste profile. Taking samples every few days allows me to

monitor the development of the taste and prevent the oak flavor from becoming too strong. This process has produced some unbelievable flavor profiles and complexities in my homebrewed beers.

Chuck Lomeli
CAPTAIN'S QUARTERS BREWING COMPANY
DIXON, CALIF.

2. ***DISCONNECT MARKINGS***

If you use ball-lock style kegs, you have probably experienced putting a disconnect on the wrong type of post and then struggling to get it off. I've tried the colored o-ring technique, which helps, but not everyone pays attention to the color of that little o-ring. I've resorted to a much more visible marking. I use an enamel pen, sort of like a felt-tipped marker, except it dispenses real enamel paint.

You can find them in craft stores and some office supply stores in various colors. An alternative would be using artist's enamel and a small artist's brush. I vividly mark the outside of my kegs. The enamel works on both rubber and metal tops.

Steve Piatz EAGAN, MINN



3. ICE CREAM FREEZER KEGERATOR

I am fortunate enough to have been given an ice cream freezer by a business owner who had no further use for it. What homebrewer wouldn't immediately think "free kegerator!"

The only change I had to make was to add an external temperature controller, which you can see hanging on the wall. There's plenty of room for one or two kegs and a CO₂ tank. As the photo of the interior shows, it can do double duty as not only a server of beer, but a place for a carboy fermenter for lagering. I use DampRid to hold down the moisture.

Ken Middleton JENSEN BEACH, FLA.



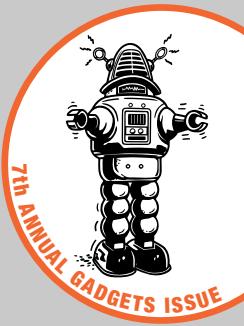
4. eRIMS ADD-ON

I've wanted to have more active control of mash temperatures for a while now. I have a cooler mash tun setup, so step mashes or any sort of adjustment can be a bit of a challenge. Add to that the fact that I live in Chicago and the wildly varying outside temperatures (-15 to 95° F) mean that knowing just the right thermal coefficient of my mash tun to hit my strike temperature is a bit of a pain. I'm an engineer, so building things with my hands is excuse enough anyways. Thus, the e-RIMS add-on to my PID-control toolbox was born.

For about \$65 in parts from my local hardware store, I mounted a 110V hot water heater element inside 1" diameter copper tubing, added some quick disconnects and a thermowell, and I was done. A PVC endcap and rubber pipe insulation covers the electrics and insulates the tube.

Evan Van Dyke ROLLING MEADOWS, ILL.





5. **GRAIN CRUSHER**



This is a grain crusher built from scrap mostly; total cost about \$30. The thing that makes this work is that everything is put together with wing nuts. The key is that you can get to any section by undoing two wing nuts.

The first part is the rollers. These are 2" pipes fitted with skateboard wheels and bearings. The gap setting is adjusted with tape around the pipe ends, and one roller turns the other based on friction. It works great; however, because of the diameter of the pipes, it is a course grind and therefore requires two passes. I crush as I measure out, as each malt used is a little different.



The hopper just sits on top. A tiny grain feed block is under the hopper. A minimum, low-end drill is sufficient. I mill 3 pounds at a time, checking the crush as I go, typically the night before I brew. Works great; no issues. A larger hopper could be added if needed, as well as a harness for the drill.

Mike Gleeson
MONTARA, CALIF.

6. **DRIP BUCKET**

I have a very simple and cheap gadget that made my brew days better. I have a brewery in my basement and when brewing indoors, it is nice to have clean floors. I have two floor drains in my brewery but it keeps the rest of the basement cleaner if I am not tracking wort onto the carpet during a brew session. I hang a small bucket (purchased for less than a dollar at Target during the winter holidays) from my spigots to catch the drips that usually fall to the floor whenever you change hoses during a brew session. A small investment in time and money for a big improvement.

Matt Franklin CEDAR RAPIDS, IOWA



7. **FREEZER SKIN**

Want to convert a freezer into a kegerator, but don't want your pride and joy to look like the discarded appliance that it really is? Build a wooden cover for the door to match your decor. In this instance (photo below), I used white beadboard to match the cabinet doors.

Want to put your new stainless fermenter in a freezer for temperature control, but don't want a white elephant in the room? I decided to go steam punk on this one (photo on right). I also built wooden frames for the sides and top and covered them in black nylon screening to continue the steam punk box look, while allowing the freezer to properly dissipate heat and stay compliant with installation instructions.

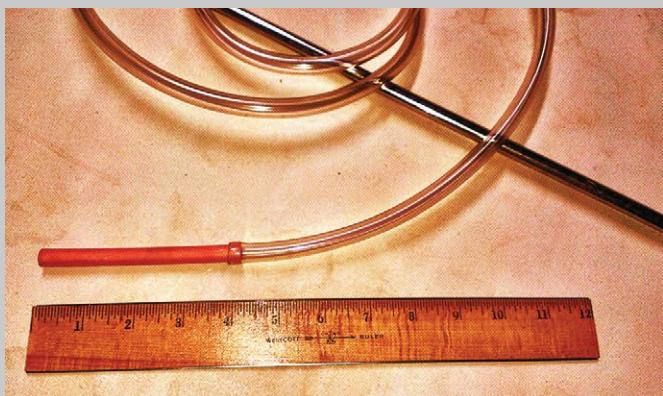
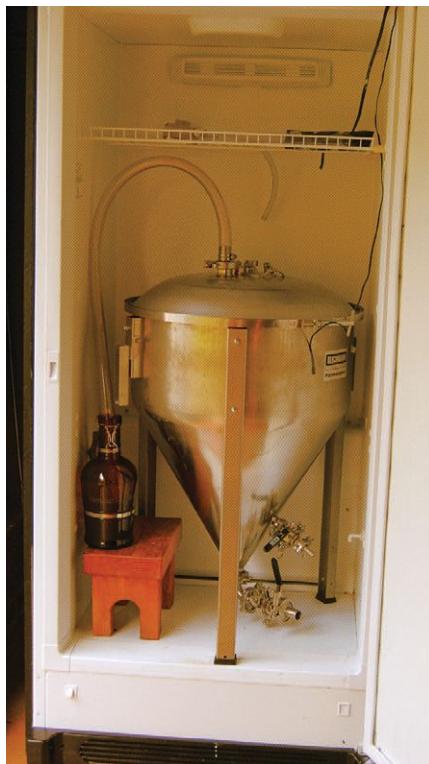
Phil Moore COLUMBIA, S.C.



8. **SIPHON STARTER**

I've seen people use all kinds of devices to start a siphon. Mine is nearly indestructible, cheap, and easy to make. It is just a short piece of ¼-inch soft copper tubing. I place it in sanitizer along with the racking cane and the siphon hose. Once the hose and racking cane are assembled, I insert the copper tube into the other end of the hose. I can then place the end of the copper tube in my mouth and suck. I remove the tube from the hose before the beer reaches the tube. Your local hardware store will typically sell copper tubing by the foot.

Steve Piatz EAGAN, MINN.



9. BRAUEN-HAUS WORT CHILLER

Fundamentally, this wort chiller works like the regular coiled counterflow chiller most of us know in homebrewing, with the advantage of being sanitary by design. The pipes where wort flows through are short, straight, and easily accessible by removing the wort return hoses. This allows you to use a pipe brush to physically remove deposits/films that may otherwise accumulate over time. Another advantage of having accessible wort pipes is that they allow you to inspect your cleaning and sanitation. After all, if you cannot inspect the pipes, how can you tell if they are really clean? For storage, the wort return hoses are left open to completely drain the wort chiller, which prevents bacterial growth and corrosion.

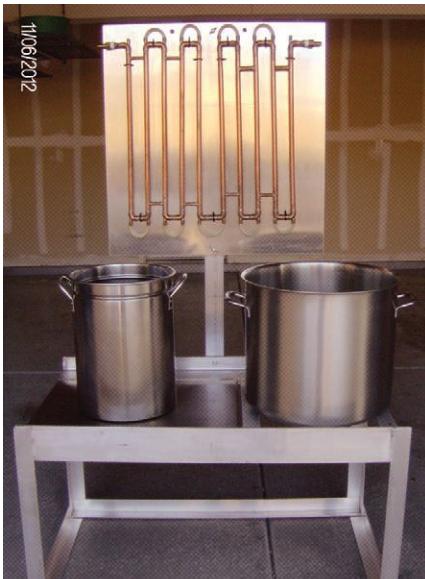
Cooling performance is achieved by the copper construction, feeding the liquids in counterflow fashion, and the use of static mixers inside of the wort pipes. The function of static mixers is to promote turbulent flow in the wort stream. The more turbulent the flow, the more heat transfer is achieved. Performance with this unit has been measured as high as 93 percent effective. Cooling performance for any chiller as effectiveness (E) is calculated by:

$$E = (\text{Temp Hot Wort} - \text{Temperature Chilled Wort}) / (\text{Temp Hot Wort} - \text{Temp Cold Water})$$

Example: $E = (212^\circ\text{F} - 68^\circ\text{F}) / (212^\circ\text{F} - 58^\circ\text{F}) = (144^\circ\text{F} / 154^\circ\text{F}) = 0.935$

The effectiveness is always a number from 0 to 1, and it varies in response to flow rates and temperatures of hot/cold liquids. The closer to 1, the better the performance.

Walter Diaz TUCSON, ARIZ.



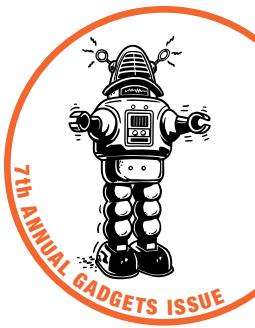
CONSTRUCTION MATERIALS

- 21 feet $\frac{1}{2}$ " copper pipe
- 20 feet $\frac{1}{4}$ " copper pipe
- Small copper coupons (16 gauge 3" x 3")
- 18 copper elbows $\frac{1}{2}$ "
- 5 feet of $\frac{1}{4}$ " food grade plastic hose
- Small propane torch, flux, lead free solder

INSTRUCTIONS

1. Drill on the center of the elbows for installation of inside $\frac{1}{4}$ " copper tubes. Cut $\frac{1}{4}$ " pipes (wort pipes) in desired length (2-3 feet recommended for cleaning and portability). Cut $\frac{1}{2}$ " pipes (where cooling water flows through) 2 inches shorter than wort pipes so that return hoses can be attached to the end of the wort pipes.
2. Assemble $\frac{1}{2}$ " piping with elbows in desired shape. Flat shape is recommended so that the unit can be hung on a wall to optimize space.
3. Insert $\frac{1}{4}$ " pipe through elbows.
4. Solder all joints using propane torch, flux, and solder cable.
5. Cut metal strips $\frac{1}{4}$ " x 3" and twist in opposite directions from each end. These are placed inside of the wort pipes.
6. Cut the return hoses to connect wort pipes.





10. **PORTABLE TRASHCANERATOR**

I took a Brutus trashcan, attached a CO₂ tank holder to the back, and wrapped the can in insulation. I then attached a stainless steel table top and attached a three-tap tower to the table top. A vinyl banner with my faux brewery logo finishes out the Trashcanerator. Just add three corny kegs or one 15.5-gallon Sankey keg, a little ice, and a party breaks out every time.

Phil Moore COLUMBIA, S.C.



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CONSTRUCTING A KEEZER

BY SCOTT POINTON



2

KEEZER

(definition) – *a chest freezer that has been modified with a temperature control unit to become a chest refrigerator, for the sole purpose of serving kegged beer. Often has a wooden collar inserted between the body and the lid of the freezer, thus creating an easy spot to drill holes through without fear of damaging the cooling coils in the wall of the freezer.*

I've been brewing beer for just over four years now. When I began brewing, those with more experience told me that bottling beer was the worst, most tedious part of the hobby. I was told that someday, if I stuck with it, I would want to keg my beer.

It only took me a couple of years to heed that advice, as my more sessionable beers now go into kegs. My first kegging setup was a 5-pound CO₂ tank, dual gauge regulator, two Cornelius kegs, an inexpensive non-digital Johnson temperature controller, and a chest freezer that was barely big enough to hold what I just listed.

Not long after I got it set up, my homebrewer stepson was about to move to Florida to attend graduate school, and by



1

default abandoned a large chest freezer he had acquired for next to nothing on Craigslist. I jumped at the chance to "adopt" his freezer (1) and make it my own new keezer. (2)

This unit served me well until recently, when it mysteriously lost the ability to hold a temperature below 60 degrees. Not good, even for my traditional English ales.

I have no doubt that the problem was some sort of freon/tubing issue, as around



3

the same time the freezer lost its cooling abilities, a large frosty ice buildup (3) appeared on the inside rear wall of the unit. This led me to pursue my long-held desire to purchase a brand new freezer and construct a premium keezer.

LINING THINGS UP

I was lucky enough to have my need for a new freezer coincide with an appliance sale at my local Home Depot. I ended up with a Maytag 14.8 cubic foot unit (4) that just barely fit into the space I had. This freezer is just slightly larger than the old one on the outside, but internally there is a lot more space, as the compressor “hump” in this unit is smaller and tucked into one corner. (5)



4

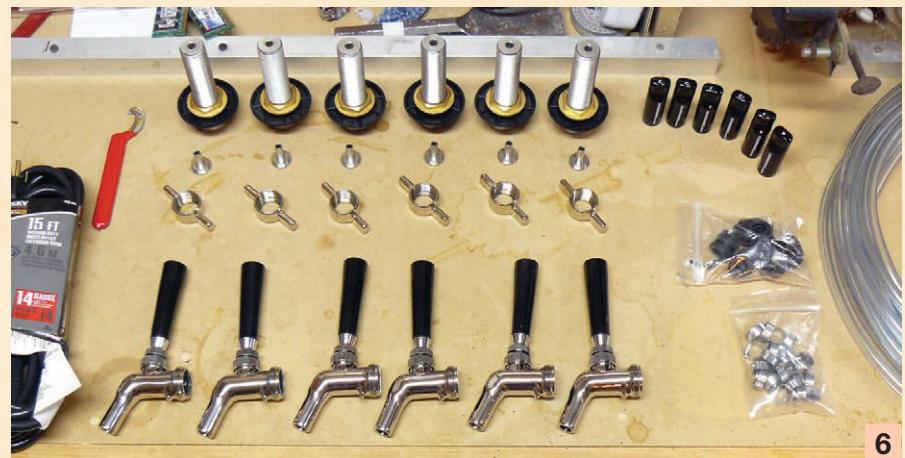


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With the freezer purchased, I began researching online regarding the construction of a keezer. One helpful resource was a video called “How to Build a Keezer” on the Northern Brewer website. Once I had a handle on the design I wanted to execute, I shopped around for the best deal on the parts needed.

Here is a list of the parts (6) I purchased from Kegworks:

- 6 Perlick #525SS stainless steel faucets
- 6 black beer tap faucet handles
- 6 stainless steel shanks 1334CS - 4"



6

with beer shank lock nuts

- 6 stainless steel tail pieces 3/16"
- 6 rubber washers to go between tail pieces and wing nuts
- 6 stainless steel wing nuts for draft beer lines
- 12 Oetiker clamps for 3/16" beer line
- 40 feet of 3/16" beer line
- 6 draft beer faucet caps
- 1 faucet wrench

CONSTRUCTING THE COLLAR

I decided to build the collar of the keezer with 2x4 construction lumber. I did have a significant advantage, as I have a complete woodworking shop in my garage (building furniture is my other hobby/mental illness). By jointing and planing the surface of these boards to be perfectly square and flat (7), I ended up with something that looks a lot better than raw 2x4s. If I didn't have these tools at hand, I likely would have built the collar out of the best 2x4 lumber I could find and then wrapped that with 1x6 pre-planed, high grade poplar (if I was to paint it) or oak (if I wanted to stain it). Both of those options are available at any home center, but be prepared to pay for the convenience of boards that are already planed smooth!



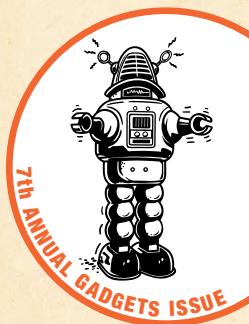
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I started with three 8-foot boards, but because I had chosen well at the home center, I was able to get the four lengths I needed from just two of the 2x4's.



8

After preparing the boards, I carefully measured each dimension of the top of the freezer unit and cut the boards to the proper final length. I then sanded all surfaces of the boards with a random orbit sander, starting with 120 grit sandpaper and then progressing to 180 grit. This step can be done by hand with some sandpaper and a sanding block if you choose. By the time I was done with it, this formerly ratty construction lumber was converted into decent-looking furniture wood. (8)



Tools I used for wood prep:

- Radial arm saw
- Table saw
- Jointer
- Planer
- Power sander

Next it was time to paint the boards. I chose a high quality, glossy black spray paint. By applying many thin coats and being extra careful, I did not end up with any drips, sags, or runs (9). This was a step that took some time, but it was worth it to get a good-looking finish. With a wood like soft pine, each additional coat of paint applied evens out the sheen and the "grainy" look. Lightly sanding with very fine sandpaper between coats of paint also helps to build a beautiful finish.



9

When the paint had dried on the boards, it was time to drill the holes for the beer shanks in the front-facing board (10). I carefully laid out the spacing for these with a high quality combination square and a sharp pencil. I drilled the holes 4 inches on center from each other to make the taps feel less crowded together. I chose to use a Forstner bit to drill my holes (11). These bits leave a very clean edge as compared to a standard spade bit. After measuring the shanks, I went with a 7/8" bit even though this meant the shanks would be a very snug fit.

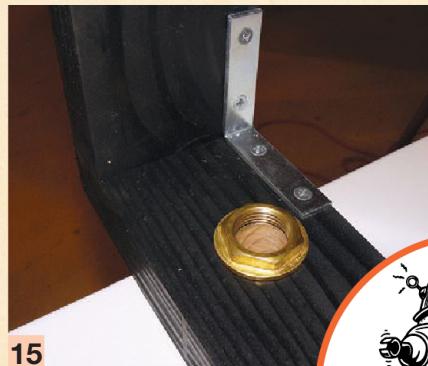
The next step was to move inside to the basement where the final assembly of the keezer would take place. I laid the boards out on the lid of the freezer to double

check that everything was cut properly, (12) then carefully applied clamps to draw all of the joints tightly together. I took my time with this, fussing and tapping the joints until I had them flush and perfect. Then I drilled two counter-sunk pilot holes in each corner joint (13). This allowed me to drive the screws home without fear of cracking or splitting the wood.

I used square drive stainless steel screws for these corner connections (14). After driving all eight screws, the collar frame was now able to be lifted and moved around, but it was still not very rigid. To remedy this, I decided to install a 90-degree angle bracket in each corner (15). To insure that each corner was square (perfectly 90 degrees) before



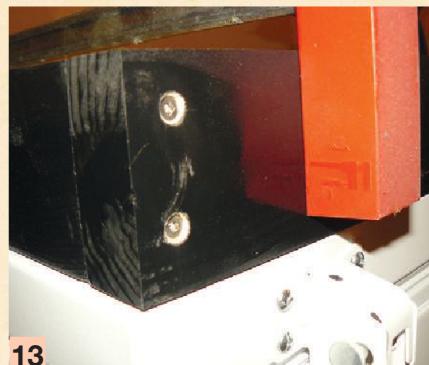
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10



13



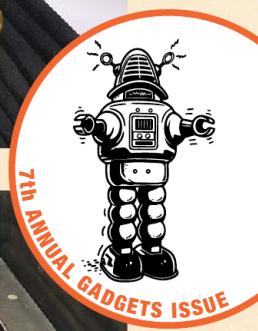
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11



14



attaching the angle brackets, I clamped an aluminum square into the corner with some strong spring clamps and then installed the angle brackets (16). When this was done, I used an old woodworking trick to insure it was all square. The trick is to keep tweaking it until the each of the two diagonal corner-to-corner measurements are the same as each other.

Then I headed back to the garage for some touchup painting. While this coat of paint dried overnight, I got busy taking the lid off the new freezer (17), being extra careful not to brain myself with the powerful hinges as they were released from the unit. Seriously, be careful with this part!

Once the paint was fully dry, I brought the collar back to the basement to do a test fit. At this point, depending on the manufacturer's recommendations of your glue, you can lightly scuff up the surface you will be adhering the collar to. I was using a very powerful construction adhesive (18) and didn't think it necessary.

To attach the collar, I laid down two $\frac{1}{4}$ " thick beads of the adhesive all the way around the upper edge of the freezer where the collar would sit. Working quickly, I was able to get the adhesive applied in just



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a couple minutes. I only had to use one tube of the adhesive, but I had a spare on hand just in case it was needed.

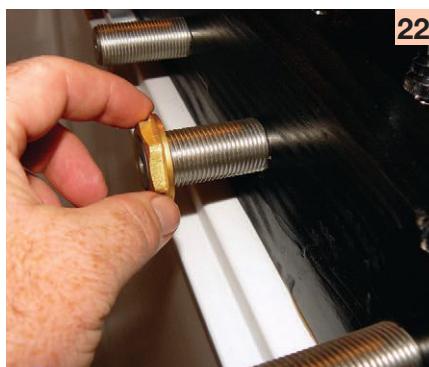
While the adhesive was still wet, I quickly seated the new collar into the glue and then placed the freezer lid back into place, making sure that it was properly aligned and that the hinges could indeed fold down without issue on the back side. I then placed various heavy objects on the lid to add weight and help the adhesive lock everything together (19). This is a good idea, but remember not to overdo it—if you put so much weight on it that it squeezes out all the glue, you are in trouble!



Don't forget to clean up the visible glue with a damp paper towel before it dries. One final piece of advice at this stage is to reattach the hinges to the freezer body (20) while the glue is still wet. If their reattachment necessitates a slight shifting of the collar, this will still be possible. I was able to attach the lower part of the hinge to the freezer body using the screws that came out of the hinge originally. The upper part of the hinge was easy to attach to the wood collar with short wood screws and washers. With this all secure, I let the construction adhesive cure for about 30 hours.

ASSEMBLING THE BEER DISTRIBUTION SYSTEM

Next it was time to start assembling all of that fancy beer hardware. I chose to attach the faucets to the beer shanks first and then fit the shanks through the holes I drilled in the collar (21). From the inside



of the freezer, I then attached the beer shank nut (22) and used a crescent wrench (23) to tighten everything up. Once the shanks were firmly connected to the collar on the inside, I tightened up the faucets using a faucet wrench (24) on the outside, making sure each faucet was straight. The next thing to tackle was the liquid lines. In my old keezer, I used picnic taps to dispense the beer. I found that the five-foot length of the picnic tap hoses did not provide enough resistance to restrain the beer from foaming, so this time I used 3/8" i.d. tubing, cut to six-foot lengths.

After soaking the end of the hoses in hot water for a couple minutes, assembling the hardware was a breeze (25). I made sure not to push the hose too far onto the



25



fitting, as I didn't want any issues with unscrewing the large wing nut later. The Oetiker clamps made a perfect seal. You can spend a lot of money on an Oetiker clamp tool, or just use a pair of end-cut pliers to do the same job (these can be found at any decent hardware store and are sometimes called "nippers").

Next it was time to add a rubber gasket to the wing nut (26) and attach this whole thing to the beer shank (27). Wing nuts give you the ability to apply a lot of force,



26



28



27



29

but don't overdo it. Tight enough doesn't require brute force in this case.

In my old setup, the CO₂ tank resided inside the freezer because I didn't have a collar through which to run the gas line if I placed it outside. That was certainly an option for me now, but the spot I was going to put the keezer would make placing a full tank into the only available exterior space cumbersome, so I chose to

put the tank inside again. I was thrilled to be able to neatly run my gas distribution along the inside of the collar (28).

Once this was complete, I decided it was time to move the keezer into its final spot before adding any kegs or serious weight into the unit (29). This proved to be a trick as I was squeezing my new keezer between a vertical plumbing pipe and my furnace in the basement. It fit, but just barely!

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My gas distribution scheme was based on the fact that I already owned a dual gauge regulator and a four-way gas distribution bar. With this equipment I can run my most common gas pressure from one gauge to four kegs. The other gauge is used for “special” pressures—low for an English mild or very high for a Belgian or hefeweizen. For now, I am moving that line back and forth as needed but soon will add a “Y” splitter on this line, giving me two connections for a total of six.

Even with all of the lines connected, my 20-pound CO₂ tank inside, and my current beer offerings put into place, I still have room for six 5-gallon corny kegs and my 3-gallon corny on the hump in the corner (30).



For now I placed the gas tank, the five big cornies, and the one small corny keg inside.

Before running any beer through the new faucets, I mixed up a gallon of beer line cleaner and put that into another little corny keg. I hooked that up to a beer line and a gas line and ran the full gallon of cleaner through and into a pitcher. I repeated this process on all six faucets, and then repeated the same process with a gallon of warm tap water to rinse the cleaner away.



With all of that accomplished, it was time to pull the first pint! (31) Since my kegs had been sitting uncomfortably at 60 degrees in my former ailing keezer, the first pour was a little foamy. Once the new keezer came down to proper temp, the pours have been perfect.

Speaking of temperature, I chose to reuse my old analog Johnson controller on this new keezer. (32) I have a digital control-



32



33

ler for my fermentation freezer, but that amount of precision is overkill for simply serving beer, in my opinion.

Though I used to hang the temperature controller overhead from a wire, I decided to take advantage of my new wooden collar and attach the controller to the front face of the keezer. Along with a bottle opener, this nearly completed the project. All that was left to do at this point was to deck out the keezer with a logo magnet (go White Sox!) and a dry erase board (33) on which to write the beer descriptions.

Because the commercial offerings are insanely expensive, I am still working on a drip tray solution that doesn't break the bank. I am playing with the idea of modifying a stainless steel “speed rail” to serve as my drip tray.

I had fun building this project and I know I will get many, many years of enjoyment from my keezer!

Scott Pointon won a silver medal in the 2012 Great American Beer Festival Pro-Am Competition. He lives in Crest Hill, Ill. For more on Pointon, see the Winners Circle on page 59.



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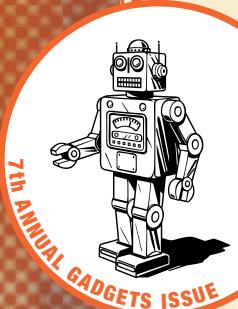
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OLD SCHOOL BREWING

Building a
**Retro
Rig**

BY
TOM HART



Certain trajectories are to be expected in life: Boy meets girl, boy marries girl, boy and girl have 1.14 children. Beer lover learns to brew, beer lover buys a bigger pot, beer lover roams the internet in search of larger equipment, beer lover's spouse can no longer park in the garage. In general, those trajectories move from less to more, small to large, plain to fancy, simple to complex. But what happens when the trajectory begins to fuel itself, leaving its original impetus in the trub?

If you are reading this article, you have likely been wooed by the gadget siren's song. I, for one, have never met a piece of stainless my brewery didn't deserve. Pumps and paddles, kettles and cornies, beer engines and beer guns, Randalls and RIMs; I have more brewing paraphernalia than you can spill a beer on. My current rig has a 60-gallon steam kettle and all the gizmos I can justify. It is great for brewing with friends, but useless for brewing just a little beer. It essentially takes a day to prep, a day to use, and a

day to clean. Consequently, I rarely have time to brew. It appears I lost sight of the six-pack for the bottles.

*"Let's face it:
as much as we
love our gadgets,
what we really
love is brewing."*

Let's face it: as much as we love our gadgets, what we really love is brewing. We are homebrewers and nothing gets our blood fermenting faster than the smell of a rolling boil. We live to taste our latest, but dream of our next. So what happens when, in the pursuit of all things doohickey, we cut ourselves off from the tap that satisfies?

I love my brewing rig, but have come to realize bigger isn't always better. I decided I needed something simple, small, and sane. I decided to reverse my gadget trajectory and build a 5-gallon, gravity-fed system.

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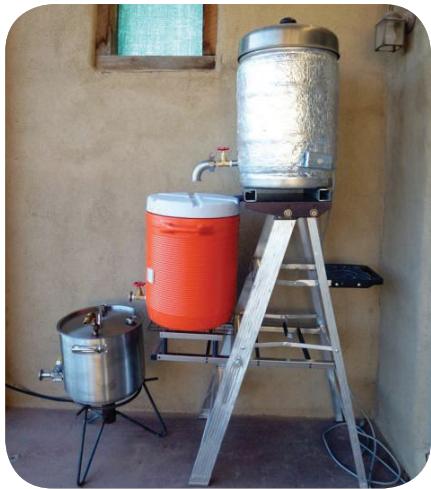
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BACK TO BASICS

I chose 5 gallons because my end package is cornies. Consequently, I began looking for a properly sized kettle around which to build my retro rig. There are many options out there, but I wanted something stainless and sturdy, with a clad bottom for good heat distribution. I needed enough room for a strong boil, settled hops, and break. In the end, I chose a 32-quart Winware pot and lid—not too big, not too small, but just right for me.

Every good brew pot needs a valve, so I constructed and installed a ½" outlet, utilizing a weldless bulkhead fitting like those available online. Using a step drill, I cut a hole and installed the fitting in less than five minutes. Next, I cut three holes in the lid, one for each end of an immersion chiller and the third for a whirlpool line, ala Jamil's whirlpool chiller (See "A New Twist on an Old Chiller" by Jamil Zainasheff in the January/February 2007



Zymurgy). The chiller is a simple 25-foot copper coil wound to fit within the kettle. When installed, the coil hangs from the lid, suspended about 2 inches from the kettle bottom. The whirlpool line is a short length of copper tubing that curves in to intersect the hanging coil. I plan on drilling a fourth hole for a thermometer, but have yet to determine which thermometer to use.

Moving up the ladder (literally, but I will get to that), I had to decide on a mash/lauter tun. I considered a heatable vessel, but ignoring the widget tempter's call, opted for a 10-gallon round cooler instead. These are readily available, affordable, easy to use, and sized to accommodate the variety of grain bills I anticipate using. A slotted copper coil, attached to another $\frac{1}{2}$ " weldless bulkhead fitting running through the cooler's existing outlet hole, serves as a false bottom.

To top everything off, I needed a hot liquor tank (HLT). Again, I considered a variety of options. I have the kettle to heat water, but wanted the flexibility of an independently heated HLT. In the end, I utilized a 15.5-gallon keg with two electric water heater elements I had on hand. I won't go into the details of its construction, except to say that 1-inch weldless fittings are available for this application. If you are interested in electric brewing, consult with a professional electrician before moving ahead. This HLT provides all the water required for any of the recipes I hope to create. It also offers the ability to heat with electricity or, with further adaptations, propane. The

Retro Rig Parts List

- 32-quart Winware stainless pot with lid
- 15.5-gallon keg
- 10-gallon round Rubbermaid cooler
- 4-foot aluminum stepladder
- Propane burner with stand
- 25-foot – $\frac{1}{2}$ " copper coil
- 3 – $\frac{1}{2}$ " weldless bulkhead fittings
- 1 – $\frac{1}{2}$ " stainless ball valves
- 2 – $\frac{1}{2}$ " gate valves
- 2 – 1" weldless water heater element fittings
- 2 – 1,500 watt 120-volt water heater elements
- Assorted copper tubing and fittings for chiller, whirlpool, and false bottom
- Assorted parts for ladder steps/shelves



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outlet on this vessel is another 1/2" weldless bulkhead fitting.

SETTING IT UP

My final concern was the stand. I wanted to utilize gravity as much as possible and chose a three-tier system. The stand needed to be portable, fireproof, and, if possible, constructed from something readily available. It sounded like a tall order until I came across a four-foot aluminum stepladder. Starting at the bottom, I determined the height of the kettle on its burner. At this height I constructed a new step/shelf for the mash/lauter tun. This step was built with cannibalized parts from a discarded projector stand. Finally, I removed the plastic shelf at the top of the ladder and replaced it with a larger metal one, constructed from more cannibalized projector stand parts. The end result is a sturdy stand that meets all my design criteria. Unfortunately, my adaptations prevent the ladder from folding, although this could be easily remedied if one was so motivated.

When brewing with this new system, gravity does most of the work, although a pump is utilized for the whirlpool. Cleanup involves a scrub with a sponge and a rinse with a hose. The whole rig fits in the back of my VW wagon and is ready to go at a moment's notice. I recognize it is yet another gadget in my already over-stocked brewing arsenal, but its simplicity and size make it one I will actually use. There is plenty of room for gadgets and automation, but for now I am satisfied brewing old school with my retro rig.

Thomas Hart is the author of "Seeking the Grail: Jacketed Conical Fermenters" in the November/December 2009



Zymurgy. Tom started brewing in 1982, foolishly believing it was a positive economic decision. Graduating to all-grain brewing

by his third batch, he quickly discovered the joy of gadgets. Tom is a BJCP National judge, co-founder and former head brewer of the Rio Grande Brewing Company, father of two aspiring gadget-heads, and the grateful husband of a very supportive wife.

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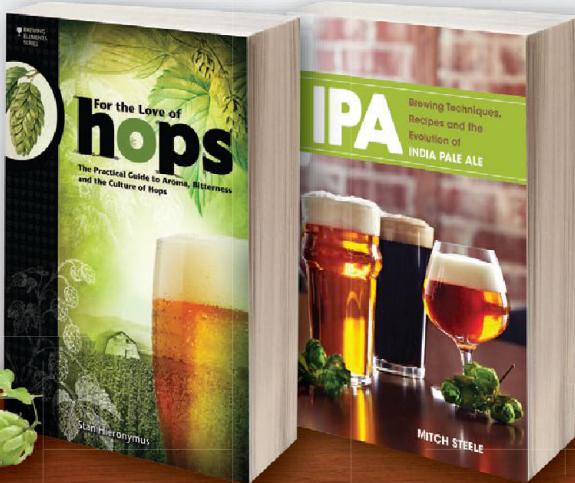
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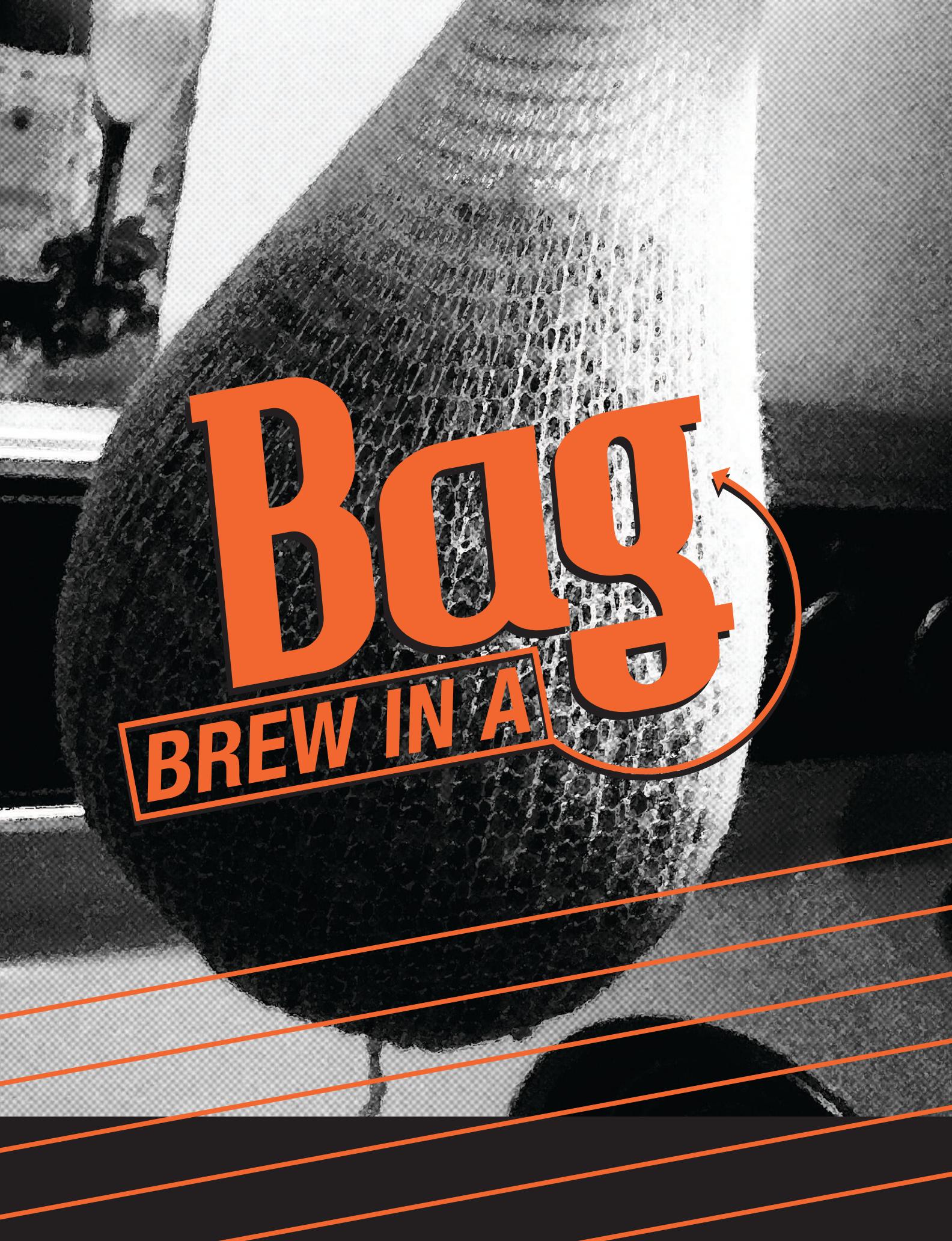
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BREW IN A



CHEAPER AND SIMPLER ALL-GRAIN BREWING

BY BRAD SMITH

It's easy to get set in our ways—even when it comes to homebrewing. Like many homebrewers, I brewed with extract for a few years, made a batch or two using partial mash, and then made the leap into all grain. I eventually settled into a simple three-tier system that suited my style. I continued brewing this way for the next 20 years.

About two years ago, I started researching Brew in a Bag (BIAB) for an article, and found that it indeed offers a cheaper way to get into all-grain brewing. The process is also simpler than traditional all-grain brewing, so it saves time. The time savings alone led me to try it out myself, and I found that BIAB offers a very attractive alternative to the traditional all-grain setup.

In fact, in Australia and New Zealand, hundreds of awards have been handed out to BIAB beers. The New Zealand Champion Homebrewer for 2011, Zane Smith, won using BIAB.

WHAT IS BIAB?

The basic idea behind BIAB is to use a single pot for both the mash and boil, with a bag to contain the grains during the mash. Instead of sparging your grains,

you just lift the grain bag out before starting the boil. When compared to a typical three-vessel brewing system, it saves money on equipment since you don't have to purchase a separate mash tun or hot liquor tun. It also saves time as there is no separate lautering step.

The formal definition of BIAB includes two key elements. First, the brewing process is done in a single vessel (typically just a large pot). Second, no separate sparge water is added. This means that the mash process is done using the full boil volume, using about two to three times as much water as a traditional mash.

The modern BIAB method is believed to have evolved from a discussion on an Aussie homebrewer forum in 2006. A new brewer named James Squire asked why he could not use a single vessel for both

mashing and boiling. This led Andrew Clarke to begin some experiments with traditional brewing equipment. Patrick Hollingdale, who later founded a website dedicated to BIAB called BIABrewer.info, did some of the first full single-vessel BIAB batches and confirmed that the method does make great beer.

The idea of using a single vessel for both mash and boil is not entirely new. In the 1970s and early 80s, many homebrewing pioneers were using large plastic buckets with heating elements to brew all-grain beers in a single vessel. There is also strong historical evidence that fermented beverages of all kinds were made in single vessels in ancient times, and only separated after fermentation was complete.

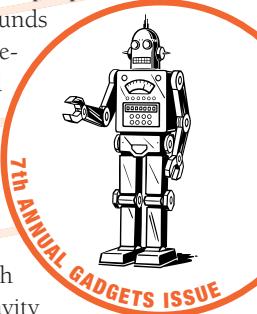
BREW IN A BAG EQUIPMENT

Any large pot, either aluminum or stainless, will work fine for BIAB. It is important, however, that you choose a pot large enough to contain your grains and water.

We will walk through the exact calculations for BIAB volumes in a minute, but a good rule of thumb is that your BIAB pot should be at least twice your batch size, with larger being better. So if you are targeting 5 gallons, you should purchase a pot that is at least 10 gallons in size. If you like to brew high gravity beers, you may want to buy one even larger than that.

At some point, you might be wondering how heavy the grain bag will get, which could potentially limit your batch size. A high gravity all-grain batch would be about 13 pounds of grain plus a few pounds of water in 5 gallons, which can certainly be lifted by most people.

Doubling that to 26 pounds in 10 gallons is still something most people could lift out by hand using leather gloves. Beyond that (15 gallons), you are probably looking at needing a pulley of some kind, at least for a high gravity beer. A low gravity beer (say 30 pounds of grain plus water absorbed to make 15 gallons of beer) might be OK, but it would still be a bit difficult to handle.





Heating and boiling 7-9 gallons of wort really can't be done on the stove top, so a second piece of equipment needed is a propane burner. Inexpensive outdoor propane burners can be found on sale after Thanksgiving, often packaged with a large pot for frying turkeys.

The final piece of equipment needed is the bag. The bag must be strong enough to hold 10-15 pounds of wet grains, but loose enough to allow the wort to still drain through the weave. The ideal bag material is polyester mesh, usually sold in the curtain section of fabric stores. It is

typically used to make very light curtain sheers. Simply buy a few yards of cloth, measure your pot, and sew a simple rectangle or square to fit your pot. You can test the cloth by running water through it—if it drains well, it will work for BIAB. Some brewers also purchase light polyester curtain sheers and cut them up to make their bag. Additionally, check online for the availability of pre-made BIAB bags.

The remainder of equipment (fermentation vessel, siphon, airlocks, etc.) is the same equipment you would already have on hand for brewing.

STEP BY STEP BREW IN A BAG

The process for BIAB is simple:

1. Calculate the amount of water needed (see below) and heat the water to the required infusion temperature (also below) in your pot. Turn the heat off at this point.
2. Once the water has reached your target step temperature, add the bag containing your crushed grains.
3. Cover the pot and wrap it in a blanket to maintain temperature. Stir your grains every 10 minutes to prevent hot spots from forming in the mash.
4. After 40-60 minutes, remove the bag containing your grains and allow it to drain.
5. Bring the wort to a boil, add hops, and continue to boil, cool, and ferment your wort as you would any other extract or all-grain beer.

BIAB BY THE NUMBERS

To brew with BIAB, you need to perform two calculations. The first is your mash volume, and the second is your infusion temperature.

For simplicity, let's assume you already have some idea of your pre-boil volume, which is the amount of water you need to put into your pot. For a typical 5-gallon batch, you might lose 1 gallon during the boil, and a half-gallon in cooling and transferring, so your pre-boil target volume would be 6.5 gallons.

Now to determine the water needed in the mash, you add the amount of water absorbed by the grain. For BIAB, this is

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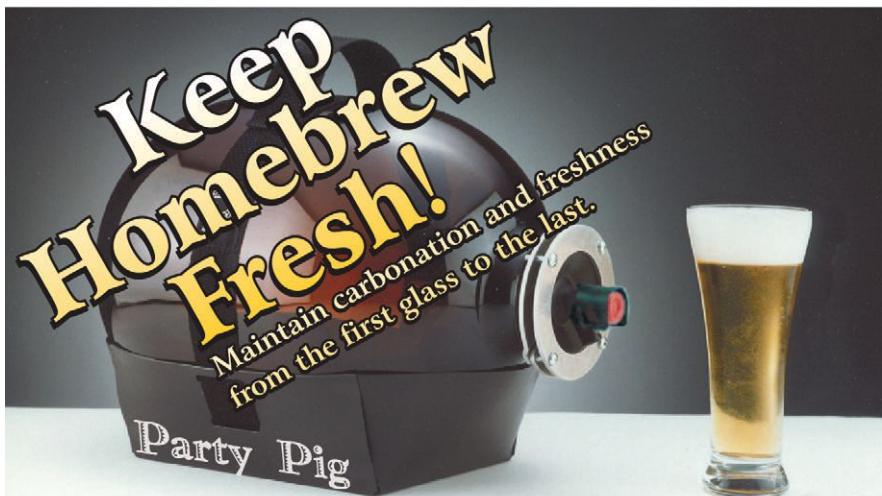
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$$\begin{aligned}\text{Mash-volume} = \\(0.075 \times \text{Grain weight}) \\+ \text{Pre-boil-volume}\end{aligned}$$

Zane's NZ Pale Ale

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New Zealand.*

INGREDIENTS

for 5.28 U.S. gallons (20 L)
9.68 lb (4.4 kg) Gladfields pale ale malt
13.1 oz (371 g) 80° L crystal malt
5.3 oz (150 g) dextrin malt
0.35 oz (10 g) Nelson Sauvin hops, 12.4% a.a. (60 min)
0.88 oz (25 g) NZ Hallertauer hops, 8.5% a.a. (10 min)
1.0 oz (28 g) NZ Cascade hops, 7.6% a.a. (10 min)
2.0 oz (57 g) NZ Cascade hops, 7.6% a.a. (flameout)
Danstar Nottingham yeast
1.5 oz (42 g) NZ Cascade hops, 7.6% a.a. (dry hop, three days)
1.0 oz (28 g) NZ Hallertauer hops, 8.5% a.a. (dry hop, three days)

Original Gravity: 1.053

Final Gravity: 1.014

Boil size: 6.9 gal (26.12 L)

Color: 10.5 SRM

Bitterness: 38.2 IBUs

DIRECTIONS

Mash with 31 quarts of water at 167° F (75° C) to achieve an initial mash temperature of 156° F (69° C). Remove grain bag and boil for 60 minutes, with hops added at 60 and 10 minutes and a final addition at flameout. Ferment for 14 days, adding dry hop for three days at end of fermentation. Bottle or keg and enjoy!

If our pre-boil volume is 6.5 gallons and we're adding 10 pounds of grain to the mash, the mash water volume needed would be $(0.075 \times 10) + 6.5 = 7.25$ gallons.

Once you have your target mash volume, the next step is to determine the infusion temperature needed. This is the temperature to heat your water to before adding the grain, and is typically 10-15 degrees above your mash step temperature.

The full equation is a bit complicated to cover here, so the quickest way to do this is to use a piece of brewing software or any online infusion temperature calculator. Do a search for "infusion calculator" or "strike water calculator" and you will find several. For a single step mash, your target mash temperature should be 148-154° F (64-67° C) depending on the beer

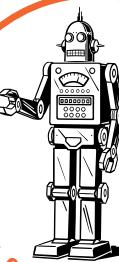
style, and typically you will heat your infusion water 10-15 degrees hotter than that to hit those temperatures with the water-grain mixture.

BIAB MYTHS

Many people have been skeptical of BIAB, and several "myths" have been propagated online as a result. Some did not think a full volume mash could be as efficient as a traditional lautering process and that having too much water in the mash would hurt conversion of the starches. Some complained that BIAB resulted in beers that

were too thin and lacking in body. Others worried that simply draining from a bag might release tannins or astringency. Let's examine these criticisms one at a time.

The most common concern over BIAB is that working with a full volume mash will lower your mash efficiency and will result in poor conversion of starches, meaning you will need to increase your grain bill to compensate.



7th ANNUAL GADGETS ISSUE

BeerSmith Dry Irish Stout (BIAB)

[http://beersmithrecipes.com/
viewrecipe/9665/brads-dry-
stout-biab](http://beersmithrecipes.com/viewrecipe/9665/brads-dry-stout-biab)

INGREDIENTS

for 5 U.S. gallons (18.93 L)
 5.5 lb (2.49 kg) pale malt
 2.0 lb (0.9 kg) flaked barley
 1.0 lb (0.45 kg) black (roast) barley
 2.0 oz (57 g) East Kent Goldings hops, 5% a.a. (60 min)
 Wyeast No. 1084 Irish ale yeast

Original Gravity: 1.041

Final Gravity: 1.012

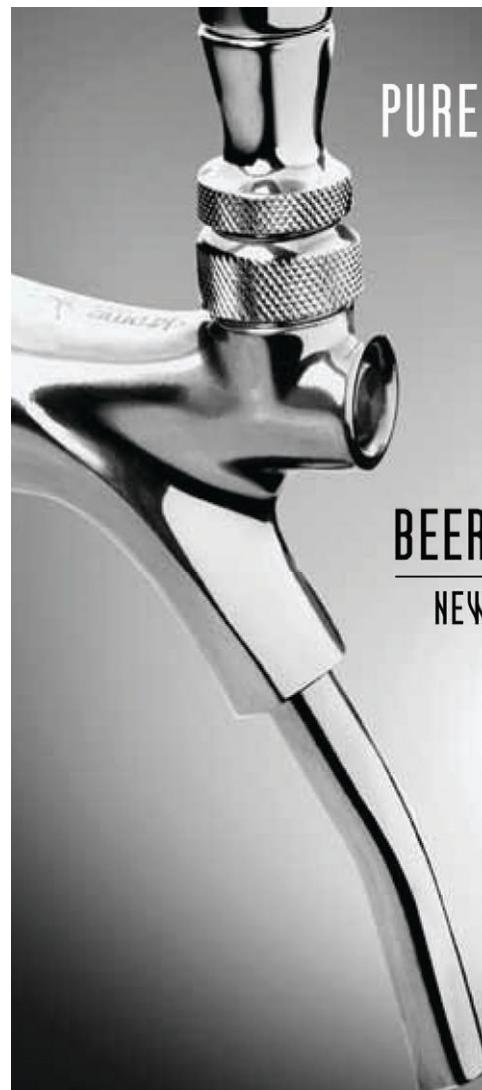
Boil size: 6.83 gal (25.85 L)

Color: 32 SRM

Bitterness: 41.1 IBUs

DIRECTIONS

Infuse with 30 quarts water at 158° F (70° C) to achieve an initial mash temperature of 152° F (67° C). Remove grain bag and boil for 60 minutes. Cool wort, add yeast, and ferment for four days in primary and 10 days in secondary at 67° F (19° C). Keg finished beer and tap after two more weeks.



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However, in reality, most brewers who have switched to BIAB report equal or in some cases even higher efficiency than their traditional three-stage brewery. How can this be?

It turns out that thin mashes actually produce more maltose (reference *New Brewing Lager Beer* by Gregory Noonan) and have a slightly higher conversion rate than a traditional mash. In addition, the full volume of the wort is in contact with the grains for the duration of the mash, which provides better extraction than

sparge water running through a grain bed. So BIAB can, in some cases, be more efficient, and generally results in better starch conversion than a traditional mash. In fact, German breweries have been doing decoctions at high water-to-grain ratios for a few hundred years now with no ill effects.

Another point is that since you can choose a fairly fine weave in your grain bag, you can crush your grains much finer with BIAB than you could using a traditional all-grain method. In fact, many BIAB

brewers “double crush” their grains by running them through the mill twice, which increases the overall mash efficiency with no risk of a stuck sparge.

A second myth is that BIAB beers are thinner or lacking in body. Ironically, this is almost the opposite of the previous myth. What is true is that mashing at a high water-to-grain ratio results in slightly higher maltose conversion in the mash, and this maltose can ferment more readily than some of the more complex sugars that would be left behind. So in theory, you could get a slightly higher attenuation of sugars resulting in a beer with a slightly lower finishing gravity.



In practice, this difference is usually well below the flavor threshold of the average consumer. Brewers in Australia have done a number of blind taste tests using identical recipes brewed with BIAB and also a traditional system. Even experienced judges could not say with any consistency which beers were brewed with BIAB. Also, if you are concerned about the slightly higher maltose production, you can raise your mash step temperature slightly or add a bit more dextrinous malts, such as Carapils, to compensate.

A final concern raised with BIAB is that removing the bag from the wort at the end of the mash without forming a proper grain filter bed could result in excessive tannins getting released into the beer, resulting in astringency. Critics say that squeezing the grain bag drives the release of tannins.

Obviously, proper bag selection for BIAB does come into play. You want to pick a bag that has a weave fine enough to capture most of the fine crushed grain material. However, assuming you have done this, the concern over astringency is more myth than reality. Some commercial brewers use hammer mills to beat their grains to a fine powder without excessive tannin release.

In fact, incorrect pH management (too high a pH during the mash) and excessive sparge water temperatures are the

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main causes of astringency in finished beer. Achieving the correct mash pH is a concern for both BIAB and traditional all-grain brewers—both should target a pH of around 5.2 for the mash itself. You can adjust your pH by adding darker grains, acid malt, acids, or a pH stabilizer. However, the issue of using excessively hot sparge water is eliminated with BIAB. Since you don't sparge with BIAB, sparge water temperature is of no concern.

SUMMARY

Though I brew with traditional equipment quite often, I have started to use BIAB more for my personal brewing as it saves me up to an hour each time I brew.

Here is a summary of the advantages/disadvantages of BIAB:

- Cheap and easy entry to all-grain brewing
- Requires less equipment and less money up front
- Saves time by cutting sparge step, and also less cleanup
- Good efficiency, good starch conversion, and good beer
- Safer, since you don't have to move pots of hot wort around
- All of the flexibility of all-grain
- Does require a very large pot, especially for high gravity beers

If you know someone looking to make the leap to all-grain brewing without investing in a large three-tier system, BIAB is the way to go. For the cost of a large pot, a burner, and a few yards of material, a homebrewer can easily transition to all-grain. Even for experienced brewers, BIAB offers a substantial time savings—in my case nearly an hour per batch by eliminating the sparge and saving on cleanup.

Brad Smith, Ph.D., is the author of the BeerSmith homebrewing software, the book *Home Brewing with BeerSmith*, and the host of a popular homebrewing podcast, newsletter, and blog at BeerSmith.com/blog. In May, he launched a recipe sharing site that now has nearly 10,000 members at BeerSmithRecipes.com, and is currently finishing development on mobile versions of BeerSmith for iPhone, iPad, and Android.

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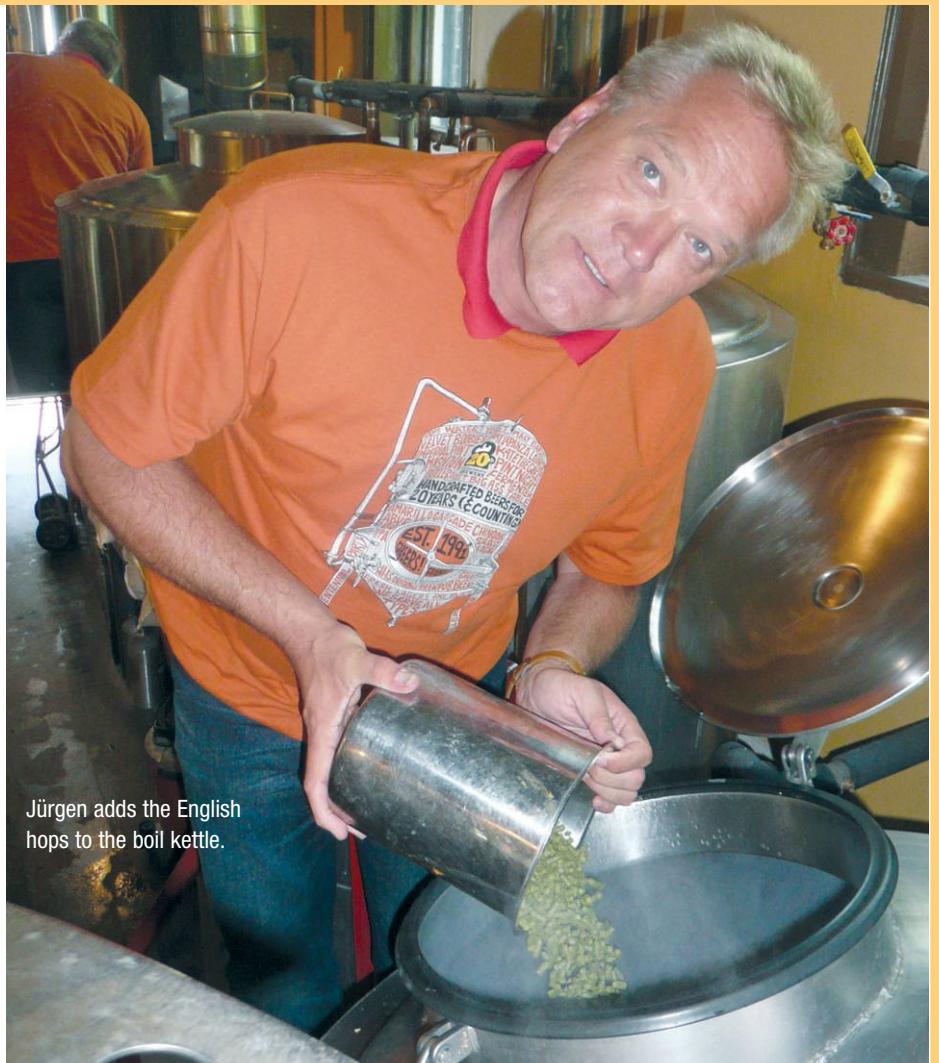


When my long-time buddy Jürgen Buhrmann, who happens to be the plant manager at Weyermann® Malt in Bamberg, turned 50 last year, he and his wife Ulrike flew to beautiful New England—my neck of the woods—for a well-earned vacation.

With Jürgen, however, beer making seems always on his mind, even when he's off the job. As a special birthday treat, therefore, he asked me to find a hospitable brewpub that would allow him to brew his all-time favorite beer, which he thought would be a delightful gift to share anonymously with the pub's patrons.

Because I frequently guest-brew with my friend Tod Mott, at the time the head brewer at the Portsmouth Brewery in New Hampshire, the arrangement was easily made. But Jürgen had a quirky surprise up his sleeve, namely the recipe. Of all the styles in the world to choose from, he wanted to brew not a German bockbier, not a Pils, not a kellerbier, not an Oktoberfestbier, but an oatmeal stout! In addition, the brew date was set for June, which meant it was summertime in Portsmouth; not exactly stout season!

When Tod and I asked Jürgen about his seemingly un-German and un-Reinheitsgebot choice, he pointed out that although oats are now banned from German mash tuns by the modern rendition of the Beer Purity Law, which allows only for malted barley and/or malted wheat to be used in German beers, dark oat beers actually



Jürgen adds the English hops to the boil kettle.

have a venerable and ancient tradition in the territory that is today's Germany. In fact, such beers date back to the Benedictine brew monks around the turn of the first millennium. Then, these cloistered friars were known to brew several distinct beers made in part or entirely from oats. In modern lingo, we would call such oat brews "beer styles," and one of these "styles" was *cervisa*. The term is a slightly mangled version of *cerevisia*, Latin for beer. *Cervisa* must have been a beer of almost oily silkiness and smoothness. It was flavored with herbs, as hops came into common use a few centuries later.

Thus, this old monk brew was technically a gruit ale. It seems to have had a milky appearance and a slightly sour taste. Sometimes *cervisa* was also fortified with honey, in which case it was called *cervisa mellita* (from *melle*, Latin for honey).

Cervisa: "Session Beer" for Monks

As best as we can tell from old annals, *cervisa* was the everyday quaffing and session beer in Benedictine abbeys. It was consumed almost incessantly throughout the day, as breakfast drink, aperitif, digestif, and nightcap, by both resident monks



and visiting pilgrims. According to the strict dietary rules laid down by the order's austere founder, the Italian monk Saint Benedict (AD 480–547), each member of the cloistered community was allotted five "mass" of this liquid bread a day. The term mass is still used in Bavaria today to denote a one-liter mug. In those days, however, a mass was any measure roughly between a U.S. quart and a half-gallon. A single monk, therefore, might have drained as much as one standard U.S. keg of oatmeal *cervisa* in just one week!

The monks also brewed a very strong beer called *celia*. This style was usually made from barley or wheat, or both, but without oats. Think of it as the medieval equivalent of a bockbier or a barleywine. *Celia* was decidedly an upper-crust brew reserved only for the lofty abbot and his inner circle, as well as for his distinguished guests. Ordinary monks rarely got to taste it. However, the final, weak runnings of *celia* were often collected separately, mixed with fresh extract from oats, and then fermented as a blended brew called *conventus* (Latin for meeting). This weak oat-*conventus* was considered a rather plebeian brew that was doled out to the abbey's secular workers and even to beggars.

Given the primitive (by our standards) direct-fired kilns of the High Middle Ages, it is obvious that many malt kernels used in *cervisa*, *conventus*, and other monastic brews got scorched during drying and curing. It is also likely that the monks' spontaneously fermented brews were often ales, not lagers, especially in the

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GERMAN BIRTHDAY OATMEAL STOUT

Ingredients

for 5 U.S. gallons (19 liters)

7.76 lb	(3.54 kg) Weyermann® pale ale malt (approx. 85% of grist bill)
0.55 lb	(0.25 kg) Weyermann® Caraaroma® (approx. 6%)
0.46 lb	(0.21 kg) flaked oats* (approx. 5%)
0.37 lb	(0.17 kg) Weyermann® Carafa® Special Type II (de-husked; approx. 4%)
0.8 oz	(23 g) Challenger, 6.8% a.a. (70 min)
1.0 oz	(28 g) East Kent Golding, 4.7% a.a. (10 min)
1.1 oz	(31 g) East Kent Golding 4.7% a.a. (0 min)
1 tsp.	Irish moss (kettle fining)
	Nottingham ale yeast
	Optional corn sugar for priming (or CO ₂ for conditioning)

* Brewers flaked oats can also be replaced with oats from your local grocery store. Quick oats are fine, but instant oats are better because they are more thoroughly pre-gelatinized.

Original Gravity: 1.054 (13.5 °P) (80% efficiency)

Final Gravity: 1.014 (3.5 °P)

SRM: 21

IBU: 28

ABV: 5.3% (4.2% ABW)

Directions

Mash in for a grain bed temperature of 153° F (67° C). Depending on the thermal characteristics of your equipment, this should require brewing liquor at approximately 167° F (75° C). Give the mash a single hydration and beta-amylase rest of 90 minutes. The mash temperature may drop off by about 10 percent during this rest, but it will climb up again during the sparge. Recirculate the first runnings for about 10 minutes, then lauter the mash slowly with sparge liquor at 167° F (75° C). Sparge until the kettle is full, which is likely to take about two hours. The exact kettle volume and gravity at the start of the boil depends on your standard evaporation rate. Boil the wort for about 75 minutes. At about 12 percent evaporation, the kettle gravity at the start of the boil should be about 1.051 to 1.052 (12.8° P), which means that the kettle needs to contain about 5.6 gallons (21.28 liters) of wort. At the end of the boil, the net kettle volume should have dropped to 5 gallons (19 liters) and the gravity should have risen to the target OG of 1.054 (13.5° P).

Add the bittering hop, Challenger, 5 minutes into the boil for 70 minutes of isomerization. This should give a hop utilization of about 30 percent. Add the

flavor hop, East Kent Golding, 60 minutes into the boil, leaving 15 minutes of isomerization before shut-down, which should give a hop utilization of about 14 percent. Add 1 teaspoon of Irish moss as kettle finings about 10 minutes before shut-down. Before the knock-out, verify that the OG is on target at 1.054 (13.5 °P). If necessary, adjust it up or down by either extending the boil for a few minutes or by liquorizing down the wort. Whirlpool the brew for about 30 minutes. Add the aroma hop, East Kent Golding, 10 minutes after the start of whirlpooling. At this stage, we assume next to no further alpha-acid isomerization from the aroma hop.

Finally, heat-exchange the green beer to a fermentation temperature of about 68° F (20° C). The robust Nottingham yeast is happy in a range between 57° F and 70° F (14° C and 21° C) and is even capable of fermenting wort at a temperature as low as 54° F (12° C). Depending on your preference for flavor complexity from esters and diacetyl, therefore, you can deviate from the primary fermentation temperature recommended here. Fermenting the brew at the upper end of the yeast's temperature tolerance obviously encourages more ester and diacetyl formation, and vice versa. The brew will likely reach the final gravity of about 1.014 (3.5° P) within three to seven days, again depending on the

selected primary fermentation temperature. When fully attenuated, rack the brew off the debris into a secondary fermenter and leave it there for two weeks or longer. Rack the brew again, prime or condition it, then package.

Partial Mash Version: For the extract brewer, unfortunately, there is no straight stout liquid malt extract (LME) available that would adequately replicate Jürgen's very own customized oatmeal stout recipe. A partial mash with steeping of the specialty grains, therefore, is the only shortcut compared to the all-grain version. For this, reduce the 7.76 lb (3.54 kg) of Weyermann® pale ale malt to 1.0 lb (0.45 kg) for the mini mash. Crack the specialty grains in the quantities specified in the all-grain recipe. Place these in a malt bag with the 1.0 lb pale malt and immerse them for about half an hour in 4 cups of hot water (about 155° F or 68° C). After steeping, lift the bag out of the liquid and rinse it with 2 to 3 cups of cold water. Do not squeeze the bag. Use the approximately 6 to 7 cups of liquid as part of the brewing liquor, and add 5.5 lb (2.49 kg) light malt extract syrup. Dissolve extract thoroughly, and top off with brewing liquor to desired pre-boil kettle volume. Once the boil has started, proceed with the kettle and cellaring procedures as for the all-grain version.

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summer. We don't know for sure, because the existence of yeast was only discovered by the Dutch microbiologist and microscope inventor Antonie Philips van Leeuwenhoek in 1674, and only understood as a biological fermentation agent in the mid-1800s due to Louis Pasteur's research. Thus, upon faithful historical consideration, Jürgen is right: A top-fermented oatmeal "stout" from Germany is not such a far-fetched concept after all! This is not to say that the oatmeal stout the three of us brewed in Portsmouth was truly German, but it was Jürgen's birthday brew, so he was entitled to some slack!

A Modern Birthday Brew

As a concession to modern tastes and an anachronistic deviation from the monastic oat-brews of yore, Jürgen insisted on using hops instead of herbs. He did not want to make a "gruit-stout." He selected Challenger (6.8 percent a.a.), an English hop, for bittering. This is a spicy descendant of Northern Brewer. As a flavor and aroma hop, he selected East Kent Golding (4.7 percent a.a.), a fragrant old English hop developed in the late 18th century and a classic for British-style ales.

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These are arguably a fitting substitute for the myrtle, yarrow, or mugwort the old monks may have used. For yeast, Tod picked a Nottingham ale strain, a highly flocculent and dependable attenuator that is often used in high-gravity brewing as well as in cider making. Finally, being a member of the Weyermann® staff, Jürgen of course insisted on a grain bill with plenty of Weyermann® malt.

Now, because Jürgen wanted to share his brew generously with as many North American beer lovers as possible, here

is the recipe for his German Birthday Oatmeal Stout. May all you Zymurgy readers have as much fun cloning it as Tod and I had brewing it on that hot summer day in New Hampshire with our birthday man.

Horst Dornbusch is a Massachusetts-based consultant in the international brew industry, the author of several books on beer, the associate editor of *The Oxford Companion to Beer*, and a frequent contributor to beer-related professional and consumer periodicals in North America and Europe.

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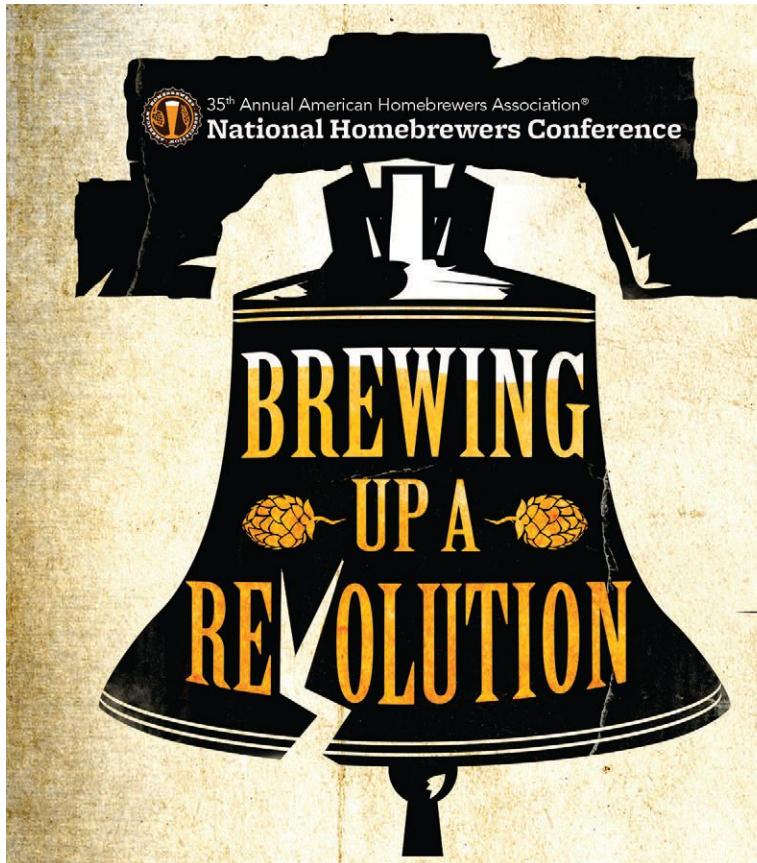


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by Amahl Turczyn Scheppach

2012 GABF Pro-Am Competition

The seventh annual Great American Beer Festival Pro-Am Competition featured award-winning homebrew recipes from AHA-sanctioned competitions held on or after January 1, 2011. For the GABF Pro-Am, winning homebrew recipes are selected by participating craft breweries to be scaled up to a commercial-sized batch and entered at the GABF for judging. Craft breweries get the benefit of the homebrewer's creativity, and the homebrewer gets to see his or her recipe recreated in a professional environment, then put on tap at the GABF Pro-Am booth for all to sample. While judged separately from the regular GABF entries, winners are awarded gold, silver, and bronze medals, and both the craft brewery and homebrewer receive a medal.

The gold medal for the 2012 competition was awarded to AHA member Jay

Shambo for his Belgian pale ale More Fun Blonde, brewed at New Belgium Brewing Company in Fort Collins, Colo. The silver medal went to AHA member Scott Pointon for his mild ale Pointon's Proper, brewed with Lanny Fetzer of RAM Restaurant & Brewery in Wheeling, Ill. And the bronze went to AHA member Kyle Sisco for his Classic American Pilsner, brewed with Mike Hoops of the Minneapolis Town Hall Brewery in Minneapolis, Minn.

Medals were presented at the GABF awards ceremony at the Wells Fargo Theater in Denver by Pro-Am competition sponsors Crosby & Baker, Ltd., Briess Malt & Ingredients Company, HopUnion, and White Labs.

Gold Medal: More Fun Blonde
New Belgium Brewing Co.,
Fort Collins, Colo.

Brewer: Grady Hull
AHA Member: Jay Shambo



Jay Shambo (above) has been brewing for five years, with all-grain recipes making up the majority of the last four years. He built his own brew system, a two-tier, three "keggle" system with a pump and three burners, doing all the welding himself. He brews mainly American and Belgian ales, but lately has been trying lagers and other styles.

More Fun Blonde came about after he had the opportunity to taste Westvleteren Blonde. Shambo says of the experience, "I figured this was one of the best beers I had ever drunk (better, though different, than the 12), so why not brew something like it?" His own version comes quite close to the original, though he admits it isn't a carbon copy. "The Westvleteren has a bit more kettle caramelization than my version, but otherwise I did OK."

Shambo entered his cloned Trappist blonde in a Fort Collins brew club competition put on by the Liquid Poets Society. The beer had previously done well in several other Front Range competitions, with a handful of first- and second-place finishes. But after winning first place in the Belgian Light category of



More Fun Blonde

JAY SHAMBO, GOLD MEDAL, GABF PRO-AM 2012

INGREDIENTS

for 5 U.S. gallons (18.93 L)
8.5 lb (3.86 kg) German Pils malt
2.0 lb (0.9 kg) American pale malt
13.0 oz (369 g) dextrose
0.5 oz (14 g) Northern Brewer pellets, 9% a.a. (60 min)
0.6 oz (17 g) Northern Brewer pellets, 9% a.a. (20 min)
0.7 oz (20 g) Willamette pellets, 5% a.a. (20 min)
0.5 oz (14 g) Willamette pellets, 5% a.a. (0 min)
Westmalle ale yeast

Original Gravity: 1.067

Final Gravity: 1.007

SRM: 4.3

IBU: 34

DIRECTIONS

Use tap water, preferably from Ft. Collins. "It is fairly neutral and great without additions for all but the hoppiest and darkest beers." Mash for 60 minutes at 152° F (67° C). Batch sparge. Chill to 65° F (18° C), pitch and raise to 75° F (24° C) over 36 hours. Hold at 75° F for the remainder of fermentation.

Extract Version: Substitute 8 lb (3.63 kg) pale malt extract syrup for Pils and pale malts.

the June 2012 Liquid Poetry Slam competition, New Belgium's Alex Jesse picked it for the brewery's 2012 GABF Pro-Am bid.

"New Belgium was great to work with," said Shambo. "They basically said, 'What do you want to do?'" Shambo and New Belgium brewer Grady Hull spent a couple of hours tweaking the recipe to go from six gallons to 180 hectoliters, but the technique remained mostly consistent with the original homebrewed recipe.

"It is a simple recipe," Shambo said. "The trick is making the yeast work for you." As far as brewing philosophy, homebrewer and pro brewers got along great during the Pro-Am brewing sessions. Shambo was surprised by this, given New Belgium's status as the third-largest craft brewery in the U.S. "I can't say enough about how great everyone at the brewery treated me," he said.

Silver Medal: Pointon's Proper

RAM Restaurant & Brewery,
Wheeling, Ill.

Brewers: Lanny Fetzer and Eric Quick

AHA Member: Scott Pointon

Pointon's Proper

SCOTT POINTON, SILVER MEDAL, GABF PRO-AM 2012

INGREDIENTS

for 5 U.S. gallons (18.93 L)
6.0 lb (2.72 kg) Maris Otter malt
8.0 oz (227 g) Golden Promise malt
9.0 oz (255 g) 65° L Thomas Fawcett crystal II malt
7.0 oz (198 g) 121° L Thomas Fawcett dark crystal II malt
4.0 oz (113 g) dextrin malt
4.0 oz (113 g) 200° L pale chocolate malt
1.0 oz (28 g) 550° L English black patent malt (add during sparge)
1.0 oz (28 g) Fuggles pellet hops, 4.2% a.a. (60 min)
0.2 oz (5.6 g) Challenger pellet hops, 7% a.a. (50 min)
1 Whirlfloc tablet (2 min)
Wyeast 1768 English Special Bitter ale yeast

Original Gravity: 1.039

Final Gravity: 1.010

SRM: 18

IBU: 21.6

Mash Efficiency: 79%

Brewhouse Efficiency: 70%

Boil Time: 70 minutes

ABV: 3.9%

DIRECTIONS

Use 100 percent reverse osmosis-filtered water. Mash in at 152° F (67° C) and hold for 60 minutes. Mash out at 162° F (72° C) for 10 minutes. Acidify sparge water with 0.25 tsp acid blend and fly sparge with 175° F (79° C) water. Collect 6.25 gallons of wort and do a hard 70 minute boil. Cool to 65° F (18° C), aerate 45 seconds with pure oxygen, then pitch a fresh package of Wyeast 1768. (Because this yeast was unavailable, we used Wyeast 1968 for the Pro-Am beer). Ferment at 68° F (20° C).

Extract Version: Substitute 4.5 lb (2.04 kg) pale malt extract syrup for the Maris Otter malt. (Use a Maris Otter or pale ale malt extract for best results.) Steep remaining grains in 155° F (68° C) water for 45 minutes. Drain, rinse grains, dissolve extract completely, and proceed with boil.



Scott Pointon (above) has been homebrewing since 2008. Prior to that, he had always wanted to try it, but after a job switch, he found himself working alongside veteran brewer Mike Pezan. Pezan, a former homebrewer-turned-pro brewer back in the 1990s, became a source of both inspiration and information, and with access to his knowledge, Pointon jumped in and never looked back. He also made the next logical step, tapping into his local brewing community and joining the Brewers of South Suburbia (BOSS) homebrew club, where he's learned from some of the best brewers in the country.

Like many brewers, Pointon made the transition from extract brewing on the kitchen stove to all-grain brewing on a propane burner in the garage. He uses a Rubbermaid cooler rig that he built to do infusion mashing, with fermentation taking place in a dedicated, temperature-controlled chest freezer. British and Belgian styles are favorites, and strong ales may get preferential treatment when it comes to packaging. For instance, he still bottles stronger styles that he feels will improve with age, namely strong Belgians, old ales, and imperial stouts. He kegs the rest and serves them through a six-faucet “keezer” that he built. (See Pointon’s article on page 30.) A wood-worker and self-proclaimed tinkerer, he relishes brewery-related building projects.

Having a great session beer on tap in his basement wasn’t enough, though. His

medal-winning mild ale started out based on a recipe by Jamil Zainasheff in *Brewing Classic Styles* that Pointon then tweaked to fit his tastes and his brewing system. It was soon entered in several competitions and did very well.

“I first brewed this recipe in the summer of 2011,” Pointon said, “and since that time it has earned awards in the Dayton DRAFT 2011, Schooner Championship 2011, CBS Spooky Brew 2011, BABBLE 2012 (where it won Best of Show), and the BOSS Chicago Cup 2012.”

The Best of Show win at the BABBLE competition is how he came to brew Pointon’s Proper with Lanny Fetzer and Eric Quick at the RAM Brewery in Wheeling, Ill. Unsurprisingly, it was a very positive experience. “I can’t say enough how great

those guys are and what an awesome job Lanny did in adapting my recipe to his brewhouse,” he added.

Bronze Medal: Classic American Pilsner
Minneapolis Town Hall Brewery,
Minneapolis, Minn.

Brewer: Mike Hoops

AHA Member: Kyle Sisco



Kyle Sisco (above) has been homebrewing on and off for about six years. He started off “recreationally” for the first few years, then began taking the hobby a bit more seriously, committing himself fully since 2010. His favorite styles to brew (and drink) are German lagers, but he says, “I brew virtually every BJCP style.”

His winning Classic American Pilsner has seen a very short evolution. It won Best of Show in the Minnesota Craft Beer Week competition the first time he brewed it, and that’s the only competition it saw before taking the bronze medal at this year’s GABF Pro-Am.

As far as equipment goes, Sisco employs a full gamut of technical gadgetry. “The equipment I find most important in my brewery are the refrigerators and aquarium heaters for fermentation temperature control and cold conditioning afterward. I have plenty of fancy gadgets that make the hot side easier, but the cold side is everything, from yeast strain, health, and cell count, to temperature management. But there are other critical components to making great beer.” Patience, he says is one. “And having the world’s most supportive (or should I say tolerant) wife goes a long way, too.”

Sisco collaborated with Mike Hoops at the Minneapolis Town Hall Brewery for the commercial version of his CAP, which Hoops scaled from 5.5 gallons up to 10 barrels. “Brewing with Mike was a dream

Classic American Pilsner

KYLE SISCO, BRONZE MEDAL, GABF PRO-AM 2012

INGREDIENTS

for 5.5 U.S. gallons (20.82 L)
9.0 lb (4.08 kg) Rahr six-row malt
2.0 lb (0.9 kg) flaked corn
7.05 oz (200g) acid malt
1.05 oz (30 g) Sterling pellets,
 7.5% a.a. (FWH)
0.35 oz (10 g) Sterling pellets,
 7.5% a.a. (30 min)
0.35 oz (10 g) Sterling pellets,
 7.5% a.a. (20 min)
0.35 oz (10 g) Sterling pellets,
 7.5% a.a. (10 min)
1.05 oz (30 g) Sterling pellets,
 7.5% a.a. (0 min)
0.5 t Wyeast Brewer’s Yeast Nutrient
0.25 t 5 Star SuperMoss HB
 Wyeast 2035 American Lager or White Labs
 WLP 840 American Lager yeast

Original Gravity: 1.053

Final Gravity: 1.010

IBU: 40

SRM: 4

Boil Time: 60 minutes

Efficiency: 80%

Evaporation Rate: 1.5 gallons per hour

DIRECTIONS

Single infusion mash (no mashout) at 150° F (66° C) for 75 minutes using 5.5 gallons (20.82 L) of water (profile below); target pH: 5.2 measured at room temp. Batch sparge at 168° F (76° C) using 4 gallons (15.14 L) of water (profile below) acidified with lactic acid to pH 5.5. Collect 7.5 gallons (28.39 L) of wort and boil for 60 minutes. Cool and oxygenate for one minute at 1.5 LPM. Ferment 48° F (9° C) until activity shows signs of slowing. Ramp temperature up 2° F per day until you reach 65° F (18° C), then hold for a few days. Crash cool to 30° F (-1° C) and lager for 1 to 3 months.

Water Profile (in ppm):

Calcium: 100
Magnesium: 20
Sodium: 20
Sulfate: 150
Chloride: 115
Bicarbonate: 60
Residual Alkalinity: -30
Sulfate:Chloride: 1:3 (balanced)

Extract version: Substitute 6.0 lb (2.72 kg) extra-pale malt extract syrup for six-row malt and 1.5 lb (0.68 kg) corn sugar (dextrose) for flaked maize. Omit acid malt. Note extract recipe may not have the full corn character of the all-grain version

KUDOS—BEST OF SHOW

AHA/BJCP Sanctioned Competition Program

July 2012

San Diego County Fair Homebrew Competition, 1,244 entries—*Tim Wang, San Diego, CA.*
Spirits of Baker County Homebrew Competition, 23 entries—*Micah Hilario, Vancouver, WA.*
E.T. Barnette Homebrew Competition, 81 entries—*Steven Jayich, Anchorage, AK.*
ASH Homebrewer of the Year Round 5, 4 entries—*Michael Heerbrandt, Scottsdale, AZ.*
Battle of the Home Brews 2012, 86 entries—*Kyle Campbell, Westminster, CO.*

August 2012

CenLa Brew Off, 64 entries—*Jordan Johnson, Lumberton, TX.*
Minnesota State Fair Homebrew Competition, 680 entries—*Steve Fletty, Falcon Heights, MN.*
West Coast Brewers Ironbrewer 2012, 14 entries—*Trevor Bentley, Bibra Lake, WA, Australia.*
Beer Quest Gimme Some Sugar, 20 entries—*Aaron Carnes, Lincoln, NE.*
Byggvir's Big Beer Cup, 250 entries—*Tim Roets, Waconia, MN.*
The Limbo Challenge, 240 entries—*Jim Marr, Whitewright, TX.*
New Mexico State Fair Pro-Am, 567 entries—*Timothy Lambert, Albuquerque, NM.*
Puyallup Fair, 71 entries—*Jonathan Rabon, Vancouver, WA.*
Summer Suds in Savannah, 276 entries—*Anjie Watts, Alpharetta, GA.*

September 2012

Barley Bros. Traveling Beer Show Brewathlon, 48 entries—*Ryan Collings, Boise, ID.*
Coconino County Fair Homebrew Competition, 24 entries—*Ken Daniel, Flagstaff, AZ.*

Intervarsity Beer Brewing Competition 2012, 29 entries—*University of Cape Town (UCT), Cape Town, South Africa.*

Castle Hill & Hills District Homebrewing Competition, 192 entries—*Luke Perry Gore, Sydney, NSW, Australia.*

Drink Good Beer Mash-Up, 29 entries—*Ray Grace, Long Beach, CA.*

Blue Ridge Brew Off (BRBO), 419 entries—*Steve Nash, Winston-Salem, NC.*

Schooner Homebrew Championship, 640 entries—*Gerald Poss, Black Earth, WI.*

Santa Cruz County Fair Homebrew Competition, 169 entries—*Scott Satterwaite, Sunnyvale, CA.*

Dayton Art Institute Oktoberfest Home Brew Contest, 91 entries—*Ian Bock, Dayton, OH.*

Orpheus Cup Mead Tasting & Competition, 12 entries—*Wayne Bonciky, Evergreen, CO.*

Tulare County Fair Homebrew Competition, 58 entries—*Richard Gleason Jr., Visalia, CA.*

Queensland Amateur Brewing Championships 2012, 263 entries—*David Clarke, Brisbane, QLD, Australia.*

UK National Homebrew Competition, 460 entries—*Graeme Coates, Oxford, Oxfordshire, UK.*

DRAFT BrewFest, 193 entries—*Michael Janasik, Caledonia, WI.*

Big TAP Chautauqua Fest Homebrew Competition, 19 entries—*Jason Terry, Ashland, WI.*

Scottish & Irish Ale Highlander Challenge, 20 entries—*Mark Tanner, Oak Harbor, WA.*

Muse Cup, 38 entries—*Ric Cunningham, Johnstown, CO.*

ASH Homebrewer of the Year Round 7, 3 entries—*Michael Heerbrandt, Scottsdale, AZ.*

A Knights Brew, 11 entries—*Paul Ellerkamp, Dickinson, ND.*

Competencia Profesional - Cerveza Mexico 2012, 100 entries—*Celebration Ale, Cerveceria Les Nez, San Luis Potosi, SL, Mexico.*

Douglas County Fair Home-Brewed Beer Competition, 28 entries—*Tom Malowski, Omaha, NE.*

Pacific Brewers Cup, 347 entries—*Toby Kingsley & Brian Holter, Culver City, CA.*

WA State Amateur Brewers Competition, 109 entries—*Jeff McGrath, Parkwood, WA, Australia.*

Black Forest Brew-Off, 56 entries—*Jimie Barnett, Jr., Kingsport, TN.*

Southern Oregon Amateur Beer & Wine Festival, 170 entries—*Murray Huggins, Medford, OR.*

Brewmasters Open, 434 entries—*Les Wright, Cumming, GA.*

Beau's Oktoberfest Pro-Am Competition, 35 entries—*Patrick Boisvenue, Ottawa, ON, Canada.*

Maryland Microbrewery Festival Homebrew Competition, 100 entries—*Kyle Cogar, Dunkirk, MD.*

Keep Florence Beautiful Brew Fest, 11 entries—*Bryan Fisher, Florence, SC.*

2012 Long Island Fair, 72 entries—*Eric Grimm, Huntington, NY.*

Alaska Meadery Equinox Competition, 48 entries—*Steven Kunemund, Anchorage, AK.*

2012 Arizona Society of Homebrewers Oktoberfest Competition, 207 entries—*Michael Heerbrandt, Scottsdale, AZ.*

6th Annual National Organic Brewing Challenge, 111 entries—*Jered Chaney, Joel Wickersham, and Josh Pritchard, Ben Lomond, CA.*

PantegoFest Homebrew Competition, 32 entries—*Matt Westlake, Fort Worth, TX.*

Son of Brewzilla, 375 entries—*Steve Amey, Aurora, OH.*

Commander SAAZ Interplanetary Homebrew Blastoff!, 595 entries—*Jay Glenn and Steve Luecke, Riverview, FL.*

O'Zapft Is!, 104 entries—*Matt Morris, Keller, TX.*

October 2012

I Concurso Paranaense de Cerveja Feita em Casa, 66 entries—*Alberto de Mattos Basso, Curitiba, PR, Brazil.*

Roberts Cove Germanfest Home Brew Competition, 95 entries—*Robert Luebbering, Cincinnati, OH.*

Rapid City Bierbörse Homebrew Competition, 57 entries—*Mark Warnke, Rapid City, SD.*

Queen of Beer 2012, 90 entries—*Wendy Schmidt, Springfield, VA.*

Sacred Heart Oktoberfest & Homebrew Competition, 46 entries—*Alicia & James Dougherty, Oxford, PA.*

Townsend Fall Fest Homebrew Contest, 19 entries—*Bill Upthegrove, Townsend, MT.*

Oaktoberfest, 66 entries—*Bill Lynch, Waxhaw, NC.*

Yakima Fresh Hop Ale Festival, 33 entries—*Derry Jeffries, Yakima, WA.*

Salt River Fields Home Brewing Contest at Oktoberfest, 123 entries—*Bryan Gold, Phoenix, AZ.*

2012 Napa Homebrewers Classic, 42 entries—*Larry Neal, Vacaville, CA.*

Northeast Big River Homebrew Competition, 155 entries—*Nathan Remmington, Bloomington, MN.*

West Coast Brewers Oztoberfest, 7 entries—*Bob Paniak, Morley, WA.*

AHA Club-Only Competition, Light Hybrid Beer, 90 entries—*Bill Lynch, Waxhaw, NC.*

Jacktoberfest Craft Beer Competition, 61 entries—*Nathan Harms, Vicksburg, MS.*

Valhalla - The Meading of Life VIII, 96 entries—*Elspeth Payne, Silver Spring, MD.*

OktobersBest ZinZinnati, 286 entries—*Jack Smith, Cincinnati, OH.*

7th Annual New England Regional Homebrew Competition, 419 entries—*Jason Phelps, Londonderry, NH.*

Piedmont Brewer's Cup, 368 entries—*Robert Aponte, Raleigh, NC.*

Big Muddy Monster Brew Fest, 80 entries—*Robert and Laura Tegel, Godfrey, IL.*

2nd Annual SNAFU Memorial Competition, 154 entries—*Bill Moreland, Henderson, NV.*

Ida Grove Wine & Bier Contest, 51 entries—*RJ Bumann, Ida Grove, IA.*

Light Side of the Beer, 52 entries—*Joshua Superchi, Cheshire, CT.*

Hoppy Halloween 15 - Curse of the Mummy's Thirst, 533 entries—*Steve Piatz, Eagan, MN.*

AHA SPECIAL EVENTS

Visit the Events section of HomebrewersAssociation.org for more information.

February 5

National Homebrewers Conference - Registration Opens

February 24

AHA Rally - Saint Arnold Brewing Co., Houston, TX

February 26

AHA National Homebrew Competition - Registration Opens

March 16

AHA Rally - Stone Brewing World Bistro & Gardens, Escondido, CA

March 18-27

AHA National Homebrew Competition - Entry Deadlines

May 4

AHA Big Brew - A Celebration of National Homebrew Day



AHA/BJCP SANCTIONED COMPETITION PROGRAM CALENDAR

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

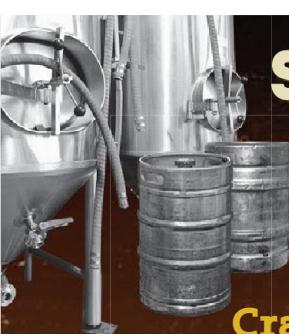


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|---|--|--|
| January 12
Belle City Winter Warmer Homebrew Competition
Racine, WI. Entry Deadline: 1/5/2013.
www.winterwarmer.org | February 2
15th Annual Domras Cup Mead Competition
Savannah, GA. Entry Deadline: 1/23/2013. www.savannahbrewers.com/domrascup.php | February 22
8th Annual Peterson AFB Homebrew Competition
Peterson AFB, CO. Entry Deadline: 1/31/2013.
pafb.brewcompetition.com/ |
| January 12
19th Annual Boneyard Brew Off
Urbana, IL. Entry Deadline: 1/3/2013.
www.buzzbrewclub.org/competition | February 9
The Great Northern Brew-Ha-Ha!
Duluth, MN. Entry Deadline: 1/28/2013.
www.northernalestars.org/greatnorthernbrewhaha.html | February 23
24th Annual Reggae & Dredhop Competition
Boulder, CO. Deadline: 2/15/2013.
hopbarley.org/content/dredhop |
| January 12
Philly Homebrew Club Holiday Ales Competition
Philadelphia, PA. Entry Deadline: 1/5/2013. | February 9
Homebrew Alley 7
New York, NY. Entry Deadline: 1/31/2013.
www.homebrewalley.org | February 23
Bluff City Brewers & Connoisseurs Homebrew Extravaganza
Memphis, TN. Entry Deadline: 2/2/2013.
www.bluffcitybrewers.com |
| January 19
Wee Three Beers of Lager and Ale Christmas Beer Competition
Baker City, OR. Entry Deadline: 1/10/2013. sites.google.com/site/goodlibationshomebrewclub/ | February 9
Lucette Brewing Company's Winter Homebrew Competition
Menomonie, WI. Entry Deadline: 2/8/2013.
www.lucettebrewingcompany.com | February 23
Pro-Am Strong Beer Competition
Atlanta, GA. Entry Deadline: 2/8/2013.
finalgravitybrewing.com/ |
| January 19
AHA Club-Only Competition, Un-Session Beers (OG>1.040)
Delaware, OH. Entry Deadline: 1/11/2013.
www.homebrewersassociation.org/pages/competitions/club-only-competitions | February 15
MMXIII Midwinter Home Brew Competition
Milwaukee, WI. Entry Deadline: 2/2/2013.
midwinterhbc.beerbarons.org/ | February 23
Boston Homebrew Competition
Boston, MA. Entry Deadline: 2/14/2013.
www.wort.org/boston-homebrew-competition.html |
| January 26
Upper Mississippi Mash-Out XII
Saint Paul, MN. Entry Deadline: 1/12/2013.
www.mashout.org/ | February 15
Kansas City Bier Meister 30th Annual Homebrew Competition
Kansas City, MO. Entry Deadline: 2/2/2013.
www.kcbiermeisters.org/kcbm-competition.html | |

come true for me," he said. "Among all the breweries and brewpubs in the Twin Cities, Town Hall has always been my favorite. Mike let me get really involved in the process, from milling and manually mashing in (yes, with a wooden paddle), to emptying and cleaning the mash tun, managing hop additions, whirlpooling, and pumping to the fermenter. I was thrilled to not be twiddling my thumbs or just pushing buttons all day."

Hoops was generous with relinquishing control of the brewing process and letting Sisco call a lot of the shots in the brewhouse. "He always had the beer's best interest in mind, but was open to sharing decisions and ultimately wanted me to be happy with the process and final product," Sisco remembers. "I couldn't have asked for much else."

Amahl Turczyn Scheppach is the associate editor for Zymurgy. He lives and brews in Lafayette, Colo.



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Discover what makes the heavenly brews of Belgium so good.

Yeast by Chris White and Jamil Zainasheff

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Two Belgian dark strong ales with colorful stories behind their names were sent to our judges for this issue.

Brother Thelonious Belgian style abbey ale, brewed by North Coast Brewing Co. in Fort Bragg, Calif., was named for Thelonious Monk, the American jazz pianist and composer. North Coast makes a donation to the Thelonious Monk Institute of Jazz for every bottle sold.

Part of the American Artisan Series, Brother Thelonious is rich and robust with a 9.4 percent ABV and a dark mahogany color. It is available in cork-and-cage bottles as well as 12-ounce

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.

bottles sold in four-packs. Suggested pairings include grilled marinated flank steak with lime-chipotle sauce.

The Sixth Glass, brewed by Boulevard Brewing Co. in Kansas City, Mo., is named after a Hans Christian Andersen tale, "The Watchman of the Tower," in which the lead character, Ole, asks, "Do you know what dwells in a glass?" In the sixth glass "sits the Devil himself."

The Sixth Glass is a brown colored, full-bodied beer with a complex, fruity, estery aroma; a rich, sweet caramel malt flavor containing notes of dark fruit; and a low to medium hop bitterness and flavor. Part of Boulevard's Smokestack Series, it checks in at 10.5 percent ABV and won a bronze medal at the 2008 World Beer Cup.

Suggested pairings include aged cheddar, chocolate desserts, Gouda, Havarti, roast and smoked meats, and wild game.

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 III 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 VII judge, principal author of the 2004 BJCP Style Guidelines and president of the BJCP board who lives in Beavercreek, Ohio.

ON THE WEB

North Coast Brewing Co.
www.northcoastbrewing.com

Boulevard Brewing Co
www.boulevard.com

BJCP Style Guidelines
www.bjcp.org

Commercial Calibration
[www.HomebrewersAssociation.org/
pages/zymurgy/commercial-calibration](http://www.HomebrewersAssociation.org/pages/zymurgy/commercial-calibration)
(Note: This is a Members Only area of the website)

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THE SCORES



Brother Thelonious—North Coast Brewing Co., Fort Bragg, Calif.
BJCP Category: 18E Belgian Dark Strong Ale

THE JUDGES' SCORES FOR BROTHER THELONIOUS



DAVE HOUSEMAN



BETH ZANGARI



SCOTT BICKHAM



GORDON STRONG

Aroma: Moderate spicy, peppery phenols up front. Munich malt-like melanoidins with notes of chocolate and caramel. Dark fruity esters reminiscent of raisins and prunes. Sweet, candy-like aroma. No hop aroma. No DMS. No diacetyl. Alcohol just perceptible and subtle. (10/12)

Appearance: Dark amber/mahogany color with dense, rocky, tan, long-lasting head. Bright clarity with a touch of chill haze. (3/3)

Flavor: Malt forward with sweet, Munich, caramel, and chocolate notes. Balancing hop bitterness without noticeable hop flavor. Spicy phenols and abundant fruitiness of prunes and raisins. Alcohol is quite evident without being hot; no fusels. No DMS. No diacetyl. Finish is on the sweet side, but not cloying, nearly on-target for an Abbey-style ale. (17/20)

Mouthfeel: Very smooth, creamy. Medium to medium-full body with a bit lighter mouthfeel due to generous carbonation. Alcohol warming. No astringency or lingering bitterness in mouthfeel. (5/5)

Overall Impression: Wonderfully drinkable abbey-style ale that exemplifies the style well. Very nice complexity of malts and Belgian yeast character. Sweetness could have been offset with a bit more bitterness or attenuation. Still, this would be very enjoyable with cheeses, sausages, mussels, fries with aioli, or simply as a digestive or aperitif. I enjoyed mine with a dinner of hummus and spanakopita. (8/10)

Total Score: (43/50)

Aroma: Very strong, rich sweet malt with hints of toasted currants, molasses, and ripe prune aromas. Hops not noticed. (10/12)

Appearance: Deep copper brown, burnished with ruby highlights. Very clear. Fine tan foam persists as a small but dense layer on the surface of the beer. It eventually fades to a cloud toward the end of the glass. (3/3)

Flavor: Rich toasty bready malt is pronounced up front, dominates initial impression. A subtle hop bitterness immediately follows, provides clean balance to rich complexity of baked currants, dried prunes, and chocolate. Ripe plum esters present at first fade to the background, and linger at low levels. Malt character also comes forward at the end as fresh crushed caramel malts. Sweetness gives way to low bitterness and clean, dark plum fruitiness. No hop flavor. (18/20)

Mouthfeel: Medium creamy body with sparkling carbonation. Alcohol is evident, almost numbingly warm. The warmth lingers long into the finish. No astringency, but a light acidity is pleasantly present, like ripe stone fruit. (5/5)

Overall Impression: Rich and complex, this beer evolves from start to finish. It starts with pronounced toasty caramel rich maltiness reminiscent of crusty rustic bread. Plum and currant esters carry the role of jam or preserves. Wonderful as a dessert on its own, this beer also serves as an excellent accompaniment to a hearty meat pie. (9/10)

Total Score: (45/50)

Aroma: Malt forward, with nutty and toasted bread aromatics. Solvent notes begin to emerge as the head fades, with ethyl acetate the main contributor. This compound is a common background element produced by Belgian yeast, but it is a little too prominent in this sample. Toning it down would better bring out the malt complexity. (8/12)

Appearance: Gorgeous copper-mahogany color, with a white head that lasts well and leaves lace down the inside of the glass. Carbonation is less than classic Belgian examples. Clarity is excellent. (3/3)

Flavor: A solid malt backbone keeps aromatics in check for a while, but the ester and solvent notes ramp up and become dominant throughout the middle and finish. The malt has pleasant toasted and caramel malt components, with raisin and dark fruit notes underneath. Very little roast malt is apparent—nicely done. Hops are absent in the flavor, but balance the malt sweetness in the finish. As in the aroma, ethyl acetate is strong, and although it also contributes almond and nutty components, the solvent notes distract from the malt complexity. (16/20)

Mouthfeel: Moderate to full mouthfeel from residual sugars. The alcohol warmth is medium-high, not quite as subtle as classic examples. A little more CO₂ would liven things up. (3/5)

Overall Impression: A really nice beer with good malt complexity that provides a solid backbone along with nutty/toasted notes. The hop character is balanced, and while the alcohol level is appropriate, it seems higher than it really is due to the solvent notes. (7/10)

Total Score: (37/50)

Aroma: Malty-rich nose with complementary dark fruit and spicy alcohol. The malt has a layered texture with toasty, bready, and sweet components. Dark fruit: raisins, prunes, and dried cherries. Nothing roasty. Alcohol is definitely noted but not sharp. Some spicy and peppery phenolics. Complex. (10/12)

Appearance: Beautiful deep reddish-copper color. Almost brown. Crystal clear. Moderate-sized tan head, retention a bit weak. (3/3)

Flavor: Initial malty richness but not sweet; finish is dry with moderate bitterness. The alcohol adds to the bitterness but the overall impression is still malty. Deep fruit and alcohol flavors, mirroring the aroma, interplays with the malt. Spicy and fruity accents. Aftertaste has all these components—malt, spice, fruit, alcohol. Raisins, dried currants, and plums, with hints of cocoa and vanilla. (16/20)

Mouthfeel: High carbonation. Full body, but not syrupy or sweet. Warming but only slightly hot. Smooth texture. Carbonation adds to the impression of body. (4/5)

Overall Impression: A little young—the alcohol is slightly hot. This would improve with age. Nicely dry. Belgians would certainly appreciate the attenuation and carbonation levels. Dark fruit flavors are great, but they do tend to favor the darkest dried fruits, like raisins. The malt does a good job of balancing the alcohol but I kept thinking that time would give it a more velvety texture. Hint of chocolate is a touch too much, but that should mellow with time. (8/10)

Total Score: (41/50)



THE JUDGES' SCORES FOR THE SIXTH GLASS



Aroma: Peppery phenols with substantial alcohol up front. Prune and raisin esters follow up. Light floral, spicy hop aroma. Malt takes a back seat to the fermentation products but does come through as a light Munich malt-like melanoidin and caramel note. No DMS or diacetyl. Fragrant and inviting. (11/12)

Appearance: Amber color with mahogany highlights. Somewhat hazy; OK for the style. Big, dense, tan, long-lasting head. (3/3)

Flavor: Munich malt-like melanoidins with considerable caramel notes, lots of dark, pit-fruit esters (raisins, prunes, figs), and considerable alcohol. Peppery and slightly clove-like phenols balance and complement the esters well. Very light floral/spicy hop flavor. Moderate hop bitterness balances the malt sweetness, leaving a somewhat dry finish. No DMS or diacetyl. No hot fusel alcohols. (18/20)

Mouthfeel: Creamy, smooth, with noticeable alcohol warming. Well attenuated with a medium body. No astringency or lingering bitterness in mouthfeel. Generous carbonation. (5/5)

Overall Impression: Very well balanced and enjoyable. On target for the style. Esters, phenols, hops, malt, and alcohol all come together to create a balanced and very drinkable Belgian dark strong ale in the Trappist style. Excellent beer to have with well-aged cheddar or roasted pork, beef, or wild game that would hold up to this bold beer. (9/10)

Total Score: (46/50)

Aroma: Strong caramel maltiness with hints of peppery plum, dark fruit esters, and no hop aroma. Ripe Bartlett pear esters emerge on a swirl of the glass. (10/12)

Appearance: Glass initially fills with a creamy, biscuit-like light tan foam, which drops out slowly to a burnished gold copper, very clear beer. (3/3)

Flavor: Bready, light caramel rich maltiness up front followed by a burnt sugar, dark dried prune fruitiness and light pepper note. Midway, a light saltiness emerges. No hop flavor, though a barely detectable bitterness provides balance. Finishes rich, with a low, lingering toasted caramel note, and clean. Ripe peach and pear esters emerge mid-palate, fade, then return at the finish. (17/20)

Mouthfeel: Full bodied with low, softish carbonation. No astringency. Alcohol warmth starts at moderate level, grows stronger and lingers on the tongue. A light acidity gives an impression of a crisp, clean finish. (5/5)

Overall Impression: Rich and malty, but very fruity and complex; a blend of dried peach, dried prunes, and toasty caramel malt. Very dessert-like. Would go quite well with peach cobbler and vanilla ice cream, if one were in the mood. (9/10)

Total Score: (44/50)

Aroma: Complex aroma, with a cornucopia of toasted malt and yeast components that echo the BJCP style guidelines. The fermentation notes include peppery phenols, with lower levels of clove as well as light bubble gum esters. Raisin and stone fruit notes are evident and balanced, and I pick up the dark candi notes found in classic examples of the style. (10/12)

Appearance: Copper color with mahogany highlights and a dense head that takes several minutes to drop to half the initial height. Some yeast was roused when it was poured, but that is partly due to my impatience in tasting it before it had settled after shipping. (3/3)

Flavor: Great depth of flavors, starting with a rich malt character that displays toasted, toffee, and nutty components. Classic notes of raisins, figs, and other dark fruits but without any burnt, roasted or bitter notes. Fermentation character is complex—mainly peppery phenols, but also vanilla, floral esters, and just a hint of tutti frutti. (18/20)

Mouthfeel: Great carbonation and conditioning are key components of this style, and this example is on the mark. The mouthfeel is full, without being gassy, and the residual sugars that linger on the palate are not too sweet. The alcohol warmth is evident, but much softer than most beers with this alcohol content. (5/5)

Overall Impression: This was a wonderful beer, with nearly perfect balance and a spectrum of malt and fermentation flavors that yield complex aromas and flavors, from start to finish. This could hold its own against any classic example of the style. (10/10)

Total Score: (46/50)

Aroma: Fruity, with ripe cherries and berries. Toasty malt. Spicy, pepper-like phenols. Fleshy fruit notes, like pears and apples. Intense aroma, but not with deeper notes of dark malts or dried fruits. Slightly floral and rose-like. Some sweetness. Complex and interesting, unmistakably "Belgian" character. (11/12)

Appearance: Very deep amber color. Slightly hazy. Huge rocky beige head, persisted well. (3/3)

Flavor: Toasty, bready malt; rich without being sweet. Medium bitterness. Dry finish. Aftertaste is malty-fruity with a noticeable alcohol character. Has a rose-like expression that enhances the fruitiness. Extraordinarily well-balanced. Fruity notes (cherries, pear, and a bit of banana) are strong but blend well with the other flavors. Spicy accents. (18/20)

Mouthfeel: High carbonation. Medium-full body. Warming alcohol, more apparent in the aftertaste. Very deceptive in its strength. Smooth. (4/5)

Overall Impression: Kind of reminds me of Rochefort or Westvleteren beers, with the fruit-forward character. Doesn't have some of the "darker" character (dark fruit and malts) of some examples but is very complex and interesting nonetheless, certainly within the style range. Nicely dry and drinkable. The complexity is outstanding, even without the darker components. Should still improve with time; I recommend cellaring for a year or two. I enjoyed this one greatly; a touch more age would make this nearly perfect. (9/10)

Total Score: (45/50)

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by Charlie Papazian



Red, White, or Brew?

Wine's red or white is not beer's light or dark.

In the wine world, one of the first questions a wining diner is asked is "Red or white?" With today's choice of beer types and brands, there are a lot more options; it's impossible to do justice with the simple question of "light or dark?" Two simplified options won't capture today's beer minds. They don't even begin to set the direction of understanding beer choices and the potential for food-enhancing interactions.

Theoretically, both light and dark beers can be light or bold, hoppy or not hoppy, bitter or not bitter, malty sweet or not malty sweet, sour/acidic or not sour/acidic, floral or not floral, high in alcohol or low in alcohol. In actuality, choosing between light or dark beer may lead you in the same direction.

The choice of beer is always guided by the circumstances in which it is going to be enjoyed. Should it refresh? Will it quench a nasty case of thirst? Will it enhance relaxation? Is it going to celebrate or highlight a memorable toast? Is it going to be savored in and of itself? Is it going to complement food? Is this beer supposed to be a "wake up the palate" beer? Navigating the circumstances is the first step toward determining the right beer.

Let's get back to wine's "red or white"; presumably this choice is made to enhance the course of a meal. It's simple enough for most wine drinkers. But with so many elements of flavor in beer, the adventure for beer paired with food is not quite as straightforward if you are looking to elevate your meal experience to greatness and your enjoyment to memorable.

Important Points About Beer Flavor

Here are a couple of common, but very dynamic, flavor elements of beer that significantly interact with the flavors of certain foods. Beer, like wine, is mildly acidic by way of its natural fermentation. As with Champagne, you also have some degree of acidic contribution from carbonation; dissolved carbon dioxide gas is actually carbonic acid when in solution. If there are acidic fruit flavors as an ingredient, this too adds acidity. The introduction of some types of desirable food-friendly bacteria also can add to acidity. If all this wasn't enough, here's another beer factor: roast malt adds a different type of acidic flavor. Roasted malt, toasted malt, black malt, roasted grains, and chocolate malts all add color, of course, but what matters more are the complex roast flavors along with roast grain acidity.

All this information about acidity and sourness is important to know when pairing with certain foods. Food cultures around the world know that sourness in one food item can enhance the flavor of other food. Whether it is sauerkraut, wasabi, vinegar, lemon or lime juice, tamarind paste, pickles, mustard, hot sauce, BBQ sauce, Kim chi, or beer, a shot of acidity will enhance certain protein flavors in meat and seafood; in particular, these types of proteins are called inosinate. Sauerkraut with meat and beer—yes. Wasabi and vinegar-enhanced sushi rice with raw seafood and beer—yes. Lemon juice, a garnish of bitter arugula or watercress with beef carpaccio and beer—yes. Tamarind paste in Thai beef curry and beer—yes. BBQ sauce on a pile of smoked pork and beer—yes. A roasty porter or stout is the classic pairing with raw oysters. There's a reason why culinary traditions have evolved: to maximize the



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Vitoria Vienna Pils

ALL GRAIN RECIPE

INGREDIENTS

for 5.5 U.S. gallons (21 liters)

9.5 lb	(4.3 kg) Briess Vienna GoldPils malt
2.0 oz	(56 g) German Hallertauer hops, 4.4% a.a. (60 min)
1.0 oz	(28 g) German Saphir hop pellets, 4.5% a.a. (20 min)
1.0 oz	(28 g) German Saphir hop pellets, 4.5% a.a. (dry hop)
0.25 tsp	(1 g) powdered Irish moss
	German or Bavarian type lager yeast. I use White Labs Cry Havoc.
0.75 cup	(175 ml) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Target Original Gravity: 1.048 (12 B)

Target Extraction Efficiency: 75%

Approximate Final Gravity: 1.012 (3 B)

IBUs: about 41

Approximate Color: 5 SRM (10 EBC)

Alcohol: 4.5% by volume

DIRECTIONS

A step infusion mash is employed to mash the grains. Add 9.5 quarts (9 l) of 140° F (60° C) water to the crushed grain, stir, stabilize, and hold the temperature at 132° F (56° C) for 30 minutes. Add 4.75 quarts (4.5 l) of boiling water, 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 3.5 gallons (13.5 l) of 170° F (77° C) water. Collect about 5.5 gallons (21 l) of runoff. Add 60-minute hops and bring to a full and vigorous boil.

The total boil time will be 60 minutes. When 20 minutes remain, add the 20-minute hops. When 10 minutes remain, add the Irish moss. 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. Transfer 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 one week or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hop pellets for dry hopping. If you have the capability, "lager" the beer at temperatures between 35-45° F (1.5-7° C) for 3-6 weeks. Prime with sugar and bottle or keg when complete.

Vitoria Vienna Pils

MASH EXTRACT RECIPE

INGREDIENTS

for 5.5 U.S. gallons (21 liters)

7.0 lb	(3.2 kg) light malt extract syrup or 6 lb (2.7 kg) light malt extract powder
0.25 lb	(112 g) Briess Victory malt
0.25 lb	(112 g) Briess Biscuit malt
2.5 oz	(70 g) German Hallertauer hops, 4.4% a.a. (60 min)
1.0 oz	(28 g) German Saphir hop pellets, 4.5% a.a. (20 min)
1.0 oz	(28 g) German Saphir hop pellets, 4.5% a.a. (dry hop)
0.25 tsp	(1 g) powdered Irish moss
	German or Bavarian type lager yeast. I use White Labs Cry Havoc.
0.75 cup	(175 ml) corn sugar (priming bottles) or 0.33 cup (80 ml) corn sugar for kegging

Target Original Gravity: 1.048 (12 B)

Target Extraction Efficiency: 75%

Approximate Final Gravity: 1.012 (3 B)

IBUs: about 41

Approximate Color: 5 SRM (10 EBC)

Alcohol: 4.5% by volume

DIRECTIONS

Place crushed grains in 2 gallons (7.6 l) of 155° F (68.5° C) water and let steep for 45 minutes. Strain out (and rinse with 3 quarts (3 l) hot water) and discard the crushed grains, reserving the approximately 2.5 gallons (9.5 l) of liquid to which you will now add malt extract and 60 minute hops. Make sure extract is completely dissolved before bringing to a boil.

The total boil time will be 60 minutes. When 20 minutes remain, add the 20-minute hops. When 10 minutes remain, add the Irish moss. After a 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 hops and direct the 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 one week or when fermentation shows signs of calm and stopping. Rack from your primary to a secondary and add the hop pellets for dry hopping. If you have the capability, "lager" the beer at temperatures between 35-45° F (1.5-7° C) for 3-6 weeks. Prime with sugar and bottle or keg when complete.

pleasure of eating. Oh yes, let's not forget: Beer is food!

Wine, too, has acidity, but wine doesn't have hops. Beer has hops, which contribute aroma, flavor, and bitterness. The floral, fruity, and honey-like aromas and flavors of hops are delightful in and of themselves—but bitterness. Ah! This is beer's secret weapon. Why? Because bitterness, just like acidity, can add to the enhancement of the same meat or fish protein flavors. Bitterness in beer can be subtle or over-the-top assertive. People of all nations are genetically programmed to perceive the intensity of bitterness differently. So one person's very bitter beer is another person's "I can't taste the hops."

With food pairings, take your cues from your own experience. Perhaps the best approach is to consider hop bitterness like you do salt; enhancing food (especially meat or fish protein) to which a balanced and personalized sprinkle has been added. Serve yourself a hoppy Pils, a bold, roasty stout, or a hop-forward India pale ale.

Beer acidity and bitterness can enhance the enjoyment of food, and vice versa—the foods they enhance have a mutual effect on your perception of your beer as you progress through your meal. Note: Beer's assertive bitterness will evolve to a more balanced character when paired with salty, acidic, fatty, creamy, and protein-rich foods.

This is a narrow discussion of beer and food pairing, but the ideas presented are fundamental to the understanding of why we enjoy certain food and beverage combinations.

If I'm ever asked "light or dark," I'm tuning out, hoping the beer isn't stale and that the chef didn't initiate that conversation. As far as the question: red, white, or brew? I'll make mine a brew.

Some classic combinations to try:

- Roasty stout with raw oysters or lightly sautéed scallops
- Hoppy Pilsener or IPA with beef carpaccio or medium-rare beef
- Malty and roasted malt porter with

creamy feta, aged gouda, or parmesan cheese

- Pale ale with red/tomato sauce-based pizza
- Roasty brown ale with seafood stews
- Imperial stout with ice cream—pure hedonistic and unscientific enjoyment
- Hoppy, mildly bitter nut brown ales with salad graced with blue cheese or Caesar dressing
- Malty brown ale with Szechuan green beans
- Barleywine of your choice with blueberry pie

So let's cut the shuck and jive and get on with a beer recipe. Here's Vitoria Vienna Pils, a beer that reflects the flavors, aromas, and nuanced complexity of even the simplest of recipes. This unfiltered, naturally conditioned German style Pilsner is a hop flavor- and hop aroma-enhanced lager with a subtle toast malt character that will elevate any food accompaniment.

Charlie Papazian is founder of the American Homebrewers Association and author of *The Complete Joy of Homebrewing*.

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Samichlaus Brew-In



Several of the brews underway (left). Has-Been Czar Don Sajda (the man behind getting this tradition started) carting his freshly brewed Samichlaus into his garage (right).

Every year, the holiday season arrives with much hustle and bustle. It begins with preparation for Thanksgiving meals (and the ever-glorious leftovers), continues through Christmas and other winter holidays, and finally wraps up after the New Year celebration. It's a time for celebration, fellowship, and of course, tradition.

Like many homebrewing clubs, the Kuykendahl Gran Brewers (KGB) of Houston, Texas have a number of traditions. As the holidays near, we prepare for a special day that always proves to be a convivial time: the Samichlaus Brew-In. Samichlaus, Swiss German for St. Nicholas, is a 14 percent ABV lager currently brewed by Brauerei Schloss Eggenberg once a year on St. Nicholas Day, December 6. In the spirit of that tradition, we get together every year on December 6 at club member Don Sajda's house whether rain or shine, balmy warm or absolutely frigid, to brew our version of this sumptuous heavyweight. Since the tradition began eight years ago, it seems that having December 6 fall on a weekday

is even more popular than on a weekend. Many comrades are more than happy to take a break from work for a little homebrewing camaraderie.

For 2011, brew teams started as early as 6 a.m. with the temperature at a balmy 33 degrees. A diverse array of brewing equipment was employed: towering, gravity-drawn brew sculptures; horizontal, pump-driven sculptures; simple igloo coolers; and even the "Sami-Lite" system, as we jokingly call it since its first attempt at brewing this whopper fell embarrassingly short. To set the record straight, however, it did manage to pull through last year and hit a respectable 1.142 OG, contributing its share to the total volume of Samichlaus brewed that day: 48 gallons!

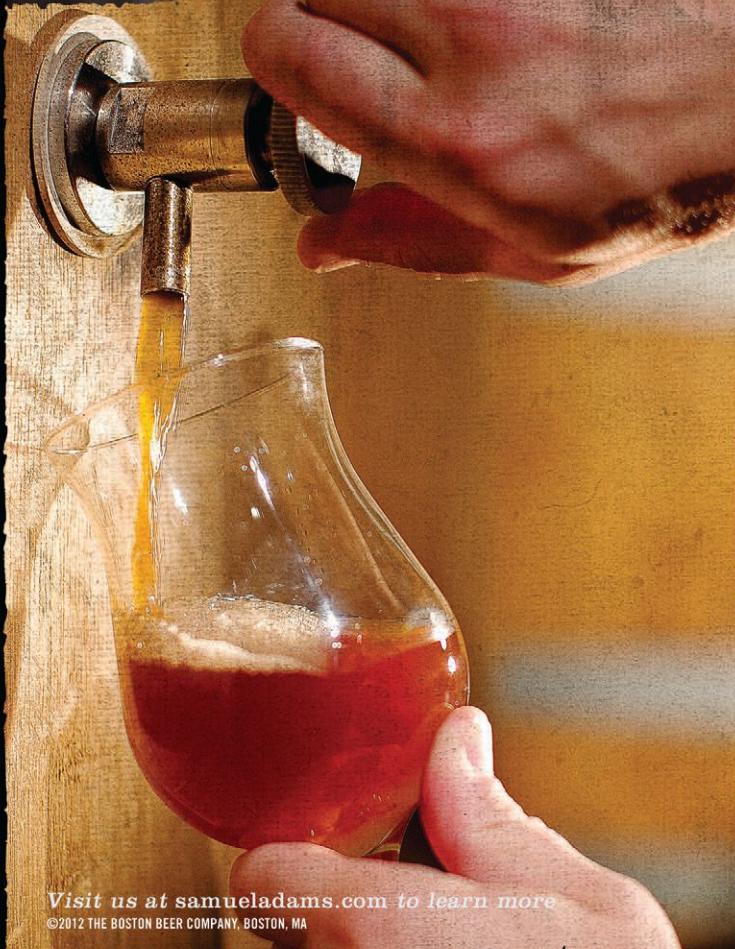
Each brewing team started with a fairly common recipe, but made slight adjustments to suit individual tastes. The recipe in Beeroscope (page 5) is the one that Al Franciosi and I brewed, so hopefully you can give it a shot! Feel free to adjust honey type, hops, or even the base

malt—but make sure you strive for that 1.140 gravity. The beer should be brewed and then cellared to enjoy December 6 of the following year.

This tradition is about more than brewing, though—it's also about getting together as a club and celebrating the holiday season. While the brewing is going on, there is plenty of sampling and sharing of past homebrewed vintages of Samichlaus as well as the commercial version and other treats. These fortify our brewing efforts and help ward off the cold until the whole roasted hog from the potluck fills our bellies. The temperature might never get out of the 30s, but we feel plenty warm and cozy.

It's always a heck of a day, for a heck of a beer. I look forward to brewing it again each year, and tasting and sharing the fruits of our labor.

Andrew Elliott is a third-generation homebrewer and current Czar of the Kuykendahl Gran Brewers (KGB) in the Northern Houston, Texas, area.



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